

MINNESOTA CHATS



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'U' Head Sees Educational Changes Sure

University, College Training Will Be Adapted to War Effort

TREND UNMISTAKABLE

Federal Help Called Essential to Meeting Cost of Change-over

Basic changes in the educational procedures of colleges and universities, including the University of Minnesota, are inevitable in the near future as these institutions adapt themselves to the war, President Walter C. Coffey of the University of Minnesota believes.

As fast as government action, including financial assistance, makes it possible, he said, higher educational institutions will offer able-bodied male students what will amount to a pre-induction training period. It is expected that soon after reaching the age of 20 years these men will be called to duty.

Dr. Coffey said the old concept of a four-year educational period, with vacations, is doomed, at least for the period of the war.

Specialized courses fitting them for approved types of service that will contribute directly to the war effort will be offered to women students, of whom large numbers will be on the campus, and to male students who are not qualified for military service.

No Doubt of the Trend

President Coffey pointed out that recent official statements have begun to make clear the policy to be followed, among them that by Secretary Henry L. Stimson, saying that qualified male students may not expect to continue in their usual student status after the end of the term in which they reach age 20. The Navy has indicated that it sees shorter college terms coming by stating that Naval ROTC courses will be only as long as the courses in which its students are enrolled.

Likelihood of early service is not, however, a sensible reason for remaining away from the university, President Coffey said, inasmuch as the university classroom is the best place for the student to gain knowledge vital to his efficiency as a soldier or sailor. He declared that every young man who can enter should take full advantage of whatever training period remains to him, both for his own sake and for that of his country.

Fields in which college training is most essential have already been designated through action of Congress appropriating money to help students in accelerated courses who are prevented from earning money by elimination of vacations. These fields are Engineering, Medicine, Dentistry, Pharmacy, Physics, and Chemistry.

Funds Are Necessary

But the government must do more than it has done toward providing financial aid if institutions such as the University of Minnesota are to go on a fully accelerated basis, W. T. Middlebrook, comptroller, stated. He was a member of the committee through whose efforts \$5,000,000 has been appropriated as a start toward student aid.

"Unless we have students no paper plan of shortened courses will amount to very much," Mr. Middlebrook said, "and as matters stand now, there must be government financial aid."

Both he and President Coffey expressed a hope that the government will soon make clear what its plans are for assuring the attendance of the young men whose training is so vitally needed in the war.

Dr. T. Raymond McConnell, associate dean of the Arts College at Minnesota, pointed out that his college has recently introduced a new two-year curriculum which will speed the training of certain groups of students. University of Minnesota also has established a policy under which students may make military or naval training their major subject toward a de-

Library Has Center for War Information



A major activity of the University of Minnesota's War Information Center is the war information reference room in the University Library. Books on war subjects, war geography, military matters and the like, are available to readers there, together with current pamphlets, reports and governmental papers. Harold Russell, reference librarian, is seen in the picture talking to the attendant, Mrs. Ella Schnickel.

Mankind Must Learn to Know Itself, Not Seek to Restrict Science, Says Tate

Arts College Dean Says We Must Learn to Relate Increased Knowledge to Questions of Right and Wrong

Dr. John T. Tate, dean of the College of Science, Literature and the Arts, and distinguished physicist, recounted the first steps in the development of physical science and defended science from its detractors in the following address delivered before the Minnesota Chapter of the Society of Sigma Xi and a public audience. He is on leave doing wartime research at the Carnegie Institution, Washington, D. C.

The designation of the Society of Sigma Xi "Companions in Zealous Research" has taken on in the past year or two—and particularly since December 7—a significance out of the ordinary. Our country is again at war. We are engaged in a struggle, the seriousness—

gree. Both the latter will be introduced this fall.

Educational institutions must not allow themselves to be presented in the guise of refugees for men seeking to avoid military service, President Coffey added.

Making clearer than ever before the prospect that both men and women students in colleges all will soon be engaged in war preparatory study, President Coffey distributed to all deans a recent bulletin of the American Council on Education summarizing the report on the War Manpower Commission on "Utilization of Colleges and Universities for the Purposes of the War." It said in part:

Major Points Revealed

All able-bodied male students are destined for the armed forces. The responsibility for determining the specific training for such students is a function of the Army and Navy.

For those students, men and women, who are not to serve in the armed forces there should be developed through the War Manpower Commission plans of guidance which will help the students to determine where they can make the most effective contribution to the war effort, including essential

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the deadliness of which most of us have not even yet begun fully to realize.

In this grim crisis thousands of scientists have given up their normal lives and work to join in a common, tremendous enterprise—to apply all of their knowledge, all of their ingenuity and resourcefulness—to improve every aspect of this country's military machine, human and material. In this enterprise physicists are called upon to assume an especially vital role. Indeed, this has been called a physicists' war. And although we repudiate with loathing the unjust implication of that phrase, that we are to be held responsible for this war, it is not difficult to see why, willy nilly, we must play a vital if not a decisive role in it.

Physics is the science which leads to an understanding of matter and of energy—to the sort of knowledge which invests mankind with the ability to control and to direct the subtle as well as the titanic forces of nature to his own purposes—be they good or evil.

Warfare—and particularly modern warfare—consists in the controlled and coordinated application of power to the destruction of enemy objectives. He wins who can concentrate on these objectives the most power, the most quickly and accurately.

It is for these reasons that this most mechanized of all wars may be termed a physicists' war. Not only does each weapon or offensive unit of warfare present its individual physical problems—but the coordinate use of these offensive units involves intricate communication systems and their direction to objectives implies accurate means of detection and location. One can't hit an airplane unless one knows how high it is—how fast it is moving—and can coordinate this knowledge with split second timing of aim and fire. Similarly a submerged submarine cannot be sunk unless physicists can supply eyes to see and range-finders to locate and to follow them at considerable distances under water.

Worth Million Troops

The part physicists have already played in this war is dramatically indicated by a statement—credited to the British—that in certain situations with which they have been confronted one hundred

Soldier's Poem, "A Note to Correspondents"

At the request of the editor of Minnesota Chats, permission has been given to publish a sonnet, "Note to Correspondents," written by Parker Lesley, a member of the fine arts department, College of Science, Literature and the Arts, until he enlisted in the United States Army in June.

Lesley, who is at Fort Francis E. Warren, Wyoming, said he wrote the poem in reply to people who kept writing him to commiserate with him over being in the Army and is, evidently, his way of saying "save that stuff" for some other occasion.

To the editor of "Chats" he wrote, "It might be used as general instructions, (your letters do not need them) for people writing to soldiers."

His lines are as follows:

Note to Correspondents

If you have tears, we ask that they be saved:
The sky has tears to weep us worthily.
If there, within your heart, be agony,
Hoard it a while. The earth, its cheeks engraved
By unreturning footsteps, and its heart,
Beating a slower pulse, with fresher blood
Infused, will clasp at sharper pangs, and good
Though grief may be, keep it from us apart.

Send us your laughter, wrapped in commonplace
And ribboned with a tale of tranquil days.
Turn to our eyes a pride-illuminated face
Bright in the recollection of our ways
Before we learned that men are rarely men
Until they kill to live, dying to live again.

Lesley is now in officer training for the Quartermasters Corps.

physicists have been of more importance to them than a million troops. These physicists, for instance, saved British shipping from destruction or immobilization by quickly solving and countering the magnetic mine. They enabled the R.A.F. to avoid losing control of the air over British following Dunkerque. They have made the

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Uncertainties To Mark Course Of 'U' War Year

Army-Navy Coloring Will Increase With Coming of More Special Groups

U. S. PLANS PENDING

Men to Be Inducted on Reaching 20; May Be Re-assigned

The University of Minnesota began on Monday one of its most crucial years with a strong military aspect observable in most of its activities and the war holding a curtain over the picture of the immediate future.

In the light of the Secretary of War's statement that no able-bodied man student can be sure of remaining in college beyond the quarter in which he is currently enrolled and that of the War Manpower Commission that both men and women, if they stay in college, will be shifted into studies directly contributory to the war, no definite statements of what the year will hold for an individual can be made at this time. Men inducted on reaching age 20 may be reassigned for specified training.

Attendance figures, to be released later in the week, are expected to show a decline in the neighborhood of twenty percent from the enrollment of a year ago. At the same time, some of the colleges, with direct relationship to war, such as Medicine, Dentistry, Pharmacy and the Institute of Technology, will show much smaller declines than that. Freshman classes in Medicine and Pharmacy were admitted in June.

Freshman Convocation Today

President Walter C. Coffey will deliver his annual fall message to faculty and students at the opening convocation, Thursday, October 1, at 11:30 a. m. in Northrop Memorial Auditorium.

Football season is already under way and, following the Pittsburgh game of last Saturday, Dr. George Hauser's Gophers will meet Lt. Col. Bernie Bierman's team from the Pre-Flight Training School of the Navy, Iowa City, this Saturday in Memorial Stadium.

Most of the administrative staff of the University of Minnesota will be on the campus this year as usual, although Dr. W. S. Carlson, director of admission, is in service with the Army Air Corps, and Dean John T. Tate, physicist and head of the College of Science, Literature and the Arts is in research work at the Carnegie Institution, Washington, D. C.

Dean Wesley E. Peik of the College of Education has returned to his desk following a serious illness.

During the summer, W. T. Middlebrook, comptroller, spent several weeks in Washington, working with educators and federal authorities on plans for providing federal assistance to needy students in certain categories, to enable them to continue their studies along lines which will produce a contribution to the war.

Army, Navy on Campus

Many groups of students in actual military fields or in lines directly related to military activity will be on the campus during the coming year. Two special groups of Navy enlisted personnel, one in training to be electrician's mates and one in training as machinist's mates, have been assigned to the Minnesota campus for the duration. To these the Navy may add during the fall a group of bakers and a group of Diesel engine technicians, but arrangements for the two latter have not been completed.

There will be the Army ROTC, with about its usual quota, approaching 900 in basic and advanced courses combined, and the Navy ROTC which this year will have four classes for the first time, the class now made up of seniors having entered as its first in the fall of 1939.

Civilians in training in pre-ard techniques for the Signal Corps are on the campus studying under the Engineering Manage-

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Milk Powder To Be Popular

The purchase of dry powdered skim milk in huge quantities for military and lease-lend use may keep this new product off the grocer's shelf for the time being, but eventually the milk powder will be on every housewife's pantry shelf as an important cooking ingredient, says University Farm specialists.

To meet the demand for information on how milk in convenient, easy-keeping powder form can be used in recipes, the Minnesota Agricultural Extension Service has just published, "Dry Skim Milk, Its Value and Use," Extension Bulletin 237, available free from University Farm or at any county extension office.

The authors are Virginia Anderson and Mrs. Blanche Agrell of the University home economics staff. The publication discusses not only the food value of dry milk but also lists tested recipes for the use of the ingredient in beverages, quick breads, yeast breads, cereals, cakes, cookies, desserts, soups and sauces.

Uncertainties Will Mark Year

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ment Science, Defense Training Program, and there is also a group of men of the Army Air Corps whose principal training is conducted in a Minneapolis defense industry, but who are living in campus dormitories.

Old Union Now "Ship"
The former Men's Union building on Pillsbury Drive has been converted into a headquarters for the U. S. Naval Training School (Electrical), and Commander Joseph Baer, ranking naval officer on the campus, has established an office there. Lt. Comm. Joseph A. Flynn is executive officer of the Naval ROTC, his offices remaining on the second floor of the Armory. Colonel Harry L. King remains in charge of the Army ROTC.

Starting when college opens late this month, students in the University of Minnesota for the first time may work for a degree with military or naval science and tactics as their major field.

Students enrolling in the Naval ROTC or in the advanced course of the Army ROTC may either work for a reserve commission, as at present, while pursuing their main studies in some other field, or may specify that the military or naval course work shall be the main theme leading to a degree of bachelor in military or naval science.

The new sequence is announced in the recently printed 1942 catalog of the College of Science, Literature and the Arts, in which most of the military majors are expected.

W. H. Bussey, assistant dean of the college, in making the announcement said Minnesota was one of the few universities in which such a course has been arranged leading to a degree.

Law Librarian Leaves
Among staff changes will be the loss of Minnesota's veteran law librarian and appointment of his successor.

Arthur C. Pulling, for 30 years librarian in the University of Minnesota Law School, has resigned to become administrative head of the law library at Harvard. Mr. Pulling will take up his new duties October 1. He and Mrs. Pulling will make their home in Cambridge.

Mr. Pulling came to Minnesota in 1912 shortly after the appointment of Dean William R. Vance by the late President George Edgar Vincent, and during the period of his librarianship he has built up the law collection from about 17,000 volumes to more than 128,000.

He has the reputation of being one of the shrewdest and most successful book collectors among law librarians. Minnesota's is now fifth in total size among law collections, and in American and British legal material ranks second only to Harvard, which is considered the outstanding American law school.

Material he has assembled has also been of great value to scholars in departments other than the law school.

Mr. Pulling was an assistant at the Harvard Law Library when he left thirty years ago to come to Minnesota, so is returning to the place of his early labors. At Harvard he will manage a law collection of 600,000 volumes, the largest in the world.

He has been associate editor

Dr. Macy to Head Sigma Xi Chapter

Harold Macy, professor of dairy bacteriology, University Farm, has been elected president of the Minnesota chapter, Society of Sigma Xi, for the coming year, succeeding Professor Frank H. MacDougall of the School of Chemistry, Dr. Alan E. Treloar, associate professor of biostatistics, becomes vice-president and Dr. Harold P. Klug, department of inorganic chemistry, secretary-treasurer. The symposium committee to take charge of next year's Sigma Xi lectures, is made up of Professors Herbert K. Hayes, J. William Buchta and Cecil J. Watson. Seventy-nine undergraduates, graduate students and faculty members were admitted to membership. Phi Beta Kappa, honor society in the Arts College, elected to its presidency Professor Marbury B. Ogle, head of the department of the classics. He succeeds Miss Elizabeth Jackson, members of the Department of English faculty. Clara Hanke Koenig of the Office of Admissions and Records was re-elected secretary. Phi Beta Kappa elected 45 to membership.

of The Minnesota Law Review since 1929 and its business manager since 1940.

Some Faculty Changes

The Board of Regents of the University has filled the vacancy created by retirement of Carlyle M. Scott from headship of the department of music and appointed Sinclair Lewis, Minnesota-born author, to teach an advanced course in creative writing during the fall quarter of the present college year.

Paul Oberg, graduate magna cum laude of the music course at the University of Minnesota in 1925, and until recently head of the department of music and director of the orchestra in the University of Wichita, Kan., will succeed Dr. Scott.

The appointment is considered one of the important ones recently made at Minnesota because of the high ranking of the music department and the general reputation of Minneapolis as a center of musical activity.

Oberg was born in Center City, Minn., in 1904. He holds an M.A. degree from the Eastman School of Music, connected with the University of Rochester, N. Y., has studied in the Juilliard School of Music, New York, and has done graduate work in the University of Minnesota. He is married and has two children.

During his musical career he has been organist and choir director in Lutheran and Episcopal churches in Minneapolis, Weehawken, N. J., Rochester, N. Y., and Wichita. He has held his present position in the University of Wichita for nine years. Besides administering the department there he is professor of the theory of music and of piano.

During years when he lived in Minneapolis he was pianist of the Minneapolis Symphony Orchestra in modern compositions requiring symphonic use of the piano. He also was a member of the staff of WCCO and for one year taught music in Gustavus Adolphus College, St. Peter, Minn.

Dr. R. A. Gortner Gets High Honor

Dr. Ross A. Gortner, chief of agricultural biochemistry, was awarded the 1942 Thomas Burr Osborne medal at the twenty-eighth annual meeting of the American Association of Cereal Chemists in Chicago.

The medal, one of the highest awards made to biochemists, is given annually to scientists who have rendered distinguished service in research and student training in cereal chemistry.

Dr. Gortner has died since this statement was written. An obituary will appear in the Oct. 22 issue of Minnesota Chats.

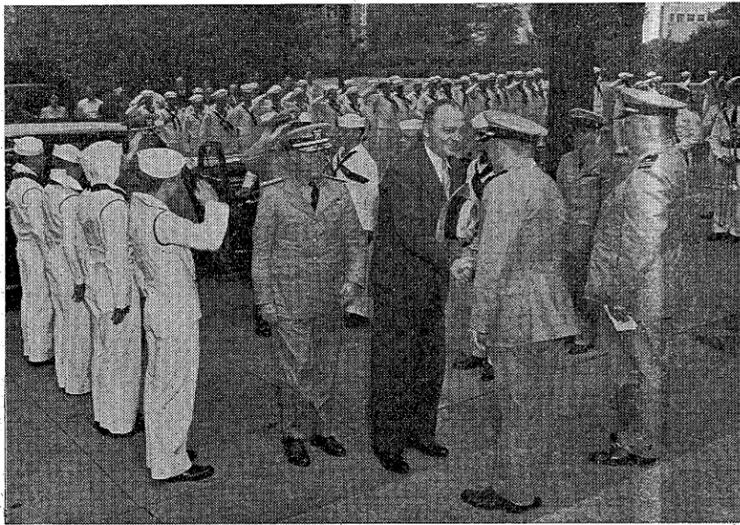
Everett Miller Resigns

Everett Miller, veteran member of the department of visual education at the University of Minnesota, has left the company to take a position with the Radio Corporation of America which is cooperating in a program of troop training films at Wright Field, Ohio. Miller will work on the sound recording phase of the films. Also at Wright Field is Robert A. Kissack, formerly head of visual education, who left last spring and is employed on the same project.

Highest Waterfall in World

The highest waterfall in the world is Kukenam in British Guiana, 2,810 feet.

Admirals Commission USS Minnesota



The picture above shows Commander Joseph Baer, ranking naval officer on the Minnesota campus, greeting Gov. Harold Stassen when he accompanied high naval officials to ceremonies in which the Old Union building was formally commissioned USS Minnesota. Rear Admirals John Downes, Ninth Naval District commandant, and Randall Jacobs, head of the Bureau of Personnel, U. S. Navy, came to Minneapolis to take part in the ceremony, Saturday, August 22.

Indoctrination? Brother, Listen!

How well indoctrination with the battling spirit and physical conditioning "take" as practised at the Iowa City Pre-Flight School of the United States Navy is shown in a story brought back from a meeting of athletic directors there by Lou Keller, acting director at Minnesota. Keller got it from Bernie Bierman.

"Do you think I could get about a four days leave between the time I finish here and when I enter flight training?" one young cadet asked.

He had been a spindly youth when he entered, for whom the conditioning course had done wonders.

Lt. Col. Bierman feared not. He got the same answer when he wondered about a three days leave and a two days leave. Finally he came down to one day, but still got no encouragement. But Bierman had become interested.

"Why are you so hepped up about a leave?" he asked.

"Well," said the cadet, "I'd like to go home. You see there are about four fellows in my home town that I'd like to bat for a goal, but if I can't have time for them all, there's one especially that I'd be glad to make the trip to sock."

John E. Anderson Chosen to Head U. S. Psychologists

Dr. John E. Anderson, director of the Institute of Child Welfare at the University of Minnesota, was elected president of the American Psychological Association at the closing session of its recent meetings in New York. Willard C. Olson, secretary of the association, announced his selection by the nominating committee. Dr. Anderson has been at the University of Minnesota for the past 17 years, where his direction of research and of popular education in the field of child care has won wide attention. He is a graduate of the University of Wyoming, with advanced degrees from Harvard. From the end of the World War, in which he served, until he came to Minnesota in 1925, Dr. Anderson taught at Yale. Dr. and Mrs. Anderson live at 51 Barton Ave. S. E.



Dr. John E. Anderson

Loans Replace Earnings Losses

Federal money is being made available in loans for tuition and current expenses to a limited number of men in accelerated courses at the University of Minnesota who are prevented from earning money because they are attending school continuously.

Approval by the United States Office of Education of the university's application was announced by Dr. E. G. Williamson, dean of men. The money is from the \$5,000,000 appropriation made by Congress in line with the recommendations of a committee on which William T. Middlebrook, University comptroller, served.

Applicants must be within 24 months of graduation, must demonstrate financial need, maintain good scholastic standing, and continue in accelerated courses to be eligible for the loans, Dean Williamson said.

Amounts available per person are tuition charges, which vary between colleges, and sums up to \$25 a month for current expense.

Persons receiving loans must pledge to enter military service or devote their talents to some accepted phase of the war effort, service or industrial. Men preparing for commissions by joining the Army or Navy ROTC are eligible.

Fields of study in which men will be helped with loans are Medicine, Dentistry, Pharmacy, Engineering, Physics and Chemistry, and no others.

A repayment plan is being worked out. Notes will be cancelled if a man is drafted before he finishes his course or in the event of serious casualty in service.

Applications should be made to George Risty, in the office of the dean of men, where he is an assistant in charge of loans.

On Illinois Survey Board

Dr. T. R. McConnell, associate dean of the College of Science, Literature and the Arts, University of Minnesota, has been appointed to a committee of six which will make a survey of the University of Illinois following recent charges by a state official that politics was playing too large a part in certain aspects of the university.

The Board of Trustees of the university asked the American Council on Education to name an impartial committee for the survey.

President Raymond A. Kent, University of Louisville, is chairman. Others, besides Dean McConnell, are Pres. Charles E. Friley, Iowa State; President W. E. Wickenden, Case School of Applied Science, Cleveland; Dean E. J. McGrath, University of Buffalo, and Dr. John W. Taylor, director, bureau of educational research, Louisiana State University.

Radio Health Lectures Go On

Radio lectures in October by Dr. William A. O'Brien on behalf of the Minnesota State Medical Society will deal with topics in first aid. He speaks each Saturday at 10:15 a. m. over WCCO and WLB, the university station. Weekly topics will be: October 3, Principles of first aid; October 10, The prostrate patient; Oct. 17, Head injuries; October 24, Spinal injuries; October 31, Wounds of face and mouth.

More Changes in 'U' Staff

University of Minnesota has lost another teacher to the war effort, but at the same time learned that one of the men now away would return October 1. Dr. Francis M. Boddy of the School of Business Administration has gone to Washington to hold for a year a post in a non-ferrous metals section of the Office of Price Administration. His duties will have to do with government management of tin. At the same time it was learned that Dr. Arthur Upgren, associate professor of economics, who has been serving in the bureau of foreign and domestic commerce, will resume his teaching at Minnesota with opening of the fall quarter. During the coming months Dr. Upgren also will devote time to the recently appointed joint commission of the University of Minnesota and the University of Manitoba which is working out various approaches to the post-war economic problems of the prairie provinces and the adjacent states of this country.

Regents Revise Non-Academic Contact Plan

Amended proposals calling for three Employees Committees on Working Relationships to iron out differences between the University of Minnesota administration and its non-academic employees, instead of the single committee proposed at a September 11 meeting were sent today by W. T. Middlebrook, university comptroller, to Norman T. Carle, business representative of Public Building Service Employees Local No. 113.

The new committees would represent respectively employees in the service group, those in the professional and technical group, and those in the clerical group, each as defined in the university classified specifications.

Each committee, said the board, would be of four members, two from the employees of the Main Campus, who would elect them and whom they would represent, one from University Department of Agriculture employees and one a representative of the administration, to be named by the president of the university and to serve as chairman.

The letters also said: "The board further directed me to advise you that on September 10, 1942, the Regents Labor Committee recommended and the Board approved, that there be included in the legislative requests of the university (now being prepared) funds to equalize University non-academic rates with state civil service rates of pay."

On behalf of the Building Service Employees union Mr. Carle had indicated dissatisfaction with the proposal by the Regents on September 11, under which there would have been one committee of five, of whom four would have represented employee groups and the fifth would have been administrative representative, appointed by the president.

Full provision for appeals to the Committee on Classification, the president and regents is made if findings of the new committee are unsatisfactory to employees.

'U' Pharmacists Receive Honors

Dr. Ole Gisvold, head of the department of pharmaceutical chemistry, College of Pharmacy, University of Minnesota, was awarded the Ebert prize and medal of the American Pharmaceutical Association at recent meetings in Denver from which he has returned. It was annual award for the year's best piece of pharmaceutical research, which in this case was the "characterization of an organic medicinal."

Dean Charles H. Rogers of the College of Pharmacy has been elected by mail ballot to head the Minnesota State Pharmaceutical association and will take office at the close of the next annual meeting. Dean Rogers also is one of several who have been placed in nomination for the presidency of the American Pharmaceutical Association, and has recently been elected chairman of the executive committee of the American Association of Colleges of Pharmacy. It is composed of sixty collegiate schools.

Birch oil is found only in the bark and growing tissues of the trees.

Will Reach Goal President Tells 1942 Graduates

Job of Building New World Must Be Done Better Than in Other War

ASKS SERVICES OF ALL

Calls Responsibilities in Growing Struggle Too Clear to Need Elaboration

Bidding farewell to large numbers of graduates who were to be inducted into some branch of the armed services soon after they received their diplomas, President Coffey, at commencement exercises June 13 in Memorial Stadium, told the students he had every confidence each would do his full share to defend and further the American Way of Life.

As is customary, the exercises were held in the bowl end of the Memorial Stadium.

"I can pledge for the institution," he said, "the continuous and devoted efforts of a loyal staff. Of you, our most recent graduates, I have every reason to expect in the war-torn months immediately ahead and in the longer years thereafter, the kind of service that will justify to the utmost all that the people of this state have made possible to you through their support of the University of Minnesota."

His address follows:

It is twenty-five years since students of the University of Minnesota, with their parents and friends, have participated in a June commencement under circumstances as solemn as those prevailing tonight. The class of 1942 is the first to leave the university since the declaration of war last December. We must turn back the pages of history for a quarter of a century to find a parallel to the conditions we are all facing at this moment. The first June class to graduate after the declaration that precipitated this country into World War I was in 1917. There are some here tonight who recall with vivid memories those University of Minnesota exercises of almost a generation ago. It is not unlikely that some parents watching their children graduate this evening, were themselves graduates of the first war class of 1917. For those of us whose memories extend back into those years, it is hard to realize that most of you who will receive diplomas from me tonight, had not then been born, or were only in the early stages of infancy. Those of us now at middle age or well beyond, have had the unusual and disturbing experience of having spent the best part of our lives in an era between two cataclysmic wars. We fought a war to end war, and following the victory of 1918 entered upon what we believed was to be a period of great human accomplishment. Our hopes were high, our ambitions great, and, alas, our human frailties underestimated. We did not realize it at the time, but our failure caught up with us in the depression years of the thirties. That was the decade when most of you were reaching adulthood. The world as you have known it, dates back to those bitter years. And now, just as you are ready to take your place in the world, another war engulfs us all!

It is with such disquieting thoughts as these coursing through my mind that I face the responsibility of delivering a charge to the graduating senior class.

What Was Said Then

History does not repeat itself, but there are lessons to be learned from history. I, therefore, turn back to what was said on the occasion of the graduation of the class of 1917.

The speaker was Dr. Theodore G. Soares, a graduate of the University of Minnesota in the class of 1891, but at that time head of the Department of Practical Theology in the University of Chicago. There were 844 members of the graduating class to which he spoke, and the exercises were held in the Armory with special ceremonies at Fort Snelling for students in service, and unable to attend the campus commencement. No manuscript remains to indicate the exact words of Dr. Soares. We know his subject was "The Efficiency of Democracy," and from the accounts in the newspapers of the day, a general idea of his thesis can be reconstructed. Dr. Soares presented a restatement of the issues of the war into which we had just two months before made our entrance. He attempted to explain reasons why American soldiers were fighting. And then

Naval ROTC Course May Change Length

Freshman men entering the University of Minnesota this fall who wish to enroll in the Naval ROTC were informed today by Commander Joseph Baer that the NROTC course will be of the same length as the regular course in which the student is enrolled. If the present university schedule of four years is maintained, that will be the ROTC period also, and if it is shortened through any of the various methods of acceleration the naval course will be made to conform.

Excepting for transfer students coming from institutions that do not have a Naval ROTC, admission to the Minnesota program is limited to freshmen.

Registration for the next class, the fourth at Minnesota, will continue until noon, Saturday, September 26, according to Lt. Comm. Joseph A. Flynn, executive officer of the unit.

Applicants will be required to go through three steps, namely, a personal interview, a physical examination and an aptitude test, all conducted by commissioner officers, USN.

he developed the point that there were two basic idea-systems prevalent in the world, the one represented in the tyranny and autocracy of our enemies; the other, in our own democracy and that of our allies. It was not against the German people, the speaker said, that we had taken up arms, but against an oppressive government and what it stood for. We were fighting ideas. The future of the world, he said, depended upon a reshaping of men's minds to the end that militarism, oppression, and tyranny would be overthrown.

If it was appropriate to ask a graduating class of 1917 what this country was then fighting for, it is no less appropriate to ask the question now. Whatever our shortcomings of the intervening years may have been, no matter how we of my generation may have failed to achieve the world we so fondly dreamed of, regardless of the mistakes that mar the pages of history since the last war ended—the fact remains that we are now again fighting for something of fundamental significance—we are fighting for a way of life that all of us believe is best and right. It is hard to put such ideas in simple words. There are times when truths are more easily felt than stated, and this is one of them. But as you think of totalitarianism as it is exemplified by the Mussolinis and the Hitlers, as you think of life as it has come to be lived under the Nazis and the Fascists, and in the Land of the Rising Sun, can you doubt that our own way of life is to be preferred—and fought for? All that I am saying is symbolized in the fact that in this country, in this state, we have great and free educational systems the purpose of which is to encourage the development of individual men and women, and the preservation of the liberty that comes through free discussion, free and untrammelled study, and free and unrestricted research.

A Motto of Our Beliefs

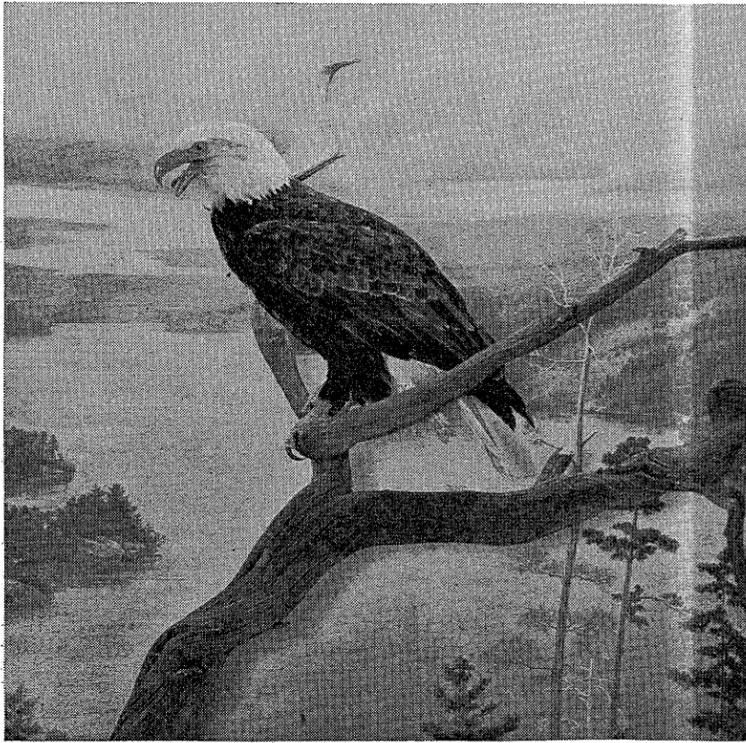
Do you recall the inscription that is cut into the stone facade of our own Northrop Memorial Auditorium? Let me repeat it for you:

The University of Minnesota
Founded in the Faith that
Men are Ennobled by Understanding — Dedicated to the
Advancement of Learning
and the Search for Truth —
Devoted to the Instruction of
Youth and the Welfare of
the State.

Our enemies in this war have chipped from the stone facades of buildings in countries they have conquered the inscriptions that correspond to this one. It is to prevent complete extermination of the lofty sentiments and ideals embodied in such statements of faith as that adorning Northrop Memorial Auditorium that we are fighting—yes, and for which a growing number of our students and one member of our staff have already given their lives! All honor to our own brave sons, and to our loyal colleague, who have died in order that such institutions as the University of Minnesota may survive. Let us, the living, who are the beneficiaries of these noble and heroic sacrifices, pause for a moment, silently, in heartfelt and reverent tribute to their memories.

It is as true today as it was twenty-five years ago when Dr. Soares addressed the graduating class, that the world is torn by a fierce and mortal struggle to determine which of two ideologies is to dominate. Now, as then, a choice confronts us—confronts us

Museum Eagle Strikes War Note



Striking the note of patriotism with a sure touch, the Minnesota Museum of Natural history on the university campus has completed its newest bird group, representing the grand old national bird, the bald eagle. A small but picturesque assembly, the big eagle stands just back from the top of the flight of stairs leading to the second level. He (really she but as adults they have the same plumage) can be seen as soon as one enters the front door, as Sunday visitors will note.

Dr. Walter J. Breckenridge of the museum staff, who has mounted the splendid specimen of bird, said it was seized by a game warden near Fergus Falls after a hunter had shot it. The background, sunset on a vista of Minnesota lake, was painted by Edward V. Brewer of St. Paul. Mrs. George Chase Christian of Minneapolis provided the funds for the group.

The eagle is standing on a beautifully twisted and gnarled branch of dead white-cedar, and below her and a little to the left is a nest.

Dr. Breckenridge points out that not only is it against the Minnesota law to shoot the bald eagle but that recently a federal law has banned the practise throughout the United States.

Library Given Picture of First Woman Graduate

A novel gift to the University of Minnesota, received by Frank K. Walter, librarian, is a photograph of Helen Marr Ely (Mrs. H. M. Williamson), who was the first woman graduate of the university, which she left with the class of 1874. It was sent to Mr. Walter by Mr. Fred Lockley of Portland, Ore., of which city Mrs. Williamson was for long a resident. The photograph, taken in her student days, was made at Winona, Minn., which was, Mr. Walter believes, her home when she was attending Minnesota.

as an institution, and as individuals.

The choice is clear, and our responsibilities with respect to it need not be elaborated. As an institution the University of Minnesota is pledged to do all within its power to further the war effort of this state and this country—yes, and of all our allies. These are not mere words, for the contribution of this institution already has been great. Many members of our teaching staff are now on leave of absence for war service. Wherever American troops are helping to hold the line or pushing it ahead, there you will probably find a University of Minnesota man: in the Orient, in the Arctic, in Ireland, on the home front—each and every one doing his part to bring us the ultimate victory.

Laboratories Are at Work

Our many science laboratories are centers of basic, secret research which is carried on at the behest of the federal government. There are pressing problems to be solved, and we are proud that the War Department, the Navy Department, the Office of Scientific Research and Development turn with such frequency to the trained men on our teaching staff for assistance. It is a great credit to the staff, and a great credit to the state.

Our facilities are being used by the Navy Department for the training of enlisted men—we shall soon have 500 sailors on the campus—and if further calls are made upon us along these lines we shall do our utmost to make our facilities available.

We are participating fully in the Army and Navy enlisted reserve plans which permit students to remain on the campus for basic training, leading ultimately to commissions. And we have our Naval and Army ROTC units.

Perhaps the most important contribution of all comes through our teaching program, whereby

Navy Training Machinists Here

The University of Minnesota approximately doubled its naval training program for enlisted men September 24 when the first company arrived to enter a training school for machinists mates. It will eventually reach a quota of 500. At present a program for electricians' mates is under way as U. S. Naval Training School (Electrical).

The machinist trainees will be housed and trained at University Farm with quarters in Dexter Hall and instruction in the Agricultural Engineering building. A considerable amount of new machinery has been installed and it has been necessary to increase capacity of the power plant at University Farm to carry the increased load.

Lt. Charles W. Williams is in charge of the new unit and Robert E. Summers, assistant professor of mechanical engineering, has charge of the non-naval teaching program.

Lt. Ceilan A. Hendee has recently been assigned to the university as executive officer for both naval training schools, under Commander Jos. Baer, who is the Navy's "captain" on the campus, term applied to the top man on a ship whatever his rank may be.

young men and women are given basic professional training that insures a continuous flow of skilled and necessary man power, and older men and women are retrained so that they may become defense workers. A modern war requires vast numbers of doctors, of dentists, of pharmacists, of aeronautical, chemical, civil and mechanical engineers, of agriculturalists and nutrition experts, and many other professional workers. The federal government and industry are almost totally dependent upon such institutions as the University of Minnesota to prepare and train these men and women. This training is our greatest responsibility in time of peace; in war time its importance becomes even greater. Our enrollments may drop, as they will, and many more of our staff may be called into active service—but the job to be done by those who remain, and the load to be carried by the university as a whole, is greater than ever before and more essential.

To the Graduates

You, members of the graduating class, have your responsibilities, too. They are the counterpart of those that have come to the university which you are leaving. Many of you will enter active service within the next few days. These brief "postponements of in-

Seahawks to Test Gophers In Oct. 3 Game

Although Minnesota's schedule designates the Michigan game as homecoming, Saturday's battle with the Seahawks will have something of the same quality for it will be homecoming for Bernie Bierman, Trainer Lloyd Stein and both Dallas Ward and Phil Bengtson and also for nine other Gophers. Ward and Bengtson are aiding Bierman in the coaching of the Seahawk squad.

Six former Minnesota football players, who no one ever dreamed would play in Memorial stadium again, will don their football togs and take the field Saturday afternoon. But this time, these six football players will not be carrying the maroon and gold colors of Minnesota.

Ray Antil, end 1934; George Svendsen, center 1934; John Kulbitski, tackle 1937; Charlie Schultz, tackle 1937; Gene Flick, center 1941, and Judd Ringer, end 1941, are the six men who are coming to Memorial stadium to play against their alma mater.

Three other former University of Minnesota men, Pat Maloney, Fred Baston and Bill Drake, are on the Seahawk squad. Baston, son of former end coach Bert Baston, and Drake were promising sophomores on the Gopher squad before they enlisted in the naval air corps.

Although Minnesota is starting its second game Saturday, a battle for first team guard and center positions is still raging. Coach George Hauser has made frequent changes in these key spots of the Gopher line but at the present time, John Billman and Chuck Dellago seem to have the call at the guards with Wally Holmstrom and John Perko in reserve.

Bob Solheim and Don Nolander are rated about even at center and the starter against the Seahawks will probably not be known until just before game time.

Dr. George Hauser's new coaching staff of Red Dawson, Bud Wilkinson, John Roning and Jim Kelly is molding this year's team from 24 lettermen and three regulars from the '41 squad, with the newcomers.

duction" which have permitted you to finish this academic year will expire for the most of you on June 15. Others, having completed technical and professional training, will immediately take positions in defense industries and on the farms. The soldier and the civilian worker—in modern war each is important. I can here only repeat what I told you on Cap and Gown Day—that he serves best who does completely and fully whatever he is called upon to do. The officer at the head of his troops, the nurse in the hospital, the technologist in the laboratory, the engineer over his blueprints, the farmhand in the fields, the production manager responsible for the mass delivery of tanks and planes, the clerk in the government office, the private in the rear ranks—each is an indispensable element in the great pattern of total war. And if you always remember this fact, you will have reason to be satisfied with your own participation in our country's war efforts; and the university that now graduates you will, likewise, have reason to be proud of the contribution it makes through you as members of its alumni body.

On this note I would end: I can pledge for the institution the continuous and devoted effort of a loyal staff. Of you, our most recent graduates, I have every reason to expect in the war-torn months immediately ahead and in the longer years thereafter, the kind of service that will justify to the utmost all that the people of this state have made possible to you through their support of the University of Minnesota.

It is faith and expectations of this order that give me confidence that no matter how much it may be said that we older folks have failed since 1917, we will, through you, ultimately achieve those goals that we set for ourselves when we entered the first World War, and which we must all still hold before us as we advance in the war we are now fighting.

May the class of 1942, graduating twenty-five years from tonight, be living in a world of peace—and may the commencement speaker of that year have reason to turn back, if only for a moment, to express gratitude to you of the class of 1942 for the part you will have played in making the peace of the future a reality.

Says Man Must Adjust to Science and World

Continued from page 1, column 4
night bombing of cities too unhealthy to be profitable.

It is for reasons like these that physicists may already have played a decisive role in this war.

It is a far cry from Pearl Harbor to the shores of ancient Greece but there is a direct connection, the story of which I should like to tell you. The story illustrates in broad strokes the way in which physics operates in peace and in war.

History does not reveal who first noted that pieces of amber, jet, and perhaps a few other bodies when rubbed had the power to attract bits of leaves and straw. Thales of Miletus mentions it about 600 B.C. but it was not until 2,000 years later that the term electrification was applied to this process.

Shrouded in mystery is also he who first observed that a certain mineral, later called lodestone, had the property of attracting bits of the same ore or pieces of iron. This was just an interesting observation until someone found out that when these rocks were free to turn they would set themselves in a definite way with respect to the earth's surface. They then became useful lodestones to guide mariners on their proper course.

For centuries—until in fact man shook off the yoke of authority which during the middle ages so effectively blocked intellectual growth and stifled the free search for truth—until man came to believe in the inherent power of his own intelligence to understand nature as revealed to him by experiment and observation—these two phenomena remained just what they had been—unrelated to each other or to anything else—not understood.

Electrical Experiment Begins

In the renaissance years William Gilbert began to experiment with the lodestone and with the electrified amber. He was one of the pioneers in the application of the scientific method of experimentation and observation, and study shows that he got his ideas about it from common men, mariners and miners, who were not inhibited in their thinking by ecclesiastic or scholastic authority.

Gilbert and the men who followed him learned more about the magnetic and electric forces—how they varied with distance—how the magnetic or electric property could be passed from one body to another. To explain why magnets oriented themselves with respect to the earth's surface he was the first to regard the earth as itself a huge magnet.

But all of this didn't seem very important. The forces were tiny—surely never to be of any practical value—although the compass was a useful gadget.

Perhaps Gilbert should have devoted more of his time to his duties as court physician to Queen Elizabeth.

The scene shifts to the rim of a tiny hamlet in rural England. The year was 1732 or thereabouts. Seeking shelter from an approaching thunder storm a dealer in cutlery entered the tap room, deposited his box of steel knives in the far corner of the room, and joined the company gathered about the fireplace. Their gossip was rudely interrupted by a blinding flash of lightning a stray fork of which sprang to the corner of the tap room, snaked its way down, burst the box of cutlery and strewed the knives over the floor.

As luck would have it someone of that company was gifted with curiosity and a sense of scientific values. He noted that the knives were now strongly magnetized and clung one to the other. And what is more important, wrote this observation to the Philosophical Transactions of the Royal Society. Here at last was a relation between electricity (as represented by the lightning flash) and magnetism. Most of you are scientists and can understand the fundamental importance of that discovery. The chief aim of science is to discover new relationships.

But alas, though many, including our own Benjamin Franklin tried, no one for almost 100 years was able to duplicate that chance observation in the laboratory under controlled conditions. In 1805, I think it was, Oersted announced that he was going to do or die. (Perhaps he thought of this as something to put down in a request to the Dean of his graduate school for a modest grant-in-aid to his research program). Oersted, history tells us, though a man of ideas was pretty much all thumbs as an experimenter. At any rate he didn't discover the relationship sought until 1819—almost 15 years later—and then it

was a student who was putting with some apparatus after one of Oersted's demonstration lectures who made the discovery—that if you place a wire carrying an electric current parallel to a compass needle the needle will be deflected to right or left depending on the direction of the current. Now at last with the phenomenon captured in the laboratory, controlled experiments could be carried out to discover the true inwardness of the relationship. These experiments were carried out and a few years later Ampere announced the laws which relate the current of electricity to the magnetic force which surrounds it.

The Faraday Discovery

It is now Christmas morning in 1821. Michael Faraday, perhaps to mollify his good wife for his having spent Christmas eve in his laboratory rather than in their rooms at the Royal Institution, called her gleefully into the laboratory to show her something. There on the table a wire one end of which was dipping in a saucer of quicksilver was spinning merrily around a bar magnet. This was a device which made use of Oersted's discovery—to transform electrical energy into mechanical. It was the forerunner of the electric motor. Faraday was the outstanding experimental genius of the early 19th century. Ten years later on August 29, 1831, the following entry appears in his meticulously kept diary.

After carefully describing the experimental arrangements he writes:

"Item 7. When all was ready, the moment the battery was connected with both ends of wire at A side (referring to diagram) the helix strongly attracted the needle; after a few vibrations it came to a state of rest in its original position; and then on breaking the battery connection the needle was strongly repelled, and after a few oscillations came to rest in the same place as before," and so on to item 8.

This brief entry, so matter of fact, so puttery (if I may use the word) would be likely to evoke in one not familiar with such matters the exclamation "so what." The "what" is echoed in the roar of electric generators in our power houses, at Niagara, at Boulder Dam, everywhere over the world where electric power is generated to turn the wheels of this industrial age. For in those brief cryptic words lies the secret of the transformation of heat energy or of water power into electrical energy.

But Faraday, though an experimental genius, was no mathematician and this last relationship and the one of Ampere needed putting into the canonically simple language of mathematics so that they could be thought about in symbolic form rather than in the form of magnets, coils of wire and the like.

Many competent mathematical physicists tried—but always their equations became horribly complicated and unmanageable when one tried to get them to say what would happen when the electric wires did not form a complete circuit as when the terminals of an alternating current generator were connected to a condenser and the current surged in and out but not through. That might seem a silly thing to worry about for who would want to use a circuit like that anyway? But to the physicist it was a maddening dilemma and to the mathematician an abomination.

It was Clerk Maxwell who solved the problem. In effect he said, "If you will just let me put in this tiny term in these equations for the electric generator and the electric motor not only will it make no difference for the ordinary case of closed currents, but for the case of open circuits, the equations will remain simple and manageable and reproduce the phenomena you observe." "But if I do put it in," he added in effect, "you should look for a new phenomenon for my equations will then say that under certain conditions the circuit will radiate from it electromagnetic waves which will travel outward in space with the speed of light and can be picked up at distances remote from the circuit."

He was bold enough to put in the tiny term. A few years later Heinrich Hertz tried the experiment Maxwell described. Radio was born and the electromagnetic nature of light established. The gigantic radio and associated industries have their origin in the physicists' and mathematicians' desire to free themselves from an abomination and their unwillingness to accept a partial truth.

And on a Sunday morning a few weeks ago a dancing spot of

light said to an observer a squadron of planes is so-and-so many miles away in such-and-such direction. They are approaching at such a speed that if they continue they will be over Pearl Harbor in 35 minutes.

I have here sketched very hastily and in broad outline the steps by which physicists have acquired knowledge about one aspect of the forces of nature and how they have from time to time applied that knowledge to the practical ends of peace and of war.

Free Research Most Effective

A study of the historical development of physics shows that almost without exception the great advances in knowledge have come from men who were neither driven by necessity nor hampered by authority in their search for truth.

The vice president of a great industrial organization remarked recently, "The most difficult hurdle every industry has to get over in the effective introduction of scientific research as a powerful tool in its operation has been to realize that the most profitable research is that which is carried out with the least restraint imposed by current practice." I am proud to say that our army and navy are over that hurdle. But this is war and time is short. The iron hand of urgent necessity is on us to make unlikely that any fundamentally new knowledge will be gained from the present war effort of physicists. Their success will be measured largely in terms of their ability to devise new and clever ways of applying existing knowledge to the urgent necessities of warfare.

Science and Humanity

I wish that I might describe some of things we have already accomplished but obviously the telling will have to await happier times. For a moment now I should like to survey this scene from another point of view. Mindful of the storm of criticism of science as the cause of the suffering in World War I—as the cause of the late depression—and of the potential ascription of the present catastrophe to science and especially to physics—leads me to a feeling of frustration—a feeling which I also found prevalent among British scientists.

I am well aware that science, certainly the physical sciences have nothing to say about spiritual meaning and values—about good and evil. But Emerson in his classic Phi Beta Kappa address made a nice distinction in his definition of the ideal American scholar—a distinction which I should like to invoke to justify the introduction of what I shall next say. According to Emerson the American scholar should justify the designation "man thinking" rather than just "thinker." By the same token the scientist should be not merely a thinker about nature but "man thinking about nature"—man with a sense of good and evil, of beauty and ugliness, of good will, tolerance, fair play.

The other evening a naval officer, himself a physicist, and I were sitting together in my rooms. Although once closely associated we had not seen each other for a number of years and our conversation was perhaps more philosophical than normal, partly because we realized that in less than 24 hours we would be 6,000 miles apart—he in Scotland and I in Los Angeles.

We were listening to a short wave broadcast from Berlin. The speaker by every trick of oratory and persuasion, by specious lies, by distortions of the truth, by appeal to racial prejudices and to religious differences was attempting to create dissension and disunity in America. A moment later we heard an unctuous voice from one of our own broadcast studios extolling to a gullible public by the same tricks, though the distortion of the truth was now kept within legal bounds, the virtues of some snake oil preparation which he said science shows is 52% more something or other than any other concoction.

As thinkers about nature we could appreciate the long and patient search for truth which made this projection of a human voice through space and over the Atlantic possible. But as men thinking about nature we were nauseated by these unworthy desecrations of a beautiful thing.

We spoke of the sense of frustration which I mentioned a moment ago. We believed that it arose from the fact that in this war effort physics is attacking symptoms—not causes. We are engaged in a good fight—against things not only inimical to mankind but to all science—to the freedom of the individual to seek

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the truth and to give expression to it. But in making this fight there is nothing we are doing or hope to do which will make it one whit more certain that we shall not in due course have to fight the battle all over again. We are fighting symptoms, not causes. However much we increase the knowledge of nature's forces, however assiduously we apply that knowledge to the arts of peace or of war, there is no assurance that the added power which comes from knowledge shall not strengthen the unjust as well as the just—shall not be put to evil as well as to good purposes.

I am stating nothing new in this; we've known it for a long time. But in the last year or two our lives have been so dislocated, our life goals so distorted that instinctively we search in our present civilization for elements, for trends which give hope for eventual betterment. The outlook is none too promising. Think what a change would come if our representatives in legislative halls should open each session with the Prayer of Huxley, "God give me strength to face a fact, though it slay me."

Speaking with the naivete of scientists we felt that what is needed first of all is a faith—faith in the power of the mind to understand rationally men's motives and behavior in terms of their heredity and environment. In other words a belief that there is understandable law and order even in this most complex of all biological phenomena. With this faith is needed a method—a plan of action—broad enough to reveal the relations sought—and convincing enough to assure that the discovered relationships will be accepted as sound basis for action. Finally we spoke of the need for ingenuity and courage to translate the knowledge into courses of action which will lead to desirable ends.

Knowledge Translated to Action

Let us be specific. It is frequently said that one hope for the betterment of civilization lies in education. We all agree, but in agreeing we each have in mind an individual conception of the kind of education which is desirable. One horrified glance at what is happening to the youth of Germany today will convince us that not any form of education will lead to desirable ends.

And there are educators among us who protest that education in America today is a racket; that we are exploiting students in the interest of our respective specialties or professions; that we do not, in our mass regulations, take adequate account of individual differences.

I have some ideas about education. One of them is (and it's not original) that more emphasis in education should be placed on the humanities. I am urged to this conclusion by the thought, backed by experience, that many students in acquiring knowledge about themselves and the world in which they live become emotionally disturbed by their inability of themselves to relate this knowledge to questions of right and wrong, to make use of it in matters relating to personal conduct, individual integrity and responsibility. We have divorced religion from education and have placed nothing so warm and human in its stead. I am prone to believe that study of the humanities—reading and discussion with others of what great men have said about goodness, truth, beauty might in some instances, at least, lead the student to an emotionally stabilizing personal philosophy of life which will make of him a better citizen than a great deal of technical knowledge would.

I am free to admit, however, that the reasoning which has led to the above judgment is as specious as that which led savage man to stick a thorn into an effigy of his enemy would then perish. Well—almost—and the same is true of much of the reasoning which leads men to decisions in the fields of politics. In the British journal "NATURE" scientists are writing

in these days much about the kind of world we should plan for the future. They speak of a planned economy as against laissez faire and the profit motive. The obvious fact that these intelligent men come in diametrically opposite conclusions is evidence enough that their reasoning is either unsound, rests on no common body of accepted truth, or both.

As Stace in his recent book, "The Destiny of Western Man" says, "The waving of democratic banners, the beating of drums, the abusing of our opponents, will not help. Nor will any customary platitudes about freedom avail us. We shall have to force our way back to the first principles of human living. Every set of ideals, moral or political, is an outgrowth of some theory—whether explicitly set forth or unconsciously assumed—about the nature of man."

Must Know Ourselves Rationally

Let's get about the business of learning to know ourselves rationally or I should say let's put more steam behind the work which some of you are now engaged in. The way is centuries long. No branch of scientific thought will meet more opposition from authority, prejudice, and intolerance, but there seems no other way to reach with certainty the goal of learning how man can live in peace with himself.

But I have wandered far from my subject, "Physics in Peace and in War." I need return to it only long enough to quote from one who both in his activities and his attitude toward war, typifies the thousands of physicists who in this country and Great Britain are devoting their full time and energies to the war effort. I refer to Leonardo da Vinci, who among many other things invented the tank, the machine gun, the submarine, and but for lack of suitable motive power would have invented the airplane.

Leonardo wrote, "When besieged by ambitious tyrants I find a means of offense and defense in order to preserve the chief gift of nature, which is liberty." And in the same breath he refers to war as, "bestialissima pazzia," the most bestial madness.

'U' Head Sees Changes Sure

Continued from page 1, column 2
supporting activities. The War Manpower Commission should also make plans for the instruction of those for whom further training is necessary to enable them according to their qualifications to make their most needed contributions to the support of the armed forces.

Any plan for student war training must take into consideration the possibility that the Selective Service Act may be amended so as to lower the age of liability for service to 18 years.

All colleges, universities, professional and technical schools assuming direct responsibility for the training of students for war purposes must be prepared to readjust their instructional programs and procedures so as to enable them promptly and efficiently to meet the new and varying needs of the war ends.

Throughout the preparation for wartime services, provision should be made for securing the complete physical fitness of students.

In order to avoid misunderstanding, students should recognize that the exigencies of the war do not make it possible to assure any student that he will be permitted to remain in the institution for any specified period of time.

The Division of Professional and Technical Personnel of the War Power Commission, it was pointed out is working out detailed plans and procedures for utilizing the facilities of colleges and universities in the present war.

Copper Salvaged from Stills
North Carolina's Wilson County has donated an accumulation of confiscated moonshine stills to a copper salvage drive.

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NO. 2

Will Celebrate 50 Year Series With Michigan

Homecoming Game to Mark
Noteworthy Anniversary
in 'U' Athletics

STARTED IN 1892

Men Who Played on Either
Team in First Game to Be
Honored by Alumni

University of Minnesota Homecoming, Friday and Saturday, October 23 and 24, will be distinguished in that it will mark the fiftieth anniversary of the first Minnesota-Michigan football game. E. B. Pierce, secretary of the Minnesota General Alumni Association and chairman of the committee on intercollegiate athletics, has invited all living men who took part in that game to attend the alumni Homecoming dinner in Coffman Memorial Union, Friday, October 23, at 6 p. m., and that all who attend will be given a Minnesota "M" blanket. This will be done for Michigan men as well as those from Minnesota.

The first game in the series that has been so famous since the 6 to 6 tie of 1903 which gave rise to the Little Brown Jug tradition was on October 17, 1892, when Minnesota played at Ann Arbor and won by 14 to 6. The series does not amount to 50 games as there have been two long periods when the teams did not meet.

Four who played on that team are known to be alive and in the vicinity of the university, namely Judge William C. Leary and Alfred Pillsbury, both of Minneapolis; Harry White of St. Paul, and Constant Larson of Alexandria. The Michigan Alumni Association has been asked to pass the invitation along to living members of its 1892 football team.

The Hon. R. J. Quinlivan of St. Cloud, member of the Board of Regents, will be toastmaster.

Michigan alumni of the twin city area have been asked to join with Minnesota grads at the Homecoming dinner, and there will be a special section reserved for them. University of Michigan officials are being invited.

A special notice has been sent to all Minnesota players who ever took part in a game against Michigan, and it is hoped that as many as possible of them will be present. Ben W. Palmer, Minneapolis attorney, president of the General Alumni Association, will be in general charge of the meeting with Mr. Pierce.

War casualties of the Homecoming festivities will be the traditional parade and the bonfire, but fraternity and sorority houses will be decorated. In this a Latin-American theme will be followed, the student committee having designated the day as "South American" Homecoming, out of respect to our good neighbors to the south.

A chorus of one hundred eighty service men will appear in the Homecoming dramatic production, "Time of Your Life," which will be staged in Northrop Auditorium Friday night. It is to be in part a parody on the magazine, "Time."

Profits from Homecoming activities will all go to the Edward E. Nicholson Scholarship Fund, created to honor Dean Nicholson, who retired at June, 1941, from the post of dean of student affairs.

A. F. Branton, Jr., of Willmar is student general chairman for Homecoming and Steve Donohue, publicity chairman.

Special military ceremonies honoring the United States Army and University of Minnesota men in the Army will be conducted between halves of the Michigan game. Ceremonies for the Marine Corps and the Navy have been carried out at earlier home games this year.

As was true when the Seahawks came to play Minnesota under a former Minnesota coach, Michigan will appear with former Gophers at the helm. Fritz Crisler, although a Chicago graduate, was formerly athletic director and coach here. Clarence Munn, Michigan line coach, and Earl Marti-

Music Building on Attractive Spot on Campus



As the foliage thins in the fall clearer outlines of many of the university buildings are seen. Here is a more clear view of the Music Building than can be obtained in summertime.

Cheyney's Book on Silviculture Points Way to Forest Interest

Helps Average Reader Get
Inside the American Forest
and See Everything

Time was when the harvesting of forest products (oh, shucks, let's say lumbering) was the principal industry in Minnesota. Forest products still play a reasonably important part in the state's economy, and unless that varying entity, the government, loses its common sense, forestry will again be, not of primary, but of great importance to the North Star State.

Forestry, meaning the thing itself, not the college subject, has never been thoroughly sold to the Minnesota public. Its period of dominance preceded the age of intensive publicity, and no doubt there were some aspects of the day of exploitation, chiefly wasteful and unscientific cutting, about which the less said the better. In recent years Conservation Department publicists and the press in general have awakened to the strong story value and general importance of the state's forest areas, but public knowledge of the forest situation and the regulation and attention forests must have to take their true place as producers of local contentment and statewide wealth still lags.

To an astounding number of persons, for example, all types of "evergreens" are still pines, just pines. The spruces, the firs, the cedars and even the larch, which we call tamarack, and which, although a conifer, sheds its needles each fall, are all "pines" to both the general and the generality. Forests are likely to be thought of in terms of local tax returns (or their lack), which is pertinent but has little to do with forest protection or reproduction. Probably the whole forest problem would advance toward a solution more readily if a real statewide consciousness of the forests and an interest in trees and forest extension could be developed. Some day, no doubt, it will be, although quite obviously that day will have to come after the time when the war obliterates so many other fields of interest from reader consciousness.

But a good start toward the development of this interest could be made if a few thousand intelligent Minnesotans would read Professor E. G. Cheyney's new book "American Silvics and Silviculture." In it they would find prairie, backfield coach, are two of Minnesota's greatest All-American players. Martineau, honored in 1923, was the fourth Gopher to be named on the late Walter Camp's All-American. "Biggy" Munn was twice an All-American.

tically nothing about taxation, state land policies, federal ownership versus state ownership and all of the necessary operational mumbo-jumbo of political control. What they would find is a clearly and interestingly written volume telling them what makes forests grow, what types of forests there are in the United States, what several methods of forest management may be used under differing conditions and for differing objectives and, at the end, a clear description, one by one, of the principal trees that grow in the United States of America.

Even people who think they know a little about trees and forests realize, page by page, as they read Professor Cheyney's book, that their knowledge is about equal to the residue left in a pan of water in boiling an egg; darn hard to find.

"American Silvics and Silviculture" is one of the fall publications of the University of Minnesota Press, and it takes its place in the splendid though widely varying list of books dealing with the out-of-doors which that office has published, books on the birds of Minnesota, mushrooms, canoe country on the Canadian border, wild flowers, and the like. There is some sound argument for believing that it is in this occasional and diverse series that The Press has made its most notable contribution.

Professor Cheyney did not set out, it would seem, to write a "popular" book, and in fact it is frankly referred to as a textbook, but it is "popular" in that it is interesting, applicable, clear and readily understandable, and it deserves popularity. It would be fine if one member of every family in Minnesota were to read it.

There is no getting away from the fact that trees touch the human heart. Men who have no interest in either flora or fauna apart from the creeping bent on the golf greens will rush home to paint a ring of goo around an elm in the back yard to keep worms from crawling up it. They will curse the roots that get into their sewer pipes but they will still pay the plumber's bill rather than have the tree cut down, and if it is in the parking outside the sidewalk the city wouldn't let them touch it if they wished to. They will admire the delicacy of spring's opening leaf buds, the flame of autumn color, emphasized by the vividly contrasting green of a "pine," and will shiver at the sight of the bare desolation of mid-winter branches. It is because trees have this primordial hold upon the general imagination and the capacity for exacting an emotional

Dads Day at 'U' Will Be on Nov. 7

Interest of Dads in the University of Minnesota is considered so important by the administration that the annual ceremonies of Dads Day will be continued as usual, and the fathers of all students are being invited to come to the campus on Saturday, Nov. 7, the day of the Minnesota-Indiana football game. Those who attend the game will have a chance to see one of the nation's most famous players opposing Minnesota, Billy Hillenbrand, the fast back whose abilities have brought Indiana a new football fame.

The Minnesota Dads Association, the statewide body so ably fostered by Edward F. Flynn of St. Paul, its long-time president, will also meet on the campus on Dads Day. Meeting of the association will be called just before the big, annual Dads Day dinner in Coffman Memorial Union. Dinner will be served at 6 p. m.

Despite increasing difficulties of travel, E. G. Williamson, dean of students and chairman of the Dads Day committee, believes that there will be a large turnout of fathers.

"There is no group whose interest in the university is more important than is that of the fathers whose sons and daughters are on the campus," he said.

President Walter C. Coffey is having a personal invitation mailed to the father of every student.

Following the custom of recent years, fathers of Minnesota football players will be honored in Memorial Stadium between halves. Dads at the game are to be seated in a special section near the Minnesota players bench. Ticket applications will be included in the envelopes that carry the invitation and other Dads Day literature.

The president of the All-University Student Council will welcome the fathers at the dinner. One of the dads will be invited to respond. Mr. Flynn will speak on behalf of the Minnesota Dads Association.

response that one is led to believe that a proper campaign for exciting a living interest in trees, forests and forestry could be successful. In fact, nationally, it has been successful in some degree, through the work of agencies stimulated as long ago as the days of T. R. and Gifford Pinchot. But from that still slender groundwork Minnesota should go on to build its own definite and intelligent interest in its "woods."

Such a book as E. G. Cheyney's will help a great deal.

Galapagos Enchanted Isles
The Galapagos Islands, off the Ecuador coast, were once known as the Encantadas, the Enchanted Isles.

President Expounds 'U' War Policy

Preparation for Service the
Outstanding Purpose of
Attendance Now

NEW TEMPO FIXED

Times of Leisurely Study
and Long Vacations
Seen as Past

"The War's Challenge to Service" was the title of President Walter C. Coffey's address to the University of Minnesota community, both faculty and students, but especially to entering students, at the opening convocation on Thursday, October 1.

In the course of his talk he made it clear that college instruction must be oriented more and more toward training for some form of participation in the war, declaring that while it is wise for students to remain in college while they are undergoing training that fits them to meet problems of the immediate future, the leisurely four-year educational period of former years, with long vacations, is a thing of the past, at least until the war is over.

He declared vigorously that only those whose training is fitting them to participate more skillfully in the war should continue their studies.

President Coffey's address was as follows:

I do not know Robert C. Jensen. I assume that he is a recent graduate of a Minneapolis high school. Furthermore, I judge that he is a boy who has his eyes open, and who is aware of what is happening in the world today. I say this because I was much interested in a letter that appeared in the "Open Forum" column in the "Minneapolis Sunday Tribune and Star Journal" a week ago, signed "Robert C. Jensen." I can think of no better way to introduce what I wish to say to the student body this morning than by quoting some of the paragraphs from that letter:

"Since graduation last June conditions for all incoming college freshmen have changed. When many of us graduated our country was entering its sixth month of war. Hardships were few and far between. The only difference we noticed was the irregularity with which we got the family car. But the summer has brought many changes.

"We are now subject to call from the government; that is, we will be towards the first of the year. We have found that we will have to do without more than tires.

"The question in many of our minds is, 'What is the course for youths now entering college?'

"More than likely we will find shorter, more telescoped courses which will fit us for service in the armed forces either as officers or technicians. Those not physically fit for service will find our courses molded to fit us for service on the production front. . . .

"The college student today is going to find that the raccoon coat and all that went with it is discarded."

The raccoon coat has never typified the great state universities such as the University of Minnesota, but overlooking that fact, the general ideas set forth by this high school graduate of last June are relevant and correct. The incoming freshman and the returning upperclassman will find vast changes taking place on this campus. And many more changes are imminent.

New Campus Activities
I wish to devote the first part of my talk to you to a review of some of these changes. For those of you who are here for the first time, as freshmen, transfer students, or graduate students, such a review will provide a background. For those of you who are returning to the campus, it will serve to bring you up to date.

The bluntness with which I shall make the first statement may surprise you: there is now a battleship on the campus! The U.S.S.

Continued on page 4, column 1

Dr. R. A. Gortner, Biochemist, Dies

Death of Ross Aiken Gortner, professor and chief of the division of biochemistry, University of Minnesota, on September 30 at the age of 57, removed from the university faculty one of its most distinguished members.

Dr. Gortner's ability and reputation brought to the University of Minnesota scores of graduate students from all parts of the world and added greatly to the luster of the Graduate School.

The following obituary statement about Dr. Gortner was prepared by the Division of Publications at University Farm.

Dr. R. A. Gortner was born at O'Neill, Nebraska, March 20, 1885. After graduation from Nebraska Wesleyan University in 1907 he earned his M.S. degree from the University of Toronto in 1908 and his Ph.D. degree from Columbia University in 1909. An honorary Sc.D. was conferred on him in 1932 by Lawrence College.

Dr. Gortner came to the University of Minnesota in 1914 as associate professor in the Division of Soils from the Station for Experimental Evolution at Cold Springs Harbor, N. Y. It was during the period at the Carnegie station that Dr. Gortner formed his close personal and scientific association with the late Dr. J. Arthur Harris, who probably exerted more influence on Dr. Gortner's scientific thinking than any other person. This association culminated in Dr. Gortner being largely instrumental in bringing Dr. Harris to the University of Minnesota as head of the Department of Botany.

Dr. Gortner transferred to the Division of Biochemistry of the University of Minnesota in 1916 as Associate Professor and was made full professor and chief of that division in 1917, which position he held at his death.

His Field of Work

Dr. Gortner's scientific interests were very broad. His contributions to scientific journals number more than 300. The chief fields covered in these papers are the black animal pigments, the melanins; proteins, especially the cereal proteins and their relation to the properties of flour and dough; colloids, especially their physico-chemical properties and the role of water in living processes. So varied were Dr. Gortner's interests that his influence was felt in the research of almost every field of agricultural science and in the research work of the entire Department of Agriculture of the University. This influence extended outside of those circles into other colleges of the University and throughout the nation. For many years he carried on an extensive correspondence with research workers in his special fields throughout the nation and also in foreign countries.

One of Dr. Gortner's major contributions to scientific thought was his book "Outlines of Biochemistry," the second edition of which appeared in 1938. Another volume, "Selected Topics in Colloid Chemistry," contained the lectures which he gave at Cornell University in 1935-36 in connection with the George Fisher Baker lecture-ship which he held, and a third volume prepared by Dr. Gortner and colleagues in 1936 entitled "J. Arthur Harris, Botanist and Biometrician," was in honor of his close friend.

Dr. Gortner felt that his chief contribution to science was through his students. In recent years he delivered to many audiences his lecture on "Scientific Genealogy." His intense enthusiasm for science and especially for the field of biochemistry, his exceptional fund of scientific knowledge in many fields, and his easy, familiar delivery made him an inspiring teacher. An increasing number of students were attracted to his classes and to his department for graduate work. He gave freely and liberally of his time and thought to the research problems of his own graduate students as well as to those of his colleagues both in the Division of Biochemistry and in other divisions of the University, and in the early days of the development of graduate work in the Division of Biochemistry spent many hours in the laboratory working with his students. During the 25 years of his service as chief of the division, 87 students were personally directed by Dr. Gortner in their graduate research and during the academic years 1940-42 between 60 and 70 graduate students were in residence in the division. Dr. Gortner was active in many graduate student activities outside scholastic work. For five years he

Blakey Writes New Volume on Taxes

"State Income Taxes" is the title of a new volume by Dr. Roy G. Blakey, professor of economics, School of Business Administration, and Miss Violet Johnson, formerly with the Minnesota Tax Commission, which has just been published by Commerce Clearing House, Inc.

It is a new study and careful analysis of growth and trends of state taxation on income, reflecting the most pertinent developments of the past thirty years. The volume is addressed to all who are concerned in any way with state income taxation, such as lawyers, accountants, officials, legislators and, in general, those who must understand taxation.

Complete and informative, the text is divided into well-rounded discussions of definition of income, rates and exemptions, special tax problems, administration, yields and trends of taxation, and the like.

Dr. Blakey is widely known for his scholarship in the field of taxation. The work on "The Income Tax," published three years ago by himself and his wife, Gladys Blakey, is one of the best known works in that field.

Lombard Heads Assembly Managers

James S. Lombard, field adviser to the General Extension Division, University of Minnesota, has been elected for the third successive year president of the National School Assembly Managers association, an organization which advises high schools on programs for assembly hours, and books programs for them. During the past year the association helped arrange 25,887 programs in 6,569 schools, and estimates that they were heard by more than 9,000,000 pupils.

21 Athletes Join Marines

Twenty-one members of the Minnesota football squad who have entered the enlisted reserve corps of the United States Marines took part in a ceremony just before the Pittsburgh game September 26. Escorted onto the field by a Marine color guard and the Varsity band, they lined up on the 25 yard line while Julius Perl, football announcer, read off their names. Those who have joined up with the Marines and Cliff Anderson, Bill Baumgartner, Herb Hein, Ed Trumper and Gene Bierhaus, ends; Rudy Sikich, tackle; Wally Holmstrom, John Perko, John Bicanich, Charles Dellago and Bob Graiziger, guards; Jerry Laue and Bob Solheim, centers; Jerry Carle, quarterback; Herman Grickey, Bud Higgins, Ossie Trooien, Wayne Williams, Dick Kelley and Bob Barnes, halfbacks; and Fullback Vic Kulbitski. Major W. L. Harding, Minneapolis recruiting officer, conducted the ceremony for the U. S. Marine Corps.

On Recruiting Committee

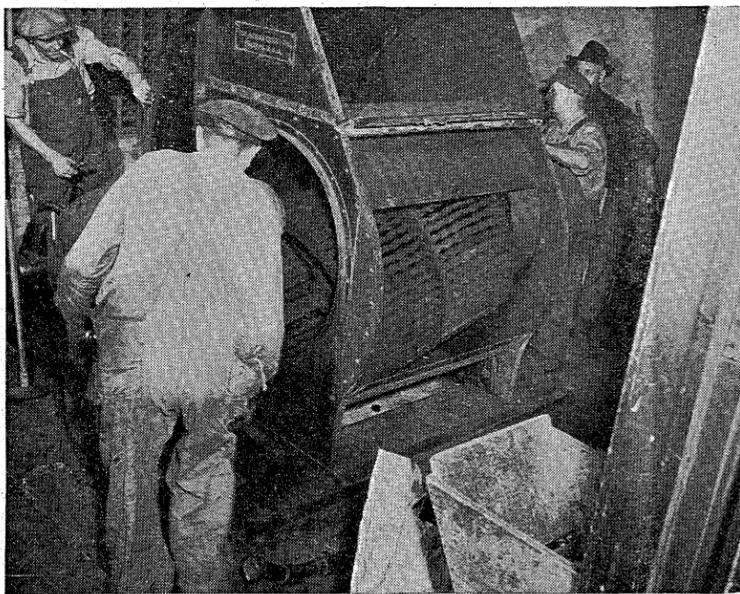
Dr. Ruth E. Boynton, director of Students Health Service, University of Minnesota, has been named to the sub-committee on Women Physicians of the Committee on Procurement and Assignment Service for physicians, dentists and veterinarians. Appointment was received from Paul V. McNutt.

was national president of Phi Lambda Upsilon, honorary chemical fraternity, and for a number of years was "god-father" of the honorary graduate scientific society Gamma Alpha at the University of Minnesota.

Won Many Honors

Dr. Gortner was honored by his colleagues with appointment to many positions of responsibility in scientific research and education. In the National Research Council he was serving at his death on committees on the chemistry of colloids, chemistry of proteins, organic chemical nomenclature for the American Society of Biological Chemists and the American Chemical Society. For three years Dr. Gortner served on the executive committee of Sigma Xi, national honorary scientific society, and on December 31, 1941, he was elevated to the position of president of the society. Last May he was awarded the Osborne Medal by the American Association of Cereal Chemists, given by this society to scientists who have rendered distinguished service in conducting research and training students in the field of cereal chemistry.

Old Ventilator Going for Scrap



Faculty members finished on Sunday, the dismantling of this old ventilating system in University High school which workmen had started the day before. It added many pounds to the scrap collection.

Pirsig Named To High Court

Maynard E. Pirsig, professor in the University of Minnesota Law School, has been appointed an associate justice of the Minnesota Supreme Court by Gov. Harold E. Stassen. He will serve out one of two unexpired terms that will run to January 3, 1943, when they will be filled as a result of the coming November elections.

A graduate of the University of Minnesota Law School, Judge Pirsig, who is 40 years old, has been professor of law at Minnesota since 1933. Since 1937 he has been secretary of the Minnesota judicial council which is a state agency engaged in studying the state's judicial system.

He also is a director from Minnesota of the American Judicature society, a national organization whose purpose it is to further judicial reform where needed.

Pirsig resides at 85 Clarence Ave. S. E., with his wife and two children.

Hahn Receives Marine Rank; Soon to Leave

Milton E. Hahn, director of men's activities in the office of the dean of students, University of Minnesota, has been commissioned a first lieutenant in the air intelligence, United States Marine Corps and will leave for service between Nov. 15 and Dec. 15. Lt. Hahn has been in his present post as aide to Dean Edmond G. Williamson since July 1941. Prior to that he was for three years on the staff of the General College and had been in industrial personnel work in St. Paul and also director of personnel work in the St. Paul public schools. He and his family reside at 51 Clarence street.

Another staff member who recently went into service is Gerald R. Prescott, University of Minnesota bandmaster, known to thousands through his direction of the band at football games and campus ceremonies. He has been commissioned a captain in the Army Specialist Corps and reported Oct. 18 to Fort Mead, Maryland. Prescott, who also holds a faculty position in the Department of Music, has been granted leave for service.



Dr. Milton E. Hahn

Students at 'U' Given Advice As to Program

University of Minnesota students, upon entering this fall, were each given a pamphlet signed by President Walter C. Coffey which outlined for them answers to many questions which young men in wartime would inevitably ask as they started another college year.

Many parents will be interested in the advice given in the pamphlet, the greater part of which is reproduced herewith:

To Minnesota's Wartime Students

The University has an obligation to keep you constantly informed concerning developments relating to the war that inevitably affect you as students. This pamphlet discusses some of these developments. You owe it to yourself to read what follows with the utmost care.

The chairman of the federal Man Power Commission recently said that the time is close at hand when only those students will be in college who are directly preparing themselves for war work. The Man Power Commission has formally approved this statement: "All students, men and women, must be preparing themselves for active and competent participation in the war effort and supporting civilian activities."

The Secretary of War has announced that men in the Enlisted Reserve Corps will be called to active status upon reaching Selective Service age; for some this active status may involve special training on college campuses, as determined by the War Department.

There is a general belief that the Selective Service age will soon be dropped from twenty to eighteen years. This will certainly mean revision and reconsideration of Selective Service policies as they relate to deferment.

These are but a few straws in the wind that indicate that the time is not far distant when every college student must justify his presence on a campus.

One point is important, however, and on it there is general agreement: The need for the training that colleges can give is more pressing than ever before, and grows more pressing every day. Every branch of the armed forces, industry, and governmental agencies calls for men and women with special abilities and special training. If ever a speech made this point clear, the recent speech by General Somervell did. Said the General: "Our army today is an army of specialists. Out of every 100 men inducted into service, 63 are assigned to duties requiring specialized training." So it is in the Navy, also.

The problem that faces you, then, is not "Should I go to the University?" That has been answered affirmatively on every hand. Your question is, rather: "Now that I am in the University, what courses should I take that will be of greatest advantage to me and of maximum service to the country in the present war emergency?" This question is one for the women as well as the men. In this war, service is not limited to men alone—as England is amply demonstrating, and as the quotation from the Man Power Commission above implies.

Since everyone sooner or later will be called upon for war service, your problem reduces itself to "How can I best serve?"

Serving best requires adequate training. It means laying a sound foundation upon which later service will rest. Your period in the University—whether for one quarter, two or three quarters, perhaps a year or more—is your opportunity to lay a sound foundation.

Studies Especially Suggested

It is for these reasons that the University is calling to your special attention certain subjects or lines of study that it believes constitute a desirable pre-induction, pre-service training. These courses will be of value whether you enter the Army, the Navy, have an industrial job in a defense plant, or serve in civilian capacity with a governmental agency. These courses are lines along which advancement can be made in all spheres of service.

It is recognized that not all students can or should follow the same courses. In wartime as in peacetime, special abilities, interests, and aptitudes must be considered in making the choice of courses one is to carry. Yet, recognizing this, it is clear that certain subjects do have a special claim to consideration because of the foundation that they will provide.

Continued on page 4, column 5

'U' Airport Now CPT Base

The University of Minnesota airport, just beyond the New Brighton federal munitions plant, has been approved by the Civil Aeronautics Authority as the scene for flight training of enlisted personnel in the Civilian Pilot Training Program of that body. The field was established about a year ago and has since been extensively developed. Expansion of army and navy flight training at fields where CPT students have been training made the shift necessary.

More than 350 CPT fliers, all students signed up in army and navy reserves while attending the university and other colleges, will be trained there annually, W. M. Beadie, acting director of Minnesota aeronautics commission, said.

The field and a small one nearby are the only places in the Twin Cities where civilian aviation is now allowed.

Approval was given October 11 by A. C. Godward, chief inspector for civil aeronautics authority.

Thirty planes are based at the new center now by three large schools. Facilities are available for training of 60 student pilots every eight weeks.

Ground training is given at University of Minnesota, Hamline university and Macalester college. Flight training is given by the flying services.

Army and navy activity at all other flying fields in the Minneapolis-St. Paul area has forced private aviation from them, Beadie said.

Approval of the new center was necessary to retain CPT training in this area.

The Minnesota aeronautics commission is paying for university airport shops and rental of the auxiliary field, to be used primarily for instruction in landings and takeoffs.

Navy Must Eat; Cooks and Bakers Will Study Here

The University of Minnesota is one of a dozen middle western universities, including Iowa, Northwestern and Notre Dame which have been finally designated to train cooks and bakers for the Navy, Commander Joseph Baer has informed Dean Malcolm M. Willey, assistant to the president. Small initial quotas are expected to arrive in October and November, according to orders from Rear Admiral Randall Jacobs, chief of naval personnel. Details of the program, including length of the course, are being worked out. Minnesota will be rated a Class A school. Minnesota's quota will be sent from the Naval Training School at Great Lakes, Ill.

Will Lecture on Near East

Dr. Alif Tannous, native of Syria, will offer an evening course in "Social and cultural life of the Near East," Dr. R. R. Price, extension director, announced. A study of the Arabic language can be combined with the lectures by those who wish it, Dr. Price said. The course aims to meet the growing interest in the Arabian and Syrian world that has come with the sending of troops to Iran and Iraq.

Minnesotans Helped OWI Study Opinion

Two University of Minnesota journalism professors, Dr. Ralph O. Nafziger and Dr. Ralph D. Casey, have returned to their teaching duties after periods of service with the Office of War Information in Washington.

Dr. Nafziger, who was on a Sabbatical leave of absence last year, has been in almost continuous service with government public relations and public opinion analysis sections since early last autumn. Dr. Casey's stay was of only five weeks duration since he left for the national capital after teaching in summer session.

Shortly after he arrived in the capital, Dr. Nafziger was invited to make special communications studies for the so-called Donovan committee. After completing several studies of short-wave radio broadcasts, he became associated with Harold D. Lasswell, head of the war communications studies in the Library of Congress, and was assigned to projects having to do with the attitudes and policies of foreign newspapers on the war.

His outstanding governmental service, however, was as director of the media division of the Office of Facts and Figures and later the OWI. When the nation entered the war, Dr. Nafziger was given the task of organizing this division and the latter built it from a few trained media specialists to a staff of sixty.

The media division's responsibility was primarily one of analysis. In this war, both the OWI and OWI have departed from the technique of the Creel Committee of World War I, which was primarily concerned with the release of information. In this war, information heads decided that before putting out information unconditionally, it was necessary first to ascertain what was actually coming to the attention of the public through newspapers, periodicals, radio broadcasts, news reels and pictorial art. It was necessary also to ascertain the trends of editorial and radio opinion on war problems.

Dr. Nafziger and his highly-trained staff analyzed from week to week, newspapers, periodicals, radio commentary, news reel subject matter, cartoons and pictorial art. These analyses, summarized in weekly, special and individual media reports, went to the White House, state department, war and navy departments, department of justice, and other war agencies and government leaders. The media division ascertained the favorable or unfavorable editorial attitudes, the emphasis given war topics, the gaps in the war picture resulting from incomplete news coverage so that misinterpretations could be corrected, the overlapping of news releases, and the appearance of Axis propaganda in the communications media.

Under his direction, Mrs. Persis Harper Richter, a staff member and former Minnesota journalism student, analyzed the editorials written by William Dudley Pelley, Silver Shirt leader, in "The Galilean," and it was in part on the basis of her testimony at the Indianapolis sedition trial that Pelley was convicted.

In Dr. Nafziger's opinion the American public is getting as complete and accurate a picture of the war as can be expected within the limitations necessarily set up by military censorship. For Elmer Davis, director of OWI, Dr. Nafziger has the highest respect. He believes that Davis' appointment did a great deal to insure that the American public will get a true picture of war news.

"Davis isn't trying to kid anybody," Nafziger says.

The Minnesota professor upon his arrival in Minneapolis also praised correspondents, newspaper editors, the radio commentators and the periodical press for their public service in wartime.

Dr. Casey's assignment in Washington was to study the various press intelligence services and to make recommendations that would lead to greater unification and the prevention of overlapping and duplication. This required a review of the former press intelligence division of the old Office of Government Reports as well as an examination of the qualifications of personnel and the section's activities and techniques. The study included the utilization of press intelligence services by information specialists throughout the governmental departments and agencies. The old OGR unit is now within the OWI and Casey's final

Warmth Sure At Coal-Heated University

There are some advantages to being old-fashioned and in one respect these are now being reaped by the University of Minnesota, which is run on coal heat and power and has no worries over fuel-oil rationing.

The University burns about 45,000 tons of coal a year, most of it screenings which are pulverized and blown in, though some with underfed stokers.

During the course of the winter about 33,000 tons will be burned on the Main Campus, nearly all of which is now on hand, while 12,000 tons are burned at University Farm. At the latter place six carloads a week are now being unloaded, which is enough to keep the boilers going at their present pace, while a huge stockpile there is that much fuel ahead for colder days to come.

In the coldest weather university heating plants, including a plant at the Farm which generates electricity, consume something like 200 tons of coal a day, of which 125 to 130 are burned on the main campus. Even in summer, according to Dr. William F. Holman, chief supervising engineer, the university uses about 30 tons of coal on one campus and 12 at the other. Heat and hot water are necessary for laundries, the hospital, dish washing, cooking, and the like.

The University contracted for its coal early last spring before talks of various types of fuel shortages made themselves heard. For the present season at least, says Dr. Holman, it has nothing to fret over on the score of fuel.

Firms Donate Navy ROTC Prizes

To add incentive for excellent work in the University of Minnesota Naval ROTC nine twin city concerns have donated prizes that will be given at the end of the year to students who have made outstanding records.

Gifts announced by the executive officer, Lt. Comm. Joseph A. Flynn, are as follows: Complete ensign's outfit, General Mills, Inc.; for outstanding member, graduating class; wrist watch, Northern Pump Co., for outstanding sophomore in ordnance and gunnery; wrist watch, Charles A. Ward, outstanding student in navigation; plaque, F. H. Peavey Co., outstanding freshman; radio, Globe Oil & Refining Co., outstanding junior in communication; luggage, St. Paul Dispatch, outstanding senior in aptitude for the service; wrist watch, Minneapolis Star-Journal, outstanding sophomore in intramural athletics; sword and belt, North Star Woolen Mills, outstanding senior in drill; \$100 war bond, Lewis Bolt & Nut Co., outstanding senior in leadership.

Six medals from the Chicago Tribune will also be awarded, such as are given to each ROTC unit in the country.

Regent Directs Governing Boards In Meeting Here

The University of Minnesota will be host October 29, 30 and 31, to the Association of Governing Boards of State Universities, of which the Hon. A. J. Olson of Renville, veteran member of the Board of Regents, is president this year. Wartime problems of state universities will command the greater part of the governing officials' attention. Meetings will be in the Center for Continuation Study.

Sociologists Honor M. M. Willey

Malcolm M. Willey, assistant to the president and dean of administration, has been elected to the executive committee of the American Sociological Society for 1943. The committee lays out the organization's program of work and procedures. Dean Willey also was a speaker on the University of Chicago Round Table discussion Sunday, October 18, on "The Newspaper." This week he is representing President Walter C. Coffey at meetings in Chicago of the American Association of State Universities.

task was to suggest how the older service could be best integrated with newer press analysis divisions.

President Speaks to Navy Crowd



Special exercises between halves when Minnesota played the Seahawks October 3, were dedicated to the Navy. Shown standing by as President Coffey speaks is Capt. D. J. Hanrahan, USN, commanding officer of the Iowa Pre-Flight base, who also spoke to the crowd.

Many on Leave To Serve U. S.

The University of Minnesota had 378 staff members on leave of absence for service in the armed forces or for other war-related work up to September 28 according to a survey just completed by Dr. Tracy F. Tyler. It covers leaves granted by the Board of Regents beginning with July 1940 and ending with September 26. These staff members represented all ranks from instructor up to and including dean on the academic staff, and from laborer to skilled technician on the non-academic staff. More are going each week.

Of the leaves granted, 316 were for service with the armed forces, 50 were for war related service for departments of the federal government, and three were for work for the American Red Cross.

Analysis of the staff members by rank showed that 183 were members of the regular academic staff, 124 were medical fellows, 23 were nurses from the University hospital, and 48 were members of the non-academic staff.

In addition to staff members on leave of absence, a great many more who were not eligible or could not be granted leaves of absence have resigned and received commissions in branches of the service for which their technical training and experience qualified them.

Technology Study Still Gains at 'U'

Reflection of the extent to which the war is mechanical is seen in the fact that enrollment in the Institute of Technology, University of Minnesota, has shown an actual increase this year, although averaged attendance in all departments has declined slightly more than 13 percent. The institute has registered 2,230 students as compared with 2,174 at this time a year ago, gaining 2.6 percent. The total would be about 150 more if students taking combined courses of technology with business and agriculture were included.

Government loans are available this year to students in engineering, chemistry, medicine, dentistry and pharmacy and some students who are waiting for loan applications to be approved will enter and add to the total when arrangements have been completed.

Byron Osterweil, Long Beach, N. Y., freshman at the Institute of Technology at the University of Minnesota, has placed second in the nation in ROTC competitive examination for appointment to West Point, getting three A's, two B's and a C.

Network of 17 Stations Carry WLB Program

A network of 17 stations effectively blanketing a large area in the northwest will this year carry the "Minnesota School of the Air" programs originated by the University of Minnesota Radio Station WLB. The "Minnesota School of the Air," one of the outstanding schools of the air in America, brings educational broadcasts into the classrooms of both urban and rural communities, resulting in a class estimated to be 100,000 strong. They are broadcast each morning except Tuesday at 11 and each afternoon at 2.

The programs this year are designed to promote the war effort, and a series called "Your Job and the War" has been especially designed to aid young people find their place in the occupational turmoil which has resulted from expanding war industries.

Some of the American heritages for which we are now fighting are made more clear through a series called "Land of the Free."

Dr. William A. O'Brien presents a special series of health talks designed to keep our school children healthy for the duration.

An objective news analysis is presented twice each week for students in the classroom, and the interpretations are made in language which the children can understand.

One of the oldest educational features on the air, the Music Appreciation program, has been streamlined to meet current conditions.

Bulletins describing these courses in detail are available free of charge, and E. W. Ziebarth, program director in charge of the "Minnesota School of the Air," will send them to those who write him in care of the University of Minnesota.

Extension Unit In Special Efforts

Through cooperation of the Bureau of Naval Personnel, the new government film, "Land of Liberty" and a series of recordings showing the growth of democratic movements from Magna Charta on will be presented as part of a new course, "Documents of Freedom" which will be presented by the General Extension, University of Minnesota, Tuesday nights. The division also is meeting the needs of large numbers of boys who need a course in plane geometry before they can take trigonometry, which so many of the armed services specify for their better ratings.

Dr. Hirschfelder, Pharmacologist, Taken by Death

Dr. A. D. Hirschfelder, 63, internationally known professor of pharmacology at the University of Minnesota, died October 11 at his home, 2364 W. Lake of the Isles boulevard.

Head of the pharmacological section of the medical school since 1913 Dr. Hirschfelder was particularly known for local anesthesia studies and for treatment of heart ailments.

He received his M.D. degree from Johns Hopkins university, Baltimore, after graduation from the University of California and studies abroad at Heidelberg and Pasteur institute.

During the World war he served as war department pharmacologist.

At his death he was an officer of the American Society of Pharmacology and Experimental Therapeutics, and chairman of the American Medical Association's pharmacological section.

Dr. Hirschfelder was buried in Lakewood cemetery.

Navy Radioman Now on Campus Has 30 Yr. Record

Never late in thirty years! That's the record attained by Bert Halverson, Chief Radioman attached to the Navy Electrical School at the University of Minnesota, and it's one at which U students might well aim.

In addition, Chief Halverson has never missed a day because of sickness or been on report for any offense against the rules of the Navy.

Born in Norway in 1878, Halverson came to Houston County, Minnesota, at 17, and made his home there before joining the Navy. During his inactive duty and after his retirement he lived with his brothers at Cook, Minnesota.

Enlisting in the Navy in 1905 as an electrician, third class, Halverson was assigned to the electrical school at Brooklyn Navy Yard. His first ship was the U.S.S. West Virginia. Promotions came rapidly, and before finishing his first "hitch," he had advanced to Chief Electrician.

During World War I, Chief Halverson was in charge of the Navy Radio Station at Cordova, Alaska. At the completion of sixteen years service in 1921, he was transferred to the Fleet Reserve.

Recalled to active duty in 1927, Halverson was assigned to the Branch Hydrographic Office, Sault St. Marie, Michigan, where he served until his retirement in 1935.

Among his most prized possessions today are personal letters of commendation from Admiral John Downes, Commandant of the Ninth Naval District, and the late Claude S. Swanson, then Secretary of the Navy, received at the time of his retirement.

Halverson was changed from Electrician to Radioman soon after that rate was created in the Navy. He was called back to active duty in May of this year and immediately sent here.

Radio to Present Lectures on War

The University of Minnesota will employ its radio station, WLB, to conduct two series of lectures this fall bearing on the war and international relations. American History will be dealt with by Professor Ernest B. Osgood in a classroom lecture series Mondays, Wednesdays and Fridays during the fall quarter from 8:30 to 9:20 a. m. Burton Paulu, station manager, said the Correspondence Study Division has arranged to offer the same course by mail to students who wish to make a closer study while following the lectures.

Meanwhile weekly lectures Mondays at 5 p. m. have been arranged by the Center for War Information of the university's Defense Committee. Speakers and subjects are: Oct. 5, "South America and the War," Prof. Raymond Grismer; Oct. 12, "Mexico and the War," Prof. Samuel Dickson; Oct. 19, "India," Prof. George P. Conger; Oct. 26, "Canada and the War," Prof. Horace E. Read; Nov. 2, "Literature in Wartime," Prof. Elizabeth Jackson; Nov. 9, "Cost of Living," Prof. Richard L. Kozelka.

Speakers will be introduced by William S. Gibson, editor of The Alumni Weekly.

President Coffey Outlines 'U' War Policies

Continued from page 1, column 5

Minnesota was appropriately commissioned this summer, with two admirals piped on board for the occasion. I am referring, of course, to the former Men's Union, which is now devoted exclusively to training programs of the United States Navy. In this building are housed several companies of enlisted men, the ship's company, and facilities for messing them. The administrative and staff offices of the training school are also there, and classrooms and laboratories. The special training is given by members of the University staff, and covers a period of intensive work lasting sixteen weeks for each recurring group. Only a month ago the first group of electricians' mates was graduated. Ninety-two men received their certificates and ratings and are now, presumably, with the fleets on the high seas, or at naval bases. Every four weeks additional groups of trained men will leave this campus to take their places with the Navy's fighting forces. On the Farm Campus another Navy school was started on Monday, to train machinists' mates. It, likewise, is staffed by members of our faculty and utilizes the facilities of our shops and laboratories. And now a school for cooks and bakers has been established. Thus the technical skill and the physical equipment of the University of Minnesota are contributing directly toward the prosecution of the war.

I am not at liberty to tell you exactly how many sailors are receiving training at the University—that is a military secret—but I assure you that this state can be proud of the extent to which we are able to be of service to the Navy in meeting its expanding need for trained personnel.

There are other trainees on the campus, also. Almost daily you will see a group of enlisted Army men marching in close formation. They are men from the Army Air Forces, sent to Minneapolis for technical and intensive schooling in the operation of a highly important machine, utilized by the Army Air Forces as it strives mightily to "keep 'em flying." We refer to this group as the DO-ALL Trainees, because of the name of the machine they are learning to operate. Pay them your respects—they are the men who will be of vital service to the Army fliers you may know—yes, even to the men in our own Golden Gopher squadron.

Flight Training Continues

There are future fliers here, too. Under the direction of our Department of Aeronautical Engineering a large group of enrollees in the Civilian Pilot Training program is being given instruction. These are not regular University students—but men sent here on special assignment. The number, likewise, is a military secret—but let me assure you that it is a BIG secret. And a heavy responsibility.

Many of you who live in the Twin Cities are aware that the Minneapolis-Honeywell Heat Regulator Company this summer was awarded a coveted Army-Navy "E" award, in recognition of outstanding war production. Some of the war's most important instruments are manufactured at the plant. What you may not know is that it is essential to train men who can work with this equipment as it is used in the four corners of the earth. In cooperation with the University of Minnesota, the Minneapolis-Honeywell Heat Regulator Company and the Army Air Forces are providing instruction for a large and continuing group of technicians. These men are housed and fed on the campus, receive instruction in our classrooms, and are taught by a staff of men with University appointments.

During the summer months nearly a hundred naval officers were in residence at the University to receive intensive instruction in aeronautical engineering, given by our Department of Aeronautical Engineering; and still other men, civilian employees of the Army Air Forces, were sent to us for specialized work under the direction of the Department of Electrical Engineering. At Crookston, Minnesota, at one of the University's Schools of Agriculture, a glider course has been in progress during the summer and will continue until winter weather interferes with further instruction.

The foregoing are training courses designed for men in the armed forces, and created and operated at the direct request of the Army or the Navy. But these are not the limits of the war training programs the University is offer-

ing. In cooperation with the United States Office of Education special short courses, primarily in engineering and management subjects, have been given to men and women to equip them for positions in war industries. These are known as ESMWT courses: Engineering, Science, Management War Training. Over a period of nearly two years we have offered work in such varied fields as Machine Design, Casting Inspection, Cost Accounting, Motion and Time Study—and I am mentioning only a few examples drawn from 65 courses in which 2,485 individuals have enrolled. Our records show that almost 100 per cent of the men and women taking these courses find positions almost immediately in defense plants. These courses are also taught by members of our own staff and by special instructors that we engage for the purpose. This is but another example of how the University is marshalling its facilities and its technical ability to help win the war.

More Services to Come

All of these examples are but beginnings. I am certain that in the months ahead, and as shifts in man power take place, we shall be called upon to launch many more training courses for men in the services, to be sure, but particularly to train those in civil life, especially women, who will have to step into places vacated by men drawn into active service. In the development of such training courses this University can play an important role and thereby aid the industries and the businesses of this state in making the drastic readjustments they will be called upon to make.

There is research, too. I wish I were at liberty to divulge what is going on in some of our laboratories. The various branches of the federal government most directly involved in fighting this war have innumerable problems that press for quick solution. Most of these call for basic, fundamental scientific research. The government, through the Office of Scientific Research and Development, has turned to the universities for help in making the studies that are required. It is a great credit to this institution and to our faculty, that so many of these highly important, highly confidential research projects are being entrusted to us here. At the meeting of the Board of Regents only last Saturday morning, four more such contracts were added to the already impressive list. What is involved? I cannot tell you—but it will do no harm to hint that studies in war surgery, in blood plasma, in the healing of fractures, in the physics of sound, in diet and nutrition, represent general fields within which the specific studies are going forward. This is the formally organized war research, but in addition hundreds of other projects are underway that have war-related significance, though supported by other than federal funds. On our agricultural campus, for example, problems centering in the all-important question of maintaining an adequate food supply are the object of special attention and research.

The University has gone even further than training and research. Although it is not generally known, I am permitted to say that some of the equipment in our shops is being used for the actual production of war goods, needed by a defense plant in this area, and impossible to supply from any other source than the University.

Do you not begin to sense that the University has achieved a new focus? We are at war—and the University is directing its energies to the task that is most immediate for us all—winning the war.

Staff and Students Serve

But behind all of this vastly important activity there must be men and women, and in this instance it is the members of our own staff. I cannot praise too highly the loyalty, the devotion and the sacrifice that they have shown. Without them, what we as an institution are doing could not be done.

Our staff is serving elsewhere, too, at points distant from the campus. Do you realize that as of last Saturday 378 members of the staff of the University of Minnesota were on leave of absence for military and war-related purposes? They are to be found in government agencies in Washington, as officers in the armed forces, as consultants in plants producing implements of war, and as fighting men in the ranks. A service flag with 378 stars, each representing a staff member in military and naval service, would

be an impressive sight; I wish such a flag were flying from the poles of this majestic auditorium, as a constant reminder to us all that our colleagues are doing their part. And on another mast I would have a companion flag, with approximately 800 stars, representing the students from this institution who are now in uniform.

There are many other evidences of the University's war program that I might describe. I can only enumerate some of these: the Key Center of Information and the War Reference Room in the library, the University Defense Committee and its subsidiary projects; the University Committee on Military Deferment, which handles all matters relating to Selective Service; the special exhibits designed to give us a better understanding of what the war is about; our war savings contributions; and the special war courses developed for men in the armed services and under the direction of our Correspondence Study department.

Finally, there are programs that touch you, as students, directly. The Army and the Navy have their Reserve Officers' Training Corps, and in addition the University is participating in every one of the enlisted reserve programs of the various services—such as V-1, V-5, and Army Air Forces. And there are the pilot training programs.

Long Vacations Doomed

During the summer period a much enriched program of courses was offered, to permit students to accelerate their progress toward a degree. Because we operate on a quarter system, acceleration has always been possible for many students; but this year acceleration took on new meaning, as shown in the fact that we had the largest summer registration in the history of our summer school. It is my conviction that next summer will see even larger proportions of students in residence. As long as this war lasts, four-year college education, with long vacations, is unthinkable. To be sure, complete acceleration calls for federal financial aid to students and to the institutions that train them, and I believe also that such aid must eventually be forthcoming if there is not to be a breakdown in the continuous flow of trained man power—but this is another matter, to be discussed at another time.

This, then, is a brief and sketchy picture of the University in its war setting. But I have said enough to establish the point that the campus as you now find it is far, far different from the campus that your upperclassmates found when they entered the University a year ago.

One could stop at this point, but there are implications in what I have been saying that touch you deeply, and which you as students need to consider.

I am convinced, as I have hinted, that the changes thus far summarized are but the beginnings. As this war wears on and the armed forces grow in magnitude, more far-reaching changes will appear. We as a nation have not as yet met "head on" the man power problem, but the inevitable day cannot be indefinitely postponed. May I read to you, for re-emphasis, a few paragraphs in the pamphlet which have been placed in the hands of every student during the registration period:

"The chairman of the federal Man Power Commission recently said that the time is close at hand when only those students will be in college who are directly preparing themselves for war work. The Man Power Commission has formally approved this statement: 'All students, men and women, must be preparing themselves for active and competent participation in the war effort and supporting civilian activities.'

"These are but a few straws in the wind that indicate that the time is not far distant when every college student must justify his presence on a campus in terms of the war effort.

"One point is important, however, and on it there is general agreement: The need for the training that colleges can give is more pressing than ever before, and grows more pressing every day. Every branch of the armed forces, industry, and governmental agencies calls for men and women with special abilities and special training. If ever a speech made this point clear, the recent speech by General Somervell did. Said the General: 'Our army today is an army of specialists. Out of every 100 men inducted into service, 63 are assigned to duties re-

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T. E. Steward, Editor, 74 Administration Building
University of Minnesota, Minneapolis

quiring specialized training.' So it is in the navy, also.

"The problem that faces you, then, is not 'Should I go to the University?' That has been answered affirmatively on every hand. Your question is, rather: 'Now that I am in the University, what courses should I take that will be of greatest advantage to me and of maximum service to the country in the present war emergency?' This question is one for the women as well as the men. In this war, service is not limited to men alone—as England is amply demonstrating, and as the quotation from the Man Power Commission implies."

Each Must Meet a Need

Is not the conclusion apparent that is to be drawn from all this? If you now have the opportunity to be on a college campus, yours is the responsibility—the grave responsibility—for utilizing the time you are there to prepare yourself for the war-time service you will all be called upon to give? I do not know in what form the call will come to each individual: for some it will be direct military duty; for others it may be re-assignment to a campus for specialized training; for others it will be through application of research skills; for some it may be participation in new types of enlisted reserves that will be to industry what the existing reserves are to the army and the navy. But that you will ultimately be called upon to serve I am certain; and in the time that remains before you give that service, you should get ready for it. In a real sense, every student on a campus of any educational institution in this country, should think of himself or herself as in a pre-induction period. The primary job, at the moment, and as you begin this new academic year, is to get ready for the next things you will be called upon to do. You owe that to yourself, and to your country.

This means that for you there must be a concentration of effort and a focusing of purpose. Life is always a matter of choices, but for students in college in 1942 the range of those choices is closely circumscribed by the war that engulfs us all. Under such circumstances a university has the right to expect that every student will do his duty, beginning at once, and involving every hour of his day. There is no place now on a campus—on THIS campus—for a student, man or woman, who does not regard the winning of the war as the most necessary thing in the world; and who does not, accordingly, keep asking himself, "How can I help?" War is a serious business, and everyone must be serious about it. This does not mean there is no place for what we customarily call "extra-curricular" activities—but such activities, in their importance to you, and in their demands upon your time, must be made contributory to the larger purposes that confront you.

Must Retain Tried Objectives

Nor does it mean that broad educational foundations are to be lost entirely from sight. Some courses you might normally take now may have to be postponed until the happier days when the war is over, and you can return to the University to complete and round out your education. But at the moment you must, perforce, think of the role you are to play in wartime, and of the way you can best utilize the resources of the University in preparing yourself to play it.

Perhaps some of you have already seen the motion pictures of the Battle of Midway taken by the Navy Department. Watching that film is a profound experience. At first it is hard to make one's self believe that it is real. One tends to recall battle scenes in moving pictures, and to say, "This is not so hot; Hollywood does it better!" And then, as those picture unfold, the horrible realization dawns, that these are pictures of actual war—of men fighting each other, and dying. This is not Hollywood—this is war. I hope every Ameri-

can sees that film, for it will tend to dissipate any lingering doubts we may have as a nation that the war is still distant from us. But what is more important, I think it will vitalize us all into reshaping our own purposes to the end that we may do all that lies within our power to back up and reinforce the fighting of those men at Midway, at Dutch Harbor, in the Solomons, or over the cities of Europe or on the desert sands of Africa. That picture of Midway dramatizes for us all the responsibilities that we have here at home. Who, after seeing that picture, can look at his own record of activity without questioning how each thing that he does is related to what those boys—some of our own students and staff members—are doing "out there"?

That is why I say that the changes on this campus should stimulate you to resolve that you will unceasingly devote yourselves to preparing for the part you will be called upon to play before this war is won.

In some ways, the note I have struck has depressing overtones. But as head of an educational institution I would not live up to my responsibilities to you, your parents and our country if I did not speak to you in a straightforward manner. Actually, the reaction to what I am saying should not be depressing. It should be energizing for there is a real call for trained men and women, and this of itself is energizing. The chance for the training is before you. Out of that training may come your great opportunity to serve. You are being challenged by the greatest war in human history. Once that challenge is accepted deep in the heart, there will be such satisfactions as you have never known before. Accordingly, I welcome you to this University in the fall of 1942, and bid you seize with fervor the opportunities that are yours for preparing yourselves for service.

Students at 'U' Given Advice

Continued from page 2, column 5

vide for later service. If these courses may seem to make for a "stiff program" remember that war calls for special effort. Lines of least resistance are to be avoided. Your basic training is the important thing.

Your counsellors and other members of the faculty will be glad to help you in any way they can in building a program of studies that will fit you for the most effective service in the quickest possible time. It should also be pointed out that two-year degrees have already been established and some of you, in planning war courses, may wish to point toward these.

One final word—Should you be called to the armed forces or drop out of college to enter upon service that is supplementary to the war program, any work that you do in these months immediately ahead, and in courses such as these we are calling to your attention, will not be wasted. This is not the time to discuss fine points of college credit—but rest assured that whatever you accomplish during these pre-service days will eventually be counted toward the degree we hope you will ultimately obtain. Furthermore, if these courses seem unbalanced in the light of broad educational foundations we associate with a college or university education, it should be remembered that we do expect that interruption of a college course will be temporary, and that eventually you will be back to pursue your education further; and at that time you will have opportunity to take the types of academic work that make for a well-rounded education. They are not to be lost from sight—merely held in abeyance while more pressing types of training are followed.

The primary job, at the moment, is to get ready for the next things you will be called upon to do.

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'U' Head Urges That U. S. Settle Manpower Policy

Federal Control Over All Undergraduates as Ages Are Lowered Changes Picture

NEW PROGRAM CERTAIN

Plan for Re-assigning Some Drafted Students for Further Training Favored

Confronted with myriad problems as the impact of war grows stronger, state universities and other colleges now need, above all else, a clarification and definition of the government's war manpower policy, President Walter C. Coffey told members of the Association of State Universities and Allied Institutions. Headed by Regent A. J. Olson of Renville, the association held its three-day annual meeting in the Center for Continuation Study, October 29, 30 and 31.

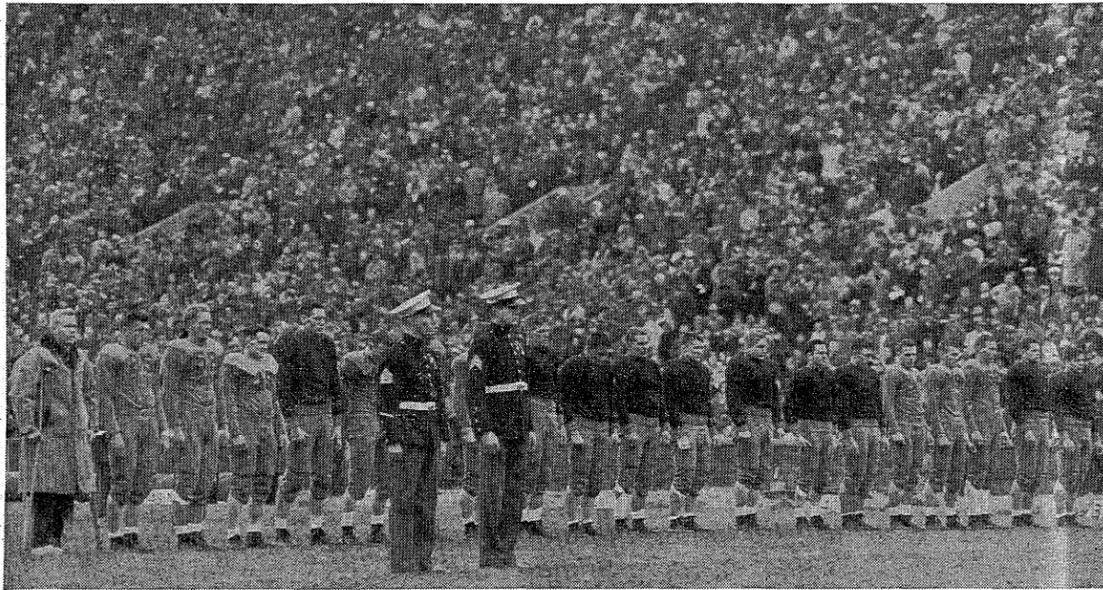
President Coffey's paper also surveyed broadly many of the difficult tasks of internal readjustment and curriculum change with which the universities are faced.

His paper follows:
The other day as I was planning what we could profitably discuss together on this occasion, newspaper headlines were beginning to stress in a new crescendo the manpower issue that confronts the country. One headline read, "Senator Raps Manpower Delay." Another used these words, "Keep Mothers at Home." A third headline stated, "Release of Army Men Over Forty to Farms, Factories Studied." And as a final example, there was the headline reading "McNutt Testifies" in connection with which there appeared a picture of the war manpower commissioner with a caption that explained that in testimony given before the Senate Military Affairs committee, Mr. McNutt had declared that the manpower problem was becoming too complex for voluntary action and that he would submit a national service bill to the President in the immediate future. These headlines that I have quoted reflect, if I sense the situation correctly, a growing groundswell of discontent throughout the country with respect to the handling of the nation's manpower.

You may wonder why at an educational gathering such as this, I have begun my discussion by reference to manpower problems, and your wonder may increase when you recall that the topic assigned to me has to do with the manner in which the curricula of our institutions of higher education should be adjusted to meet the war conditions that now confront us on every campus in the United States. I think, however, there is a logical connection. It is my conviction that problems of curriculum adjustment in wartime cannot be considered independently of the manpower program. For that program, or lack of it, inevitably determines the kind and the size of the student body, both graduate and undergraduate, that as institution will have. And furthermore, it determines the composition of our teaching and service staffs, of our researchers, and our instructors.

There is no need to review the implications of a lowered Selective Service age upon higher education. Eighteen is the approximate age at which boys and girls finish high school. Unless some plan is developed to provide for a flow of some students into the colleges, our student populations will be reduced to almost nothing, or will consist only of the physically unfit and of women at least until such time as they too are conscripted for national service.) It is obvious that unless some system is devised that will insure continuous education for some part of our college and university populations, we shall dry up our sources of trained manpower to the detriment of the armed services as well as of our industrial programs. The colleges and the universities are established as training centers. They have staff

University of Minnesota Athletes Sworn in as Marines



Nearly a score of University of Minnesota football players took the oath as members of the United States Marine Corps Reserves on Saturday, October 3, when Minnesota met the team of the Iowa Pre-Flight Training School. The ceremony was conducted between halves.

Allergy—A New Field of Medicine Described by Dr. A. V. Stoesser

The subject of allergy has assumed such an increasing proportion of the field of medicine in the past few years that it is incumbent upon everyone to be familiar with its principles, says Dr. Albert V. Stoesser in a paper written for "Minnesota Chats." Allergy may be defined as a natural sensitiveness of the human organism to a chemical (or physical) substance which is harmless to most persons. Thus, the vast majority of us eat bread and enjoy it, but to an occasional person such a food may result in eczema or nasal obstruction and discharge. Most of us inhale the hair or dander of the dog and are not aware of it; a few react by manifesting asthma. We say that these people

and physical facilities to insure the continuous flow of the technically equipped men and women upon whom we must depend for the successful and efficient prosecution of the war. These vast resources must be utilized effectively and fully in the country's manpower program.

State Universities Concerned
This subject was the most important topic considered last week at the meeting of the National Association of State Universities in Chicago. The presidents of forty or more state institutions were obviously greatly concerned about the effect of the lowered draft age upon their institutions. It was not a selfish concern, either, but rather concern lest the potentialities represented in their institutions were not to be utilized adequately in training men and women for effective participation in the war effort and allied efforts. These university presidents summarized their attitudes in a resolution, which though, it mentions specifically the state universities, has application that embraces all institutions of higher learning. It is evident that they believe that their future service is involved in the problem of manpower and in the federal policies and procedures that are to govern manpower. I wish to read that resolution to you:

Their Resolution
The state universities are the agencies of all the people, entrusted with the custody and training of youth under public mandate, support and direction. Their service is the public service.

To win the war is the highest and most critical public service of the moment, requiring trained intelligence and a maximum of technical skill.

The state universities are under moral obligation to set the example of hearty cooperation with the selective service principle of the war. They have plant, personnel and student manpower which must be selectively utilized

Continued on page 4, column 1

are allergic on account of their reaction in an abnormal way to something which is non-toxic to most of us.

The importance of acquaintance with the field of allergy is based upon several considerations. In the first place the symptoms of allergic reaction may occur in almost any part of the body. Depending on the location of the reaction we may have eczema, urticaria (hives), allergic coryza (allergy of the nose), hay fever, bronchial asthma, gastro-intestinal allergy, migraine or vernal conjunctivitis (allergy of the eye).

Prevalence Fairly High
Not only are the allergic diseases or symptoms quite variable but the prevalence of such conditions is fairly high. It may be conservatively said that there are in this country alone five million hay fever sufferers, and between three and four million asthma cases. Three million people have migraine and approximately two million individuals suffer with allergic skin diseases. With the addition of other allergic diseases we may readily see that there is a vast army of allergic individuals. It is true that the mortality from allergy is very small. Yet the inconvenience and discomfort, the economic loss of time from school or work, the disabling effect in many cases, particularly the asthmatics, and the complications that are apt to follow, all make the allergic diseases as a whole a very important group and well deserving of our interest during the present war emergency.

What is the cause of allergy? The fundamental difference between the allergic and non-allergic individual is not known. In the causation of allergic disease three factors, however, must be considered, each of which plays a definite role. They are the constitutional, primary, and secondary causes. The most certain knowledge we have concerning this constitution is that it is usually inherited. It has been stated that by the tenth year of life allergic symptoms have appeared in 89 per cent of the offsprings under a bilateral hereditary influence, in 35 per cent of those subject to a unilateral influence, and in only 20 per cent of those with a negative allergic history in immediate members of the family. The greater the hereditary influence the earlier are symptoms manifested, and the earlier in life the individual becomes sensitive the greater the tendency to multiple sensitization.

Tendency Only Is Inherited
It should be stated that it is the allergic tendency that is inherited and not the allergic disease. Thus, a grandparent may have asthma, the parent hay fever, and the grandchild eczema. One may be sensitive to house dust, the next to a weed pollen and the child to milk. All these individuals of the

Time to Attack Shade Tree Pests

The time to crack down on some of the pests which destroy the foliage of shade trees is during the fall months, says Dr. A. G. Ruggles, University Farm entomologist. Two common Minnesota insects that are especially fond of elm and basswood leaves can be curbed by action now. They are the Tussock Moth and the canker worm.

The Tussock moth has been building up in numbers in recent years until there is danger of serious damage during the 1943 season, says Ruggles. Presence of this insect is now indicated by white egg masses on the bark and branches of trees. These very conspicuous bunches can be scraped off and burned, thus eliminating the cause of the trouble for next year.

Canker worms which did a good deal of damage to the foliage of elms this year can be headed off during the next few weeks. After the first hard freeze the moths move up tree trunks and can be destroyed by a sticky substance commonly known as tree tangle-foot smeared in a ring around the lower trunk. The insects become stuck in trying to climb the tree. The sticky substance must be stirred up daily so that the insects do not form a bridge and succeed in climbing over it.

same family have a common characteristic, the ability to become sensitized and to react in an abnormal way.

The constitutional factor alone cannot be responsible for allergic symptoms. It is important that the allergic subject become sensitized to a particular substance. Once sensitive, it is necessary for him to be again exposed to that substance before an attack occurs. These substances referred to as excitants or allergens are usually protein in nature but not necessarily so. Drugs may be responsible. The patient may be exposed to the substance to which he is sensitive and still fail in some instances to react. This may be due to the fact that the dose of the ingested or inhaled allergen is below that particular individual's tolerance. A larger dose may produce an allergic attack. The tolerance of a subject varies from time to time, depending on the general health of the individual, and also on secondary or precipitating causes such as cold, heat, wind, or a sudden change in the weather.

What is the present-day treatment of allergic diseases? For many years these diseases have been treated with various forms of medications and in some instances surgery has been used. Now every effort is made to find the sensitizing agent or agents. However, the physician is not able to offer much help unless he receives complete cooperation from the patient. This is the most important feature of the treatment of today.

Student Totals Drop Less Than Was Expected

Actual Enrollment of New Freshmen at University Shows Gain

OVERALL DROP IS 13%

Effects of Lowering Draft Age Limits to Be More Serious

Although some divisions were hard hit, enrollment at the University of Minnesota has dropped this year in a degree somewhat less than had been anticipated in advance estimates.

As of October 24, a total of 12,468 students had entered the institution, of whom 12,052 were still in attendance, and of these 7,259 were men and 4,793 were women.

Decline in enrollment from last year, as nearly as such a figure can be given for a population that varies from week to week, is in the neighborhood of 13 percent, overall, with some divisions losing far more than that while others recorded actual gains. Nursing, medical technology and the Institute of Technology were those with increases. There also was a small increase in the number of freshman students entering the University of Minnesota, which figure rose to 2,748 from 2,684 in 1941, a gain of 2.4 percent.

A recent report by True E. Pettengill, acting director of admissions and records, shows that since college opened 255 men have cancelled, of whom 107 left to enter military service. There also have been cancellations of 91 women, none to enter military service. This is three times the rate of cancellation last year for men and nearly twice for women.

What effects the establishment of selective service over 18 and 19 year old men will have on university enrollments is not difficult to foresee, and the address by President Walter C. Coffey, printed elsewhere in this issue of Minnesota Chats, expresses his ideas on that subject. He feels, as he points out, that the armed services should assign back to university campuses a considerable number of the drafted youngsters for further training in line with their abilities as revealed by scientific tests. Barring this the small stream of cancellations that has come largely from men enlisting will be a torrent before the current college year comes to an end.

Enrollments in the various university departments on Oct. 24 were as follows:

College	Men	Women	Total
General Coll.	266	188	474
University Coll.	21	18	39
Science, Lit., Arts	1802	1924	3726
Tech. & Agric.	16	.....	16
Inst. of Tech.	2214	17	2231
Tech. & Bus.	88	1	89
Tech. Ag. & Bus.	2	.....	2
Agri. For. & Home Ec.	337	526	863
Law	118	9	127
Medicine	546	36	582
Medical Tech.	.....	100	100
Nursing	.....	622	622
Pub. Health	.....	125	125
Nursing	.....	3	6
Public Health	3	.....	3
Phys. Therapy	.....	8	8
Dentistry	293	2	295
Dental Hyg.	.....	60	60
Pharmacy	137	26	163
Education	280	641	921
Agri. Educ.	32	99	131
Business	294	83	377
Agri. Bus.	1	.....	1
Graduate	789	305	1094
Total	7259	4793	12052

As of the date given above the University of Minnesota this year, had given instruction to 22,320, exclusive of summer sessions, and was giving instruction to 19,615 on October 24. This larger figure includes evening classes, correspondence study registrations, the several Schools of Agriculture, short courses and the like. Most of these are below the collegiate level, or at least are not to be classed as full time college students, although college credit is given for evenings of study.

Early Records of U. S. Navy's Start Told Navy Day by Dean Willey

Minutes of Continental Congress Provide Data on 18th Century Appropriations

How the United States Navy came into being 167 years ago in 1775 was told by Dean Malcolm M. Willey, assistant to the president, who was the University of Minnesota's representative at Navy Day exercises held in the Northrop Memorial Auditorium two weeks ago. The meeting was a joint project of the Navy League and the University of Minnesota. Rear Admiral William H. P. Blandy was the principal speaker.

Dean Willey went back into early records of the Continental Congress for a description of the Navy's first small splashes. His paper follows:

Most of the speakers this evening will, and quite properly, focus their attention on the present and the future. They will extol the greatness of the American Navy as it is, and as it will be. I, however, wish to turn your eyes toward the past, for it is one of my convictions that a true appreciation of the greatness of the present is vastly enhanced if we understand and are aware of the humble beginnings from which we have developed. A sturdy oak is a marvelous thing to behold, but the marvel is magnified if we recall that it has grown from a tiny acorn. The sturdiness of the American Navy in 1942 is all the more wonderful when we think of it in terms of 1775.

Today we celebrate and commemorate 167 years of growth.

I was curious about those beginnings that take us back to a time before the Declaration of Independence—back to the days when a Continental Congress shaped the destinies of the colonies. And so I went to our University Library and drew from the shelves—what it may surprise you to know we possess—an original copy of the printed minutes of the Continental Congress. And there, on those ancient pages, I read for myself the formal record that tells of the beginnings of the American Navy. It occurred to me that you, too, might like to hear the story in the very words of the original record. Let us turn, then, to the entry for Friday, the 13th of October, 1775. The delegates from the Colonies, with the cloud of war and revolution hanging low over their heads, were assembled in Philadelphia. I quote exactly:

RESOLVED, That a swift sailing vessel, to carry ten carriage guns, and a proportionable number of swivels, with eighty men, be fitted, with all possible despatch, for a cruise of three months, and that the commander be instructed to cruise eastward, for intercepting such transports as may be laden with warlike stores and other supplies for our enemies, and for such other purposes as the Congress shall direct.

That a committee of three be appointed to prepare an estimate of the expense, and lay the same before the Congress, and to contract with proper persons to fit out the vessel.

RESOLVED, That another vessel be fitted out for the same purposes, and that the said committee report their opinion of a proper vessel, and also an estimate of the expense.

The following members were chosen to compose the committee: Mr. Deane, Mr. Langdon, and Mr. Gadsden.

I do not know anything about the Messrs. Deane, Langdon, and Gadsden—but in truth they are the founding fathers of the American Navy, for on Monday, October 30th, 1775, they were ready with their report, and presented it to the assembled Congress.

Again I read from the original minutes:

The committee appointed to prepare an estimate, and to fit out the vessels, brought in their report, which being taken into consideration,

RESOLVED, That the second vessel ordered to be fitted out on the 13th instant, be of such a size as to carry fourteen guns, and a proportionate number of swivels and men.

RESOLVED, That two more vessels be fitted out with all expedition; the one to carry not exceeding twenty guns, and the other not exceeding thirty-six guns, with a proportionate number of swivels and men, to be employed in such manner, for the protection and defence

of the United Colonies, as the Congress shall direct.

RESOLVED, That four members be chosen and added to the former committee of three, and that these seven be a committee to carry into execution with all possible expedition, as well the resolutions of Congress passed the 13th instant, as those passed this day, for fitting out armed vessels.

Four sailing vessels, equipped with a total of 80 guns, and a "proportionable" number of swivels and men—that was the Navy of the United Colonies!

Contrast it in your mind's eye with the Navy of our country as it is today—and with the navies of the United Nations! The years from 1775 to 1942—167 of them—have been years of tortuous growth. The very nation against whom this first navy was directed has now become one of our staunch allies, and the very cause that first tore us asunder—democracy—now joins us in common purpose.

Who, in paying tribute in 1942 to the Navy of our country can fail to glow with a new and deeper pride as he thinks of the foundations that were laid by a small body of devoted Colonial patriots assembled in the Continental Congress in 1775!

I hope that on this occasion of Navy Day, 1942—and as we meet here in commemorative ceremony—the shades of the Messrs. Dean, Langdon, and Gadsden are looking down upon us.

And if they are, I am certain that they will commend us for the way in which we are carrying forward our country's glorious naval traditions, which began with them. With their blessing upon us, ours then becomes the responsibility for making the year 1942 as significant a date on the calendar of Navy history as they, 167 years ago, made that October date in 1775.

Statistics Show Illiteracy Rates

Lieutenant General Brehon B. Somervell, commanding general of the Services of Supply, upon receiving a report on illiteracy as it has affected the Army and inductions, stated flatly that "it must be removed."

There are no recent figures on rejections for this cause beyond those made public by President Roosevelt in May, when he disclosed that 433,000 men had failed to pass the literacy tests—enough for nearly thirty divisions.

However, a summary of a report issued by the Census Bureau of the Department of Commerce on June 20 shows that in the United States there are 828,700 men between the ages of eighteen and forty-four years who have had less than four years of grade school. More than half of these, 456,980, are from the South, 303,200 from the North and 68,520 from the West. Illiteracy (of all ages) is highest in New York state, with 1,020,000; Pennsylvania is second with 696,000, and Texas next with 642,000. Iowa is lowest with 61,000.

This report was issued to show that the 1942 model of the American soldier is more proficient in his "three R's" than the soldier of 1917-'18.

Forty-one per cent of all white men inducted into the Army in the last two years are high school graduates or have had some college training, whereas only 9 per cent of the men in the first World war had reached that level, the study reported.

Census Bureau figures for 1940 reveal that of the men in the eighteen-to-fourty-four age group who have registered for selective service, only 5.3 per cent had less than four years of formal schooling. Approximately half the group had less than nine years of school, with the other half having more; the median numbers of years of schooling completed being 9.4, or the equivalent of slightly more than one year of high school.

Of this group, men from twenty-one to twenty-four had the highest median number of years of school and those from thirty-five to forty-four the lowest. The study pointed out, however, that the eighteen-to-twenty-year group had not yet completed their education. These facts, the report said, reflect the rapid improvement in educational opportunities in recent years.

Dr. A. R. Upgren Leaves University For Federal Bank



Dr. Arthur R. Upgren

Arthur R. Upgren, University of Minnesota economist and recognized authority on economic and financial research, has been elected vice president and economist of the Federal Reserve bank of Minneapolis.

His election by the bank's board of directors will place him in direct charge of a new program being undertaken by the bank for expanding all phases of the institution's research work regarding present and long-term problems of business, agriculture and finance in the Northwest.

"We hope through this program to render increased service to the business and economic life of the Ninth Federal Reserve district, embracing Minnesota, the Dakotas, Montana, northwestern Wisconsin and the upper peninsula of Michigan," said President John N. Peyton, who announced the election.

"At the same time, studies undertaken with his guidance may be of value in integrating regional problems with national economic research activities now in progress or which may be undertaken in the future."

Dr. Upgren has served on several important economic missions for various departments of the federal government in the past few years.

His most recent work, one that he finished only a few weeks ago, was as chief of the national economics unit of the bureau of foreign and domestic commerce in the United States department of commerce.

In this, he directed extensive study of national post-war economic problems.

He also has served as economic analyst in the department of state in connection with the negotiation of reciprocal trade agreements with foreign countries, and in other research posts.

His various previous research activities were undertaken while on leave from the university. Dr. Upgren will devote his full time to his work with the Federal Reserve bank.

Athlete Gets Commission

A recent graduate of the Officer Candidate course at the Infantry School at Fort Benning, Ga., and a new second lieutenant in the Army of the United States, is Lt. Virgil O. Bergeron of Minneapolis, a well-known athlete at the University of Minnesota a decade ago. Lt. Bergeron, who lists his civilian address as 2916 E. 26th Street, Minneapolis, played on the Gopher hockey team which won the Big Ten championship in 1930, and was captain of the team in 1931. An all-around athlete, he was also prominent in semi-pro baseball, tennis and golf. Lt. Bergeron was commissioned after successful completion of the three months' course.

Casey on Board For Radio Awards

Dr. Ralph D. Casey, professor and director of the School of Journalism, University of Minnesota, has been appointed to the committee which selects winners of the annual George Foster Peabody awards for excellence in radio productions. It was also announced that new awards will be made to a regional and a local station for contributions to the community which the station serves. Other prizes, continued from past years, are for news reporting, entertainment in drama, entertainment in music, and outstanding educational programs.

The awards, endowed by a former New York banker, are made by the Henry W. Grady School of Journalism, University of Georgia.

Entries may be submitted up to Dec. 15 by individual stations, networks, radio editors of newspapers and magazines, listener groups or any person or organization wishing to nominate a program. The board will not be restricted to entries, however, in making the awards.

Entries must be sent to the Henry W. Grady School of Journalism, University of Georgia, by Dec. 15. Forms are available at the university. One transcription may accompany an entry.

Peabody Awards were first made in 1941 for the year 1940. Winners are picked by the advisory committee composed of Bruce Barton, BBDO; John H. Benson, AAAA; Dr. Ralph Casey, director University of Minnesota School of Journalism; Jonathan Daniels, editor Ralph News and Observer; Mark Ethridge, general manager, Louisville Courier-Journal and Times; James H. Jackson, literary editor, San Francisco Chronicle; Waldemar Kaempffert, science editor, New York Times; Alfred A. Knopf, publishers; Edward Weeks, editor, Atlantic Monthly; Mrs. Beatrice Sawyer Rossell; Dr. Keith Tyler, director of evaluation of school broadcasts, Ohio State U; Mrs. Marjorie Peabody Waite, daughter of George Foster Peabody.

O'Brien Health Lecture Topics

Dr. William A. O'Brien's health broadcasts over WCCO and WLB on behalf of the Minnesota State Medical Society will continue through November and December, as usual. He speaks at 10:15 a. m. Saturdays over WCCO and at 11:30 a. m. the same day over WLB. Topics for the remainder of November and for December will be as follows: Nov. 14, Smallpox and scarlet fever; 21, Schick and tuberculin testing; 28, Preventive and restorative dentistry; December 5, Senescence and senility; 12, Special health problems of middle and late life; 19, Care and management of adults; 26, Dental replacements.

Dr. McConnell Now Acting Dean, S.L.A.

Dr. T. Raymond McConnell, associate dean of the College of Science, Literature and the Arts, University of Minnesota, has been advanced to the position of acting dean, President W. C. Coffey announced. During the absence of Dean John T. Tate, now supervising a large number of laboratory researchers in war work under the Carnegie Institution, Washington, Dean McConnell has been conducting the affairs of the college for the past two years. He is also chairman of the university's committee on educational research and of a committee having general oversight of the General College.

'U' High to Fingerprint

Recently trained in finger-printing technique, a squad of University High School boys will fingerprint the entire student body and faculty. They will be under direction of Jim Curtis, formerly football coach. Finger-printing will be carried on in the school library both Tuesday and Wednesday. It will be voluntary on the part of the printees, Curtis said.

men in modern dances, basketball drills, ski exercises, tumbling, six boy football by boys from Pillsbury Settlement House, relays by teams from four defense plants, and representatives of the Minneapolis recreation department, St. Paul Humboldt high school and North high school, Minneapolis.

Miss Ann Woodward directed the women's formations, and Maurice Ostrander, those of the men.

Fitness Program Here Wins Praise

Gov. Harold E. Stassen and Dr. Carl Nordly of the University of Minnesota were singled out for praise Oct. 31, when John B. Kelly of the Defense, Health and Welfare Services, Federal Security Agency, spoke at a symposium on Physical Fitness in the Museum of Natural History. The meeting preceded the demonstration of fitness procedures held between halves of the Minnesota-Northwestern football game.

The Minnesotans were praised for their work toward developing wartime physical conditioning programs.

"I do not stand alone when I make the statement that America is soft," said Mr. Kelly, formerly a famous Olympic sculler. "Observation by experts in this field and also the draft statistics give every evidence that our youth are sub-standard and do not have the physical development that is demanded by the armed services.

"You and I know that when a man is called into the army the first six months are spent in toughening him up. I want our schools and colleges to prepare these men physically for the armed forces and thus save this time. We have just begun to realize the seriousness of this situation. Many states and communities have by now developed programs aimed to correct this deficiency. Our physical fitness division of the United States Office of Education is about to publish a manual for use in our schools and colleges for the purpose of developing vigorous men and women to take their places in the Army and Navy and along the production line. Gov. Stassen of this state some months ago gave definite evidence of his support by establishing a program for physical fitness and recreation directed by Dr. Carl Nordly of this university. You are to be congratulated upon such fine leadership in this important phase of our war effort and every one of you should dedicate yourselves to the task of building power into our youth and convincing the civilian population of the individual benefits and the national advantage that result from healthful living."

Fitness Show Seen in Stadium

The first mass demonstration of physical fitness procedures ever presented in Memorial Stadium featured the pre-game and between-halves periods at the Minnesota-Northwestern football game at the University of Minnesota. Representatives of many colleges, high schools and athletic clubs, as well as men and women from the University of Minnesota, took part under Dr. Carl Nordly, coordinator of the project.

A conference on physical fitness occupied the morning, starting at 9 a. m. in the auditorium of the Museum of Natural History. Chief visiting speaker at that time was John B. Kelly, Washington, D. C., assistant director in charge of physical fitness, Office of Defense, Health and Welfare Services of the Federal Security Agency. Dr. Nordly will speak on "Fitness, a community responsibility." Representatives of four statewide associations took part in a series of discussion groups.

Actual demonstrations on the field were conducted both before the game and at the end of the first half, and between 400 and 500 persons took part. Final event was a running of the obstacle race recently developed at Minnesota, with one man from each, St. Olaf, Hamline, Macalester, University of Minnesota, St. Thomas, University Farm and Carleton.

Having representatives in the elaborate mass exercises on the field were men turners, women turners, men's and women's sokols, St. Paul YMCA, Minneapolis YMCA, St. Paul police and fire departments, Minneapolis police department, St. Paul and Minneapolis YWCA's, Minneapolis and St. Paul Athletic clubs, girls and boys of the Catholic Youth Organization, Hamline University women, University of Minnesota men, University of Minnesota women, St. Thomas College men, Boy Scouts, Campfire Girls, Girl Scouts, Girl Reserves, Marshall High School girls, Monroe (St. Paul) High School boys, Maria Sanford Junior High (St. Paul) girls, Lincoln Junior High (Minneapolis) boys, and the University of Minnesota band.

Also in events before the game were representatives of St. Paul parks and playgrounds, wrestling by university men, university wo-

CHRISTMAS SEALS



... Protect Your Home from Tuberculosis

Farmer Regent States His Views At National Meeting of Trustees

A. J. Olson Describes Development and Operation of Land Grant Colleges

The presidential address before the Association of Governing Boards of State Universities and Allied Institutions when they met in Minneapolis Oct. 29, 30 and 31, was delivered by Regent A. J. Olson of Renville, Minn., farmer member of the University of Minnesota Board of Regents. Representatives of some 50 institutions were present at the Minneapolis sessions in the Center for Continuation Study.

Following was Regent Olson's address:

Last year at Laramie, Wyoming, it was indicated that the custom has been that the president of this association should deliver an address preliminary to the business in hand. Were it not that this has been a custom, I should have upset the old order and spared you this year. However, I shall adjust myself to prevailing customs and definitely ration the offering. Since I am a farmer, I wish to discuss the topic of the "University and the Farmer." I know that many of you are regents, trustees, or curators of schools that carry on instructional and research work in agriculture, and I understand full well that you know much about your institutions and their work.

It is interesting from time to time, to take an inventory; to look back over the road that we have come, to speculate on the road we may travel. We now again find ourselves involved in a great war. Wars have always caused much change in our agriculture. Our price level was greatly inflated by the Napoleonic Wars and this, undoubtedly, was one of the factors decisive in bringing about the Louisiana Purchase which added an agricultural empire to our national domain. The Civil War produced the Land Grant College Act and the Homestead Act with the resulting speed-up of westward expansion; and, as we all know, World War No. 1 changed our status from a debtor to a creditor nation, with most far reaching effects on our agriculture, producing an economic condition from which we had not recovered at the beginning of this present conflict.

We also know that World War No. 1 set the stage for economic and political upheavals which have undoubtedly contributed much to the bringing on of the present war. Undoubtedly, we shall find that this war, as well, will still further intensify problems of agriculture, and through them and along with them, all of the problems of our economic and social well-being. Such problems arose during and following the Civil War, and it was through the vision of a great statesman who understood agriculture and its relationship to the national well-being, that the Land Grant Colleges were established in 1862, and through the Morrill Act, 30,000 acres of land were granted to each state for each representative they had in Congress, the income of which was to be used for the establishment of at least one such college in each state.

It can readily be seen that the money each state would receive would vary greatly, as location and nature of the land determine its money-value. Very little was known as to what the land would yield in the form of money. Not all states were fortunate enough to discover gold, or oil on their land. However, it was a start, and subsequent grants from the Congress have made funds available to such an extent that the Land Grant College program of research, resident instruction, and extension work constitutes the greatest adult education program ever carried on in any country.

Started the Idea

This idea of a college in which agriculture was to be taught, was not brought on by the real dirt farmer as we think of him today. It was the gentlemen farmers, or the front-porch farmers, who had the foresight to see that there was much to be learned about farming. I think that attitude has been carried on until rather recently. I remember well the protests set up by many farmers about County Agent work, extension work, and the "book farmer." Let it be remembered that we owe much to the far-sightedness of the statesmen of those early days who carried through the beginning of this great system. At the time the Land Grant Colleges were established, we were still in a Civil War; the East had not been industrialized;

the population was largely rural; the land was fertile and plentiful and production did not seem to be a problem except that all our methods were of the crudest, and yet they served for a people who are largely self-sufficient and independent in that self-sufficiency. The College of Agriculture was to be a practical school to teach the farm people how to live on the land, how to produce on the land.

The original idea was that the colleges were to be more or less vocational and to constitute a definite departure from the classical. However, as the years have gone on, Land Grant Colleges have become more and more great research institutes confining their program largely to training teachers and others to carry on in extension and research work; and only a small percentage of those receiving degrees from colleges of agriculture have gone back to the farm, since by the time the student gets out of college, the income that he can expect from the farm looks too small. He does not choose to live the simple life there, but rather to take advantage of the many other opportunities for making a livelihood. This is generally accepted as one of the weak spots in the training program of the Land Grant Colleges. However, it should be understood that this does not minimize the great value to agriculture of the research and professional training that is carried on through these Land Grant Colleges.

We have here at Minnesota a program of training farm young folks in the business of farming through our University which is unique and about which you shall undoubtedly hear more in the address delivered by J. O. Christianson, Superintendent of the School of Agriculture, during this session. However, we would be derelict in our discussion of the Land Grant Colleges if we did not include the United States Department of Agriculture, for as constituted today, our colleges are really a counterpart of the great United States Department of Agriculture. The objectives of that Department at the time of its establishment in 1863 through an appropriation of only \$60,000, seemed about as broad as they are today; and most of the experimental work as far as crops were concerned, was carried on in Washington at the location of the present U. S. D. A. right on Constitutional Avenue. In fact, field crops have been grown along Constitutional Avenue ever since Henry A. Wallace became Secretary of Agriculture. However, this was very likely not for experimental purposes as much as for show; something like the roof gardens in Rockefeller Center. Vegetables were grown this year instead of flowers and, I suppose, victory gardens on the roofs. So with the 69 colleges of agriculture, experimental farms that go with them, and the U. S. D. A., we have the basis for training and furnishing information to the millions of our people who live on the farm.

The question is naturally raised by many as to who gets the direct benefit of our colleges of agriculture. I have already indicated that the percentage of those receiving degrees from the colleges who actually go back to the farm, is very small. The graduates generally go into fields of research, extension work, or teaching, and others are picked up by industries as a part of a program of selling something to the farmer, which occupation accounts for a multitude of concerns and of individuals.

I am quite sure that the brains in many of these organizations are those of agricultural graduates and if they are also farm boys, they know even better how to handle the farmer. Probably the greatest benefit to the farmer comes through the extension forces, the extension specialists, county agents, home demonstration agents, and 4-H club leaders. It has been these activities, as well as research, that has received by far the greater portion of the various appropriations of Congress. This has been particularly true during this century when such legislative acts as the Bankhead-Jones Act, the Purnell Act, the Adams Act, and others were primarily for aid to experiment stations to carry on further experimental work in agriculture. We should, of course, recognize the Smith-Lever Act of 1910 which provided for extension education through agricultural agents and home economics specialists at the Land Grant Colleges. In 1928 the Capper-Ketcham Act was passed

New Chair Named For Benefactor Of University



Dr. John J. Bittner

Dr. John J. Bittner, now at the Roscoe B. Jackson Research Laboratory, Bar Harbor, Maine, will come to the University of Minnesota in the near future to take part on a program of cancer research now going on here along lines to which he has made some of the major contributions. This extension of cancer research has been made possible by a gift from the Citizens Aid Society of Minneapolis, amounting to \$5,500 a year for five years. Dr. Bittner has been appointed to the George Chase Christian professorship in cancer research, the first chair in the Medical School to be named for an individual. The Citizens Aid Society also contributes \$10,000 a year to the support of the George Chase Christian Memorial Cancer Institute in the University hospitals. Cooperating in the work Dr. Bittner is to do will be Drs. Maurice B. Visscher and Robert G. Green, now on the staff of the Medical School. A more detailed account of this new research effort will appear in the next issue of "Minnesota Chats."

which augmented the Smith-Lever Act and specified that at least 80 per cent of this money must be used to pay the salaries of county agents when the Smith-Lever money was gone. Seven hundred counties, at that time, were without a county agent. There was a feeling by many, that every rural county should have a county agent, a home demonstration agent, and a 4-H Club leader, and up to this time, it has been required that the state must match the federal funds.

Bankhead-Jones Act

In 1935, the Bankhead-Jones Act still further added federal funds for extension in agriculture and home economics. The extension and county agent program received its greatest impetus during World War No. 1, through the need of encouraging and promoting the greater production of foods. In 1933 when the Agricultural Adjustment Act was passed, there were 72 rural counties in the United States without county agents, and in those counties, agents were appointed on federal funds mainly to carry out the provisions of the Agricultural Adjustment Acts. Since then, many of these so-called emergency agents have become permanent.

It has been the aim of those in charge of the Land Grant College program of research, teaching, and extension work, to be aware of the problem of the individual farmer, to furnish to him the most up-to-date information in answer to those problems, and in some of the Land Grant Colleges, to courageously point the way whereby the farmer might, through organization and through legislation, maintain himself on an equality with other groups in the national economy. It should not be forgotten that the work of the federal government and of the state carrying on this program of education and research, works to the benefit, not only of agriculture, but through a more efficient, better program of production, it reacts to the benefit of every man, woman and child, not only in this nation, but throughout the entire world. Even today, the people of all the nations joined together in the struggle to maintain civilization, are looking largely to the farmers of these United States for food, and it may well be said, that the winning of the war and the peace that follows will be determined, to a large extent, by the education and research carried on through our Land Grant Colleges

Travel Decrease Trims Nation's Highway Toll

National Safety Council reported Thursday that the nation's traffic fatalities dropped 24 per cent in the first nine months of the year.

The nine-month fatality total was 21,290 compared with 27,900 for the same period in 1941.

September fatalities totaled 2,240, compared with 3,730 in the corresponding month a year ago, a drop of 40 per cent. September was the second successive month to show a decline of 40 per cent or more. The August reduction was 43 per cent.

and our U. S. Department of Agriculture for the past 80 years.

Extension Yields Large Return

I have given a very scant resume of the federal legislative provisions regarding agricultural education through our Land Grant Colleges. I am of the opinion that money spent in the extension program has brought many-fold returns compared with the money spent in other lines of education. Today you will find evidence of the extension teaching through better feeding, better soil culture, better live stock, and better crops. The farmer today who does not know about the nitrogen, phosphorus, and potash needs of the soil or the protein and vitamin needs of the livestock on the farm, is getting to be an exception. Not only through the program of extension work throughout the state, but also through agricultural short courses dealing with the various highly specialized problems of agriculture where the farmer himself attends classes right at the college campus, has much of this progress been achieved. Due to scientific methods, eggs are produced in greater amounts in winter than in summer, and turkeys are produced in droves of thousands, crops are developed to resist diseases and to withstand diverse weather conditions. Many farmers who are making use of improved crops or methods have the information of the methods used by the extension service.

I do not want to leave the impression with you that all has been solved for the farmer. There is a great need, of course, for continued research in all agricultural lines. Many live stock troubles have not been solved, crop diseases seem to be running us a

Continued on page 4, column 5

Dr. L. S. Palmer Wins Promotion

Appointment of Dr. Leroy S. Palmer, professor of biochemistry, as acting chief of the division of biochemistry, University Farm, following the loss by death of Dr. Ross A. Gortner was approved by the Board of Regents today following recommendation by Dean Clyde H. Bailey of the Department of Agriculture and President Walter C. Coffey. Holder of B.S., M.A. and Ph.D. degrees from the University of Missouri, Dr. Palmer has been a member of the Minnesota faculty since August, 1919, when he came here from that institution. He was promoted to a full professorship in 1935. Dr. Palmer is one of the best known biochemists in the United States, his leadership having been recognized in 1940 when he was awarded the Borden Prize of \$1,000 and a gold medal for research work, bestowal being made by the American Chemical Society. He is author of more than seventy-five papers in scientific journals. Dr. and Mrs. Palmer live at 2262 Carter Ave., St. Paul.



Dr. L. S. Palmer

Fresh Water Fish Gain in Value

Fresh-water fish, and particularly their livers and oils, are potential sources of arsenic in foods and other commercial products utilizing them, an investigation reported to the American Chemical Society shows. The toxicity of the arsenic in these fish has not yet been evaluated by biological test.

In view of the growing interest in fresh water fish oils and the general use of such fish as food for both man and domestic animals, quantitative findings on the arsenic content of 681 fish representing fifteen species taken from fifteen inland waters in Florida, Georgia, Alabama and Texas were made by M. M. Ellis, B. A. Westfall and M. D. Ellis, of the University of Missouri Medical School and the United States Fisheries Laboratories Columbia, Mo.

The fish analyzed for arsenic included long-nosed gar, gizzard small-mouth buffalo, spotted sucker, German carp, horned dace, golden shiner, sucker-mouth minnow, black bullhead, pickerel, top minnows, brook silversides, bluegill, large-mouth black bass and white bass. The arsenic recovered is reported in parts a million as arsenic trioxide.

The arsenic content of the oils from these fresh-water fish is consistently higher than the values reported for marine fish oil, extracted either experimentally or commercially. The total oil of the fresh-water fish carried an average of 11.80 parts a gallon as arsenic trioxide and ranged as high as 160.71 parts a million. About one-fourth of the total arsenic in the fish was either in the oil or was ether soluble and came away with the oil, and three-fourths of the arsenic was insoluble in ether and remained in the tissues.

Oscar Munson's Famous Record Still Holds Up

Oscar Munson, Minnesota custodian of equipment, breathes more easily now that the Pittsburgh football game is past. Oscar, who boasts he has seen every Minnesota home game since 1898, was ill when Pittsburgh came west a year ago, and was able to see only one quarter of play, although he counts that as seeing the game and does not think his record was lost. He is feeling better this year.

Munson's long string of unmissed home games began when the Gophers were still playing on the famous sandburr-speckled field down behind the old West Hotel. The field has been gone for years, and a few years ago the West was torn down. First game in the 44-year string was against Wisconsin. As everyone knows, it was Oscar Munson "retrieving" of an abandoned Michigan water jug after the famous 6 to 6 Michigan-Minnesota game in 1903 that started the tradition of the Little Brown Jug, now admittedly the most famous football trophy in existence. The Little Brown Jug is famous because it is real. Hundreds of football trophies have been "created" by edict to be fought for at certain games, but none has attained the status of the natural jug.

Today's jug is far bigger than the original, which your correspondent has always imagined as of about the size of an old-fashioned home-style molasses jug. Today's is a massive affair, which it must be to have space for the long record of Minnesota-Michigan football games that have been played down the years.

'U' Officers Attend Land Grant Meet

President Walter C. Coffey and six university faculty members attended the fifty-sixth annual convention of the Association Land-Grant Colleges and Universities in Chicago recently.

President Coffey, a member of the association's executive committee, addressed the general session. Theodore C. Blegen, dean of the graduate school, and Clara M. Brown, professor of home economics education, also spoke.

Other Minnesota delegates were Clyde H. Bailey, dean and director of the department of agriculture; Edward Freeman, dean of the College of Agriculture, Forestry and Home Economics; Forrest R. Immer, professor of agronomy and plant genetics; Wylie McNeal, professor and chief of home economics; and Samuel C. Lind, dean of the Institute of Technology.

Dr. Coffey Urges That U. S. Settle Manpower Policy

Continued from page 1, column 2 and mobilized to serve our nation at war and beyond the war.

Thus far these facilities have had only partial, fortuitous and often competitive assignment instead of their full and rightful use in the war effort. Yet the universities contain a most valuable reserve of manpower already screened on the basis of intellectual achievement and promise.

The National Association of State Universities recognizes the lowering of the draft age to 18 years as clarifying the problem and offering the opportunity long sought to define the constructive job the universities can do.

Member universities of this association in placing their plants, personnel and youthful manpower unreservedly at the service of the country trust that a coordinated and authoritative national manpower policy may promptly allocate and utilize these with the greatest possible effectiveness.

Meanwhile the National Association of State Universities approves the adoption of such a program for enlisted training as that submitted to the Army and Navy by the committee of the American Council on Education on the Relations of the Higher Institutions to the Federal Government.

What Educators Suggest

The program to which reference is made in the final paragraph of the resolution involves the establishment of enlisted training corps in colleges and universities to be composed of high school graduates or those with equivalent preparation, who meet competitive standards up to quotas determined by the armed forces—these men to be in uniform, regularly paid and provided with subsistence, thus enabling students, no matter what their economic circumstances, to secure that training which will prepare them to serve their country most effectively.

Is there a doubt now left in your minds that any consideration of the adjustment of college courses of instruction is intimately tied in with the problem of manpower, and cannot be considered apart from it? Is it necessary that I should call to further attention the fact that effective use of manpower is vital to the successful conduct of "total war"? Manpower also means women as well as men. That is why I particularly quoted the headline, "Keep Mothers at Home." Manpower also means boys and girls, too. Actually, the effectiveness of work on the home front, rather than anything else, determines how many we can put under arms and how substantial our contribution of implements of war can be to our allies of the United Nations. And I would underline again that the role of the universities in total war is a crucial one. Therefore, to me it is inconceivable that the government would remove the entire body of young men, beginning at eighteen years, from these institutions, without provision for their continued training, or at least for the training of a substantial portion of those qualified to profit by higher education. The lowering of the age therefore does have one positive benefit: it forces some kind of clarification of the manpower program as it relates to our educational institutions. Up to this point we have had student bodies half subject to Selective Service, half beyond its reach. Now our entire male student population is involved. The resolution of the National Association of State Universities is sound on that point, and I repeat the conclusion that it embraces: "Member universities of this association in placing their plants, personnel, and youthful manpower unreservedly at the service of the country trust that a coordinated and authoritative national manpower policy may promptly allocate and utilize these with the greatest possible effectiveness."

To Eliminate Confusion

It is only along these lines that present confusions can be eliminated. These confusions do not all relate directly to higher education, but indirectly at least, they complicate our educational problems, if for no other reason than that they engender an uncertainty and confusion of mind that disturbs our students and our staff members.

Instead of much-needed co-

operation between all agencies concerned with manpower, there has come to be a highly developed competition between the Army, the Navy, the Marines, and the Coast Guard on the one hand, and the Selective Service System on the other. It is clear now that we should not have allowed this competition to exist in the first place. It is inimical to the best interests of the services themselves. If the name "Selective Service" means what the name implies, it should provide the machinery that would make available the necessary supply of men for all branches of the service—not just for the Army. Whether or not a complete solution of the problem of selection and recruitment of officer personnel could be solved even under the most ideal operation of a selective service is an open question. Certainly the bidding between the various services for officer candidates as well as the rush to enlist in the Navy, the Marines, or the Coast Guard of men about to be drafted into the Army is not a healthful situation. It leads many to the conclusion that services other than the Army get the most promising material. Yet our familiarity with personnel techniques gives us the necessary skill to select and distribute to each service the men who best fit the needs of that service, and likewise to select for civilian needs as well.

Thus, from whatever angle we approach the problem, we eventually arrive at the same conclusion: no matter how we may have failed thus far in developing a unified and integrated manpower policy, the time has now come when action must be taken. An integrated manpower policy will replace uncertainty with certainty, and in terms of this individuals can discover the part they will be called upon to play, and we as institutions can proceed with the plans for effective utilization of our resources. Only then can we really make the adjustments in our curricula that obviously we shall have to make as the war wears on. That is why I have stressed so heavily the importance of the manpower problem.

How to Adjust Studies

But what are the adjustments of curricula that we perhaps should be considering? We cannot here enter upon an outline of detail. We shall have to hold the discussion to broader considerations. Even a cursory study of curricular problems in these critical times reveals two schools of thought. Stated in their extreme positions we have those who would focus entirely on war specialized courses and those who would continue under a plan that might be designated "business as usual."

Those who would focus on war specialized courses would throw aside all the knowledge gained through the experience of past years and would permit, perhaps I should say encourage, the mushrooming of a whole series of new courses in every college, school, division, and department. This would inevitably result in the eliminating of many courses previously offered. No school's faculty could carry the burden of both. And thus the institution's curricula and its purposes would be changed overnight from the known to the unknown.

Changes Are Inevitable

The advocates of "business as usual" might appear to be nearer the truth than the others, yet to follow them would prove equally unwise. No institution can turn a deaf ear to the needs of critical times like these. There will be changes. Adjustments are inevitable. Certain specialized courses may be needed, but basic courses must be continued if students are to have the necessary background for the specialized ones. Unless our educational objective is training only on the technological level, theoretical courses must remain so as to develop in our students leadership on the professional level. Applied research will, of course, be largely directed toward the solution of war-related problems but fundamental research must continue also, for it adds to our necessary reservoir of facts that has brought us the leadership we hold today in agriculture, in industry, in business, and that will guarantee continued progress in the future.

President Ruthven of the University of Michigan in his presidential address to the National Association of State Universities outlined the need for perpetuating, even in wartime, the humanistic values that come with liberal education, to the end that these values may not be lost from our heritage. With the general position he has

stated it, there can be no disagreement. And yet it is obvious to me that probably some compromise with the traditional liberal education must be made if we are to make available for national use the technically trained manpower that our present war requires.

Perhaps my own philosophy concerning this dilemma was best expressed almost two years ago by President Kent of the University of Louisville. That was before Pearl Harbor. Many things have happened since then, but what he said at that time is still true today. Here are his words as found in the *Journal of Higher Education* for January 1941:

"The most important thing for the university to do unquestionably is to continue in the best way possible to see that its regular educational functions are carried on. As new conditions arise they should be faced with courage and vigor to the end that the university discharges its duty to the community and to the nation. Let us renew our pledge to serve the welfare of the men and women, young and older, who by enrolling in the university express their confidence in it. Let us continue to strive for the maintenance of those conditions without which a university is one only in name, but not in fact, an institution genuinely representative of true democracy."

I believe that I like the word "adjustment" better than "change." It sounds less drastic. It conveys a truer picture of the war our institutions of today have met the impact of the war. The adjustments we have made have not been primarily a matter of new courses or even of new curricula. Our normal offering of courses covers about all of the useful subject matter that would be especially needed under wartime conditions. Actually adjustments are mostly those which are needed to meet shifts in program demands. Or they are the sort of adjustments that the intelligent teacher makes from day to day, from term to term, or from year to year in the focus of his courses to meet the changing times.

We are all making that first type of adjustment. We have all had to provide for more students in mathematics courses because of the demand upon the part of the armed services that members of the various enlisted reserve plans pursue certain courses in that particular field. Similarly there have been increased enrollments in chemistry, in physics, and in physical education. At the University of Minnesota we have encountered an accelerated demand on the part of students for courses in typewriting. We have had to provide additional space in order to give typewriting instruction to all of the students who wish it and colleges of the University have authorized credit for such courses. Mechanical drawing is another subject for which there is an increased demand. Many other examples could be given. I could also mention fields in which the demand has lessened—law, journalism, education, to mention only a few.

Some Changes in Focus

The adjustments which involve a change in focus of existing courses are on every hand. Political science, history, and geography could hardly escape from being focused to the war. Could an instructor's course devoted to, "Europe in the Twentieth Century" be the same this year as it was five years ago? Or one on "World Politics"? Or one on "Far Eastern Geography"? Or one in "Agricultural Economics"?

How older materials may be adapted and adjusted to wartime needs is demonstrated in a most fascinating volume that has recently come to my attention entitled "The School of the Citizen Soldier," edited by Lieutenant Colonel Robert A. Griffin and designed for the use of men in the armed forces, to show them what it is they are fighting for. But to me it seems equally important that every citizen should familiarize himself with the type of material presented in this book, and I for one would like to see it used widely as a college text, at least for the duration of the conflict. The value of the book lies in the fact that it takes familiar materials and refocuses them so that new meanings become apparent. One sees the war from a new vantage point. This book illustrates what I believe we must do widely with the materials of our college curricula.

This brings me to the point where I should like to make a few generalized observations. First, we must make haste slowly in shifting courses or in planning our

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research programs. One institution, for example, outlined and offered a new course in condensed chemistry. Later it was discovered that industry could make no use of the individuals who had received that particular training. Such a result is tragic. Industry receives no benefit from such an ill-advised course and the reputation of the institution suffers.

Second, we must be realistic and at the same time opportunistic. By that I mean that we must be able and willing to shift and make curriculum adjustments when and only when the need is clear and has been definitely established. No one has sufficient vision at this time to prepare fixed blue-prints. It is not surprising that the present emergency brings forth all sorts of plans for revamping our entire system of higher education. Plans which failed to gain support when carefully studied under less confused conditions are now dusted off in the hope that they will be adopted under a war guise. We must beware of this. It is not continual tinkering with the catalog that is needed. Today, more than ever before, what one needs is a poised mind capable of making wide decisions when a real need is clearly demonstrated. In fact, I would go so far as to say that the major adjustments now called for are not so much external, in the form of tinkering with our course offerings, as they are subjective, involving our own state of minds. In the face of war pressures, enthusiasms, and even hysterias, we must develop that quality of mind that makes us willing to change, and adapt as change and adaptation are called for, but at the same time able to resist the pressures of immediacy and hasty action.

A Danger to Escape

Third, we must, in making adjustments, escape the danger that is involved in throwing out the baby with the bath, in dropping old and tested types of education. I would be the last to defend the rigidities of our educational system, or to proclaim our curriculum as the acme of perfection. But our educational program has been built through the years, slowly and deliberately, in response to the changing needs of a democratic society. Society can ill afford to tear down for the duration all of the tested disciplines upon which has been built the strength of our democracy and to substitute therefore a narrowly practical curriculum stressing only military measures to meet the present emergency. It was this aspect of the problem that President Ruthven stressed. The same idea has been expressed by Professor Eckhardt, who says we need "a permanent ideological consciousness of a better world order in the future." And it seems to me that we will avoid a repetition of the events of the past decade, we need to continue our departments of philosophy, history, sociology, political science, music, the arts, and the others even though the time comes when there is a falling off in the demand for such courses and substantial subsidies from the state are required for their maintenance. But, reverting to my earlier point, the focus in these departments may need to be changed.

I hope that I have made it clear that, in my opinion, much that we do now will be setting a pattern for the future. While the immediate adjustment and the war are important, the post-war period is of even greater importance. Charles A. Beardsley, when president of the American Bar Association, expressed what I have in mind when he said, "A civilization might be destroyed by unpreparedness for peace as well as by unpreparedness for war." We cannot take such a dangerous risk as to be unprepared. We must and we will think and plan for the post-war period. Planning for the future necessitates tying to the past—in curricula as in other things. Just as the colleges and universities can render unique service in providing the various types of pro-

Farmer Regent States Views

Continued from page 3, column 4 close race. We must recognize the obligation of the Land Grant Colleges to provide such training and inspiration as will direct a much larger percentage of students back into the rural communities to carry on as farmers. The Land Grant Colleges must recognize the fact that such training can be provided in a shorter period of time, not necessitating the requirement of a degree. That, I feel, is one of the big jobs ahead for all of the Land Grant Colleges of these United States. Then there is the problem of finding new uses for farm products. In that field, the surface has not even been scratched. Private research is, of course, doing its share, but it will never take the place of research in our public universities, for quite obviously, private enterprise cannot be depended on to devote its discoveries to the public good. They are naturally in it for profits. You have seen evidence of that even during this present conflict. The farmer must be given some of the benefits that accrue from new discoveries.

In line with this, let me also add that there is a feeling among some farm people that some of those in the chairs of research and teaching in Land Grant Colleges have lost the common touch and fail to be conscious of the fact that they are in large part in the positions where they find themselves for the purpose of serving farm people and of stimulating and providing courageous leadership toward that end. The farmer, of course, does not expect that the men in the Land Grant Colleges should go out into the field as organization workers, but the farm people do expect that these men in teaching, research, and extension in the Land Grant Colleges will direct their efforts toward the establishment of such facts and conditions as will serve the greatest good for farm people on the farm. Here again I say, we must have men who are sympathetic, capable, and courageous. That, of course, is true whether it be in an educational institution, in a farm organization, or in government itself.

Finally we should not forget that all universities, whether they be Land Grant Colleges, academic colleges, or others, should endeavor to direct their teaching efforts towards a greater understanding between groups and a greater capacity on the part of those whom they train in tolerance, fairness, and understanding. Leaders in education must not forget their primary objective.

Professional and technical training needed in the prosecution of the war, so they as scientific and cultural repositories can draw on all of the knowledge and wisdom of the ages in doing their part in preparing for the better world which must be insured when the present conflict ends. Thus will we protect the world against the danger of which we were warned in a recent broadcast by Dr. Ezequiel Padilla, Mexican Foreign Minister, when he said:

"When war ends, a wave of misery and collective suffering will again flood this earth, and, if foresight does not prepare the channels to dispose of this danger with generosity and justice, Americans and all mankind will run the risk of passing from the catastrophe of war to the catastrophe of peace."

I recognize that I have not been as specific as you might wish in a discussion of the problems of curriculum change. Perhaps it seems as though I had made a flank attack instead of a frontal assault. If so, my only defense is that I followed the dictates of strategy. Thus have I attempted to soften the defense to the end that others, perhaps in more strategic positions, can go forward. I can only trust that my maneuver has been successful.

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New Research Projects Come To University

Cancer Professorship Set up in Medical School; Hormel Institute Created

While a member of the Board of Regents (see col. 2) called on the state to give better support to scientific research at the University of Minnesota, two new funds for the support of research were accepted by the board and by President W. C. Coffey. One was the George Chase Christian professorship in cancer research, already referred to; the other, creation of The Hormel Institute as a unit of the Graduate School, to which funds for the support of research will be given each year by The Hormel Foundation, a charitable, religious and educational instrument located in Austin, Minn.

The Hormel Institute will support both pure research and researches looking to the solution of industrial problems, in which respect it parallels a number of funds for research now received annually by the university from industrial concerns covering a wide range. The conditions under which the new researches will be made are similar to those now existing, with publication of findings agreed upon and provisions for the licensing of manufacturers in case patentable discoveries or processes are developed.

George Chase Christian Professorship

Material expansion of a program of research into the causes of cancer now under way at the University of Minnesota was made possible when the Board of Regents accepted a gift of \$5,500 a year for five years from the Citizens Aid Society of Minneapolis to support what will be known as the George Chase Christian professorship in cancer research. It will be the first professorial chair in the University of Minnesota Medical School to be named for an individual.

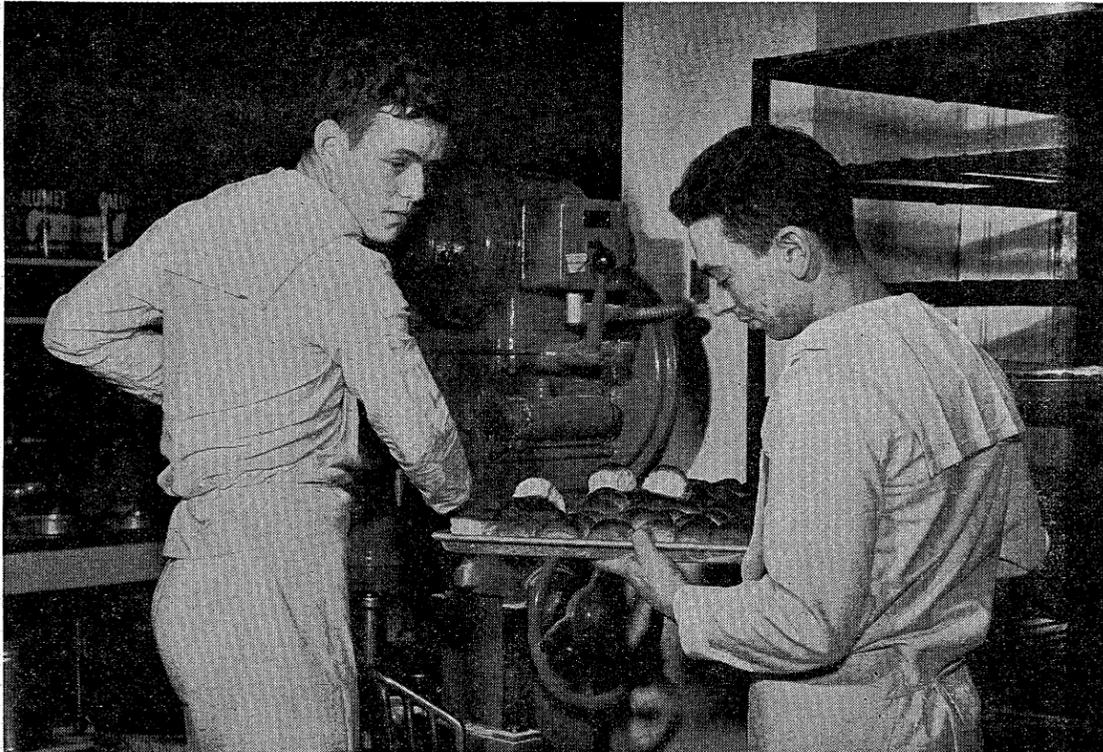
On recommendation of Dean Harold S. Diehl and President W. C. Coffey, the regents appointed to the post Dr. John J. Bittner, now associate director and vice-president of the board of directors of the Roscoe B. Jackson Memorial Laboratory at Bar Harbor, Maine, of which institution Dr. Bittner has been a staff member since 1930.

Dr. Bittner will increase to three a team now composed of Drs. Maurice B. Visscher and Robert G. Green, who are studying the etiology of mammary cancer in mice. Studies by Dr. Bittner have shown that young mice born to a high cancer strain mother are likely to develop cancer if nursed by the mother, whereas if taken from her and nursed by a mother from a low cancer strain they are quite likely to be cancer free. Three factors in the etiology of mouse cancer on which he and Drs. Greene and Visscher have been working are that cancer is transferred by an agent in mother's milk, that mammary gland development is stimulated by estrogenic hormones, and the likelihood that a virus agent is present in advance of the cancer development.

Dr. Bittner is credited with much important early work in this approach to the cancer problem. An experiment published by him, Green and Visscher indicated that the agent of the milk of females of cancerous strains is a colloid of high molecular weight and may be a virus.

Dr. Bittner will remove to Minneapolis with his family as soon as housing and laboratory arrangements can be made. Born in Meadville, Pa., in 1904, he was graduated from St. Stephens College in 1925 and in 1927 became a research assistant at the University of Michigan, receiving his Ph.D. degree there in 1930. He has won many research honors including the Alvarada Prize of the College of Physicians, Philadelphia. In 1940 he delivered the George Chase Christian lecture at the University of Minnesota. The Cancer Institute in the University hos-

Rolls Not All at Sea When Oven Is Hot for Sailors



A detachment of U. S. Navy enlisted men enrolled in a Cooks and Bakers School at the University of Minnesota helps make sure that Jack will sail with a full hold.

University Engine Ready to Steam When State Provides Research Funds

Regent Says Industrial Future Depends on Scientific Initiative Now

Research is the means by which new industries will be developed in the state of Minnesota to supplement those we have and replace those we are inevitably losing as the raw material and marketing conditions change, James F. Bell, Minneapolis industrialist and member of the Board of Regents, told alumni of the Institute of Technology at their annual dinner. The meeting was in Coffman Memorial Union.

Harry E. Gerrish, Minneapolis, who introduced the speaker, was reelected president of the Institute of Technology Alumni at a business meeting. George M. Shepard, St. Paul city engineer, was reelected vice-president and Donald Heng, secretary-treasurer.

Outspoken support for the projected Mechanical-Aeronautical Engineering building, which the Regents will ask of the forthcoming legislature, was expressed.

Mr. Bell's address was as follows:

Research and State's Future

Just how I was induced to talk to you about research is not clear. As a matter of fact, the same might be said about my talking to you at all! I have remarked to all and sundry who have sought me to speak that, as a young man I was brought up in the school of addition, division and silence. Thus voice was not a part of my curriculum. However, the necessities of later years have led me astray from early paths. I cannot say that it has been with any success on my part or satisfaction on the part of my listeners! My words have fallen too often on barren ground,

and it is a memorial to the late Mr. Christian. The Citizens Aid Society has helped support of cancer research for many years and donates \$10,000 annually to the Cancer Institute of University hospital.

In the new Minnesota team Dr. Bittner will approach the cancer problem as a geneticist, Dr. Visscher as a physiologist, and Dr. Green as a bacteriologist with a special interest in viruses.

Hormel Institute Created

A new research effort will be started at the University of Minnesota following acceptance by the Board of Regents of the Hormel Institute of the University of Minnesota which will be a unit in the Graduate School.

Negotiations for its establishment have been carried on over a period of several weeks between

or so it seemed to me, and noticeably so when speaking on this very subject when I besought the support of the State Legislature. However, the President of your Association—our good friend Mr. Gerrish—insisted that I tell you tonight some of my thoughts presented at that time.

Experience has taught me that it is very easy to get into things. It is the "Getting out" part that bothers me! My present dilemma in respect to the latter reminds me of an occurrence during World War I. During July of 1918 I went abroad with Mr. Hoover. While we were in Paris, he asked me if I would go down into Italy and act as his deputy. Among the many invitations I received while there was one to dine with the king at his field headquarters, which were then at Padua. The hour appointed was 6:30. Upon arrival, I was received by the chamberlain, from whom I made inquiry as to the matter of etiquette. He started off at length on how I got in, but I interrupted him to say, "Getting in doesn't bother me. How do I get out?" He went on to explain that shortly after dinner, about 8:30 to be exact, the dispatches would come in from the front and the king would indicate a sign of departure. This seemed reasonable enough.

As I anticipated, I had no trouble getting in, and things went off nicely. At dinner the king and myself were on one side of a long table, with his staff (in full dress uniform) on the other side. The meal was simple. The speed with which it was consumed was prodigious. Trying to answer questions left me little time to eat. When the king had finished, the plates were removed, often before I had a chance to taste the food!

Following the dinner, we retired to a corner of the room, where a table was laid out with cigars and cigarettes. The staff stood stiffly and silently on the other side. The conversation continued. The king reclined against the edge of the table. I stood. At 8:30 I smiled in contemplation of the anticipated dispatches. But none came. Nine o'clock arrived. No signs. Nine-thirty. Still no signs. Standing became somewhat painful. At ten, I was on the verge of exhaustion. At 10:30 I suggested that I was trespassing too greatly on his majesty's time. His only reply was, "You haven't anything else to do. Why not stay around a while and talk!" At eleven, the rate of shift of body weight from one foot to the other was approaching the frequency of radio transmission. Meanwhile, the staff were looking daggers—I could feel their mental

School to Train Women for New War Positions

To help meet the immediate demand for women who must take some of the places of men in war industries and to help increase production during the next twelve to eighteen months, the School of Business Administration, University of Minnesota, will start in January giving four special courses of training. The courses will run through three quarters and each course will be repeated at the start of each quarter, so that applicants will always have a chance to begin without waiting. The courses will be open to women with the requisite aptitudes and abilities, regardless of preliminary academic training.

Dean Russell R. Stevenson announces that the courses will prepare women for positions in industrial production, positions in industrial relations and personnel departments, positions in accounting and positions in office management and secretarial work.

Students will be admitted on a special basis, but those who may wish afterwards to go on to a degree may submit their records in these classes for consideration by the school.

The announcement by the School of Business Administration predicts that "in this group will be a great many who will occupy positions of a supervisory and administrative type."

The university term "three-quarters" based on divisions of the college year, amounts in fact to nine months of study, which is the time, Dean Stevenson believes, in which emergency preparation can be given.

stiletos in my back! At eleven-thirty, I threw aside all etiquette, thanked his majesty for his courtesy and stated that I would not permit him to allow me further inroads upon his time. He remarked, "Oh, very well, if you must go."

As a conversationalist he certainly held the all-time record as far as I was concerned. My remarks to the chamberlain on the way out in respect to his methods of "getting out" were something not exactly classical!

From that time on, I have given more thought to "How to Get Out" than to "How to Get In"! The only way to "get out" of the present instance is to tell you something, but I promise I won't subject you to any such kingly experience.

It is not easy to talk on a sub-

War Stimulates Campus Study Of Mathematics

New Pre-Meteorology Set-up Accepting Applicants for March 1

STUDENTS WILL ENLIST

Mathematics Department Gets More Calls for Trained People Than It Can Fill

Rapid growth of enrollment in mathematics courses at the University of Minnesota, which has already led to a growth of 50 per cent in classes on the campus, was further stimulated last week by announcement of a new pre-meteorological course on behalf of the United States Army. Enlistment will be required for admission to the course and students will receive money for tuition, board, room, books and living allowances.

While the University of Minnesota has not yet been designated as a meteorological training center, it is expected that it will be, Prof. Raymond W. Brink, head of the department of mathematics said, and whether it is or not, student applications will be accepted here for their training at whatever institution they may be sent to.

Another strong evidence of the swiftly rising demand for mathematics is seen by Prof. Brink in the repeated inquiries he has received for women with mathematical training. Women are in particular demand for statistical work in connection with production control and standardization of production in war plants, he said.

Extensive mathematical training is also required for aviators, for those young men who are planning to become naval officers and for many other categories of young men and women who are seeking special training in a time of national crisis, and these demands are reflected in the record enrollments in mathematics classes.

Dr. Brink explained the meteorological course in more detail by saying that for several years a high class training program in meteorology has been conducted at five big universities, namely, Chicago, Massachusetts Institute of Technology, California Institute of Technology, UCLA and New York University. Up to now it has been possible to recruit for these courses students with fine records in mathematics and physics, but as the demand has stepped up it has been necessary to provide additional training to fit men to enter these advanced or "A" courses. It is to that end that the new pre-meteorological, or "B" courses are being set up. On the Minnesota campus a rush to obtain application blanks has developed. A further "C" program of a nature not yet announced may also be arranged.

"It is now proposed," he said, to institute at several additional universities special six-months (B) courses that will provide the basic foundations for professional training. Emphasis in these pre-meteorological courses will be on mathematics and physics.—The men accepted for the pre-meteorological work will be enlisted in the Army Air Forces and assigned to designated colleges for special instruction. As enlisted men they will be put in uniform and will receive \$50 a month plus a living allowance. Their tuition at the training center will be paid, and upon successful completion of the pre-meteorological course the students will be appointed cadets and sent to other universities or to a replacement center for the professional meteorological training, at the conclusion of which they will be commissioned."

The final product will be engaged in meteorological work, guiding the Army fliers by means of weather data. The training will also have post-war civilian value.

Explaining the statistical problems for which women mathematicians are being sought, Dr. Brink gave as an example the large number of tests that must be made to determine how a fuse should

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(Continued on page 2, column 4)

Higher Education Marshalls Forces to Meet War's Challenge

Four challenges of major scope face universities and colleges today, Dean Wesley E. Peik of the College of Education, University of Minnesota, told members of the Association of Governing Boards of State Universities and Allied Institutions during a symposium in the program that body recently conducted in the Center for Continuation Study. Dean Peik spoke as the representative of the National Association of Colleges and Departments of Education. He said:

Four challenges of major scope face universities and colleges now.

(1) We must contribute leadership and manpower from 130,000 staff members, from 900,000 male students and from 600,000 women students. We must contribute all staff members whom we can spare for research, for expert service, for leadership in civilian and armed tasks in an expanding military enterprise, where the recruits of the nation must be matched with leadership. The country needs our institutions, and it is a serious problem of government and of educational administration to see to it that full use with little wastage, is made of ability where it can best serve.

From 1,500,000 students we must be prepared to contribute substantial numbers. Higher institutions have abilities of the higher brackets whose youth and availability, whose training for leadership on and off the campus, constitute a major resource for the war. The colleges and universities of the country, therefore, should be completely reconciled to meeting these losses of personnel. The supreme effort ahead against heavy odds requires it.

(2) Higher education must lay foundations of attitudes, knowledge, and understanding to win the final victories for national and world democracy after the peace. This education of talented youth will be important for all of the decades of the rest of this century, but particularly in the decades immediately following the war.

(3) We shall have to get ready for an immediate post-war readjustment and expansion of higher and of secondary education. Educational expansion and readjustment have been the aftermath of every American war since 1812, which accentuated the movement for free, public, and universal elementary education. Wars have accelerated tardy educational trends and have started many new ones. Democratic ideas prevailing, for example, after the War Between the States, gave us rapid growth in the number of state and independent colleges, universities, and normal schools. It brought us co-education, electives, non-sectarian control, acceptance of new subjects, new technical education, and graduate study.

(4) We must preserve as a war and peace measure these higher institutions for the educational tasks which lie ahead. We must preserve with them continued recognition of the higher values of scholarship, idealism and spirituality along with a still greater acceptance of curriculum adjustments which face the practical realities of a rapidly changing world, in which trained expertness and better citizenship alike are needed.

Requirements in Conflict

Higher education is making progress toward meeting these four challenges. They are difficult because they are in conflict. We are doing most with the contribution of expert service and man power toward the greatest army any democracy has ever mobilized from practically nothing but raw material. We are not yet so far along in planning for post-war education and institutional survival. The man power and plant facility contribution must come first, but other agencies than education will do even more. The other of the challenges to higher education are more distinct and basic to education. These are more in line with what colleges can do best. What shall we do about this conflict of challenges? Where is the wisdom to ascertain how far to go with each, particularly with the first demand? How intensively must we work on the others even before victory is assured?

As one representing the colleges and departments of education which of necessity are in close contact with the trends of public education, may I engage in the doubtful role of making some predictions on what kind of post-war evolution, due to social pressure, will take place in public and independent higher institutions and also, in a secondary education?

You will note that I am speaking about the third of the four challenges—preparing for post-war educational reconstruction to meet the needs and demands of social changes that likely will follow a victorious consummation of the conflict.

The Post-War Problem

(1) We shall have the task of the education of the returned soldiers, probably with subsidies. We should emphasize now to students of secondary and higher education that they must return to that place in their education which they left as they responded to the country's call. As they return, we shall have a very large group of older than normal young people in high schools and colleges by from one to perhaps five or six years, to recondition from war to peace. We must not as colleges accept the high school task. We shall have to prepare college level students for new specialized vocations, for the learned professions, and for a high type of citizenship and leadership. This period of continued education will decrease post-war unemployment. It will facilitate post-war adjustment for business, industry, and agriculture. It will counteract post-war cynicism and unrest. It will help to decrease the so-called "lost generation" such as followed the last war. To this end we must make scholarships available to ex-students as subsidies, good in all public and independent institutions. We must have ready for them the curricula they will need. At age 45, it may not make much difference if they did enter their life work later by two to seven years, but it may make much difference whether or not they completed their education and whether or not they were occupied. To serve this group our colleges and universities will have to begin to plan well now, and to do so on a state-wide and nationwide scale. Let us not repeat the mistakes of the last world war on this score.

(2) Relatively higher incomes for the lower economic groups after this war and still greater use of machines will demand a longer period of general, pre-vocational, and vocational education for more youths from the ages of 16 to 21. This is in the picture to prevent large numbers of youth from unemployment, and to satisfy the passion of a growing number of parents, then able to do so, to provide more, higher, and better education for their children. This American trend will not stop.

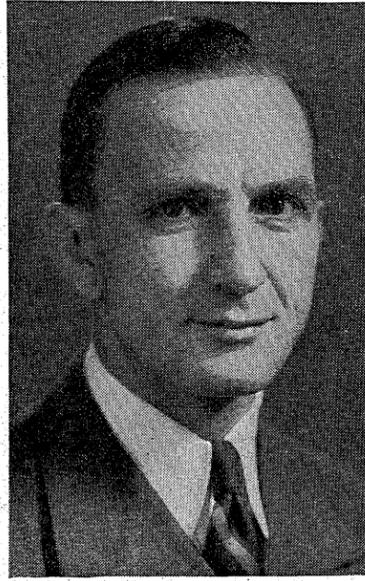
(3) The junior college, public or independent, separate or as a part of a larger institution, will grow. Vocational education in regional vocational schools, in terminal junior college curricula, and in the 4, in 4-2-2, or 2-3 plans of arts colleges and universities, outside of professional schools, will serve best the larger social pressures we are certain to experience. The humanities should remain in the general educational picture, but they will suffer unless they turn more to the realities of the present and aim for an understanding and interpretation of life. The sciences and social studies, no doubt, will continue to be in the ascendancy. Fine Arts I believe will prosper more and will be accepted as respectable just as in turn the modern languages, sciences, the social studies, had to win respectability in the last century in competition with classics, the classical languages, mathematics, religion, and philosophy. The needs of a democratic society for higher learning by more people, rather than the consideration of college standards as such geared up to the superior only, will prevail. This will mean a better adjusted and classified education for all through fourteen years of schooling. In the process, the best possible standards for the most talented must not suffer at the college level as I believe they have suffered somewhat the secondary level in a corresponding movement following World War I.

New Group Pressures

Let us not depreciate the pressures to come from lower income groups, then grown more prosperous, for more and more functional higher education. Our ability tests show that there is more talent buried and undeveloped among them for development than is found in the upper economic groups because there are so many more of them. The fight for democracy which we hope to win will require higher education for more, if democracy as a way of life is to compete with fascism, i.e., government by the selected, educated elite instead of by the masses.

(4) We may certainly expect to

Nordly Becomes Basketball Coach



Dr. Carl L. Nordly

Dr. Carl L. Nordly, associate professor of physical education and teacher of advanced courses, has become also basketball coach, succeeding Dave McMillan, who now coaches baseball. Nordly, who has been at Minnesota for seven years, was formerly coach at Carleton, where he won 11 athletic letters during student days. Earlier, he had been a member of a famous Red Wing basketball team, and had coached at Rochester and Northern Illinois Normal.

expand health instruction, our health services, and physical education for fitness and for recreation. World War II will emphasize the lessons already learned in part from World War I on health, morale, and mental hygiene. Medicine will be much in the ascendancy, I have no doubt.

(5) The public will also require a more competent teaching personnel. Its training will become five years in length for high school teaching and four years in length for elementary teaching within the next two or three decades. Arts colleges and universities must prepare to take teacher education more seriously. The education of the teacher is a far more important task in the social evolution that lies ahead than it has been in the past. Hitler is already setting up teacher education institutions in conquered countries to teach fascism as a way of life. If we are to succeed with democracy the better preparation of more teachers for the task will become one of our most important services and concerns. The entire institution, instead of only a department or college of education, must take hold of the problem. Forty per cent of 1,100,000 teachers are prepared in our colleges and universities. The preparation is not nearly as good as we know how to make it. The general education of the teacher is the most important problem in the total pattern of a teacher's training just now.

Some Other Trends

Time will not permit even a brief presentation of other trends that are bound to come. Some of these are:

(6) Greater development of the guidance function.

(7) Greater competition with other governmental agencies for funds with the prediction that during the long range period, legislatures will support education fairly adequately, first of all.

(8) The movement for scholarships to the most capable in low income groups will grow.

(9) These considerations I have emphasized as challenges because they must be planned for now. They imply what I will name as a ninth trend, the reexamination by each institution of its objectives, its resources and the curriculum set-up to attain these objectives. The war will likely last two years, but it may also come to an end abruptly within a year or two. It behooves higher education to contribute much to direct military victory as the first challenge, but we must not overlook the continuing social functions of education to provide for the preservation of our institutions. Post-war service and post-war social progress is a war measure. Our President, who faces the realities of the military struggle more directly than perhaps any other person, has said "What the schools do may prove in the long run to be more decisive than any other factor in preserving the form of government we cherish."

Finally, let the finger of history not point reproachfully to universities and colleges of today as be-

Worker Contact Man Selected

The University of Minnesota recently took one of the major steps promised toward settlement of labor difficulties among non-academic employees when the Board of Regents, on recommendation of President W. C. Coffey appointed, Hedwin C. Anderson, Minneapolis, personnel director for the non-academic group.

Anderson is at present assistant personnel manager of the Northwestern Aeronautical corporation, Minneapolis, manufacturers of gliders.

Anderson has had experience in personnel work for more than ten years, having been employed in the University Testing Bureau, University Employment Bureau, The Dayton Company and in related work for the state of Minnesota.

In negotiations following the one-day strike at the University of Minnesota on Oct. 3, the employees, represented by Public Building Service Employees Local 113, asked appointment of an official on the campus to whom they could take their problems directly and this was promised in negotiations in which Gov. Stassen took part.

War Stimulates Math. Studies

(Continued from page 1, column 5)

be set to govern the bursting of a shell, or the tests required in a factory to gain control of the uniformity of a mass-production article. Both of these require high-class mathematical calculations in the field of statistics, he said.

Aviators, he explained, may not have time to make many mathematical computations when they find their plane off-course, but in learning to understand the equipment they must use mathematics is absolutely essential, and there will also arise times when rapid calculations by the navigators must be made during flight.

Secondary schools, in which a great increase in emphasis on mathematics has recently taken place, have a shortage of teachers for that subject, as for other sciences, Dr. Brink said, but few students are at work in the colleges to remedy that condition, a main reason being that industrial positions offer more attractive pay.

"For some years before the war there was a tendency to divert high school students from mathematics into subjects which student advisers thought easier," he said. "This created a real shortage of men properly trained in mathematics and the other sciences, a situation that became very apparent after the war began. Because students were not encouraged to take mathematics in high schools there was not need for any large number of trained teachers and a teacher shortage developed which is now making itself felt. The result, unfortunately, is a shortage both of men trained in mathematics and of capable mathematics teachers for the secondary schools."

To meet the growth in attendance at University of Minnesota classes the size of classes has been increased somewhat and some increase in the load per teacher has taken place. The quality of the teaching, however, has been rigorously maintained.

Dr. Brink pointed out that some of the best teachers in the university in the fields of mathematics and physics will be assigned to teach the new pre-meteorological courses. They will be started March 1, 1943.

ing too conservative and not sufficiently sensitive to social changes and to the adjustments we shall ultimately have to make anyway in the interests of democratic higher education. The history of modern languages, the sciences, the social studies, the fine arts as subjects and of co-education, election, liberalized entrance patterns, health services as movements, and what-not, show that we have traditionally resisted too strongly the moves that were needed and that ultimately came. After this world war, we may have less time in a rapidly moving machine age to improve education as an agency for democratic social progress. For that reason the contribution of our colleges to war education and reconstruction is as great as our more obvious contribution to the winning of the victory.

Twin City high schools which introduce military drill as a part of the curriculum will have the assistance of University of Minnesota Naval ROTC cadets.

Research Key To State Future

(Continued from page 1, column 4)

ject with which you are not intimately identified. I could not hope to classify myself as a researcher. At least, not in the usually accepted sense. My business association would designate me as in the executive class.

But, every man is a researcher . . . searching into the unknown for some new truth, some new way of doing a thing in an easier or better way, contributing to the advance of civilization regardless of his field.

Our Stages of Development

We here in the United States have passed through many distinct ages—that of discovery, that of pioneering, of agricultural development, industrial development, and now in these latter days we have entered upon the age of scientific development. I ask you to look back just a few short years, to the period between the last and the present wars. Consider the changes . . . the changes in our pattern and plane of living. The things that have been conceived and brought to fruition, the benefit of which we now enjoy.

But before we get into the details of all these manifold changes and benefits, let us look back to what has taken place in our own State of Minnesota during these various ages. There were the first discoverers who reached our interior fastnesses, who looked upon the land in quite different aspect from those who were to follow. For the most part, these early flagbearers were led by the urge of adventure, but they were not unmindful of advantages to be gained from natural resources that could be easily secured and easily transported. Of gold and minerals there was little if any evidence, but the pelts of wild animals offered wealth which could be extracted from our land.

The years rolled by between the time of these early adventurers until the migration of those who saw it in terms of soil wealth. Real recognition of soil and timber did not come until the close of the Civil War, when free grants of land to returning soldiers attracted many. However, generations were to pass before the true wealth was to be revealed. Finally came its realization, and its appraisal as a land of boundless and inexhaustible wealth. But, no wealth is inexhaustible, as we now realize.

However, in those earlier days, those who came to discover and to develop, found wealth. Hardy men, these early pioneers. They found great potential wealth, and they developed it. They reaped the reward of their efforts and they spent with a prodigality and liberality that is characteristic of almost any new development where wealth comes in abundance. They were public-spirited men. They shared joyously, extravagantly, the wealth they had obtained. They were liberal contributors to all civic enterprises which would enhance the reputation of their community. They built themselves increasingly splendid homes. Hospitals. Libraries. Schools. Universities. Industries. Railroads. All sprang like magic from the bounty which they poured out.

This was not an unusual phenomena. It has occurred time and time again. I saw it within recent years—in Oklahoma. The presence of oil had been indicated. Here were great opportunities, hidden wealth to be explored and developed. People came from all parts of the nation. The place became a beehive of activity. well-drilling outfits sprang up like wild-fire. Oil derricks formed a veritable forest on the landscape. Drilling on the lawns. Drilling in the streets. Even the sanctity of the Governor's residence had been invaded and there were three drills on gubernatorial premises. The new Capitol, which had just recently been erected, was lost among new exploring structures.

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Alumnus Gets High Post

John H. Ray, former resident of Minneapolis and graduate of the University of Minnesota, has been elected vice-president and general counsel of the American Telephone and Telegraph Co., which he has served many years as a member of the legal staff.

Two New Gases Discovered

Two new cosmic gases have been discovered in the tail of the comet Cunningham by University of Chicago astronomers.

New Research Projects Set

(Continued from page 1, column 2)

Jay C. Hormel of Austin, Minn., and officers of the university.

Funds for support of the institute will be appropriated each year not later than April 1 by The Hormel Foundation, which exists under the laws of Minnesota for religious, charitable, scientific, literary and educational purposes. Sums to be given may vary from year to year, and the arrangement may be terminated on due notice by either party to the contract.

Purposes of the Institute as stated in a memorandum of agreement are that it shall be under the auspices of the University of Minnesota, for the "promotion of education and research in plant and animal production and utilization, including the relation of animal products to disease and the treatment of disease, animal diseases, food technology, nutrition, tree culture and wood technology, and principles and techniques of management in relation thereto, and such other subjects as may be mutually agreed upon."

The agreement sets forth that The Hormel Foundation, source of funds for The Hormel Institute, possesses "certain income-bearing securities and expects from time to time to receive additional income-bearing securities and real and personal property, particularly the home property of Jay C. Hormel, including his residence and adjacent buildings and certain land now devoted to forestry and agricultural purposes." Income from the securities and use of the land and buildings is involved in the purposes of The Foundation and may be devoted to uses of The Institute.

Work of the Institute, the agreement says, may be conducted either at Austin or at Minneapolis, or elsewhere.

Under supervision of the Graduate School, of which it becomes a unit, The Institute will be governed by a board on which both the university and The Hormel Foundation will be represented.

The agreement is drawn in such a way that others who may desire to support research by making gifts to it may do so.

Any patents or discoveries arising in the course of researches in the institute will become the property of the University of Minnesota, held by it to promote education and research. If these discoveries have commercial value the university will be obligated to grant non-exclusive licenses for their use to qualified American manufacturers unless the university deems the public interest would be best served by some other form of license. Free licenses may be granted to the United States or to municipal subdivisions thereof.

It is further agreed that The Foundation may, with consent, transfer to the university any or all of its assets, real or personal, which are needed, used, or constitute a source of funds for the support of the Institute.

'U' to Instruct Cheese Makers

A one-day short course for cheese makers will be offered by the dairy division of the University of Minnesota on December 16. Purpose of the course is to help manufacturers make a product of high quality at a time when cheese will probably become one of the nation's most important sources of animal protein. Special attention will be given on the one-day program to subjects directly related to cheese quality. Grading of cheese will be discussed by B. J. Ommodt of the Agricultural Marketing Service. A grading practice period will follow, during which Harry Wilson of the U. S. Department of Agriculture will examine cheese made from pasteurized milk in Minnesota factories and will offer suggestions for improvement.

Mrs. Nohavec Named On Music Committee

Mrs. Hazel B. Nohavec, instructor in music education, was re-appointed recently to serve on the national committee for teachers' education for the National Music Teachers association.

Mrs. Nohavec also is a member of the teachers education for the Music Educators National conference, and is the only person in the United States on both groups.

'U' Is Ready To Help With New Draft Plan

The University of Minnesota stands ready to do everything it can to further the new selective service program of the United States, President Walter C. Coffey announced after President Roosevelt signed the act lowering the draft age limits.

"We believe," he said, "that our technical departments, such as engineering, chemistry, physics, mathematics, medicine, dentistry, pharmacy and nursing, some of which have already shown gains this year, will continue to have plenty to do. It is my opinion, also, that other important areas of instruction will be busy, and it is our sincere hope that they will be."

"My great hope is," said President Coffey, "that young men in the 18-20 year class will also be assigned back to the university campus for training in the College of Science, Literature and the Arts, which undoubtedly is prepared to give instruction in many subjects that have a bearing on the war effort. Furthermore, we on the campus trust that the government will find programs in which such colleges as business, law, agriculture and education, can make themselves useful. And we also anticipate that young men will be assigned to the liberal arts colleges of the state."

Dr. Coffey called on young men in the new age group to stay in college until they learn what the government is going to do.

"The thing for youths to do now," he said, "is to hold to their present classes and programs, remaining in university or college until they are told by Washington how, when and where the new training program is to be developed."

President Coffey also pointed out that another duty of the University of Minnesota will be to develop promptly new courses that will train and prepare women students for some suitable share in the war program. He called attention to the recent appointment of a committee of the Arts College to outline such courses for University of Minnesota women.

Williamson Helps On Army Program

E. G. Williamson, dean of students is in Washington, D. C., where he will aid in the setting up of a plan for selecting new inductees to be sent to college and university campuses for further training.

Dean Williamson will act as consultant to a committee of the American Council on Education, which will organize the plan in cooperation with the army and possibly the navy.

Men will not be sent to colleges until they have been inducted and become regular members of the army, Dean Williamson said. A certain number will then be selected by the army and returned for specialized training.

Dr. John G. Darley, director of the testing bureau, will be acting dean of students while Dean Williamson is away.

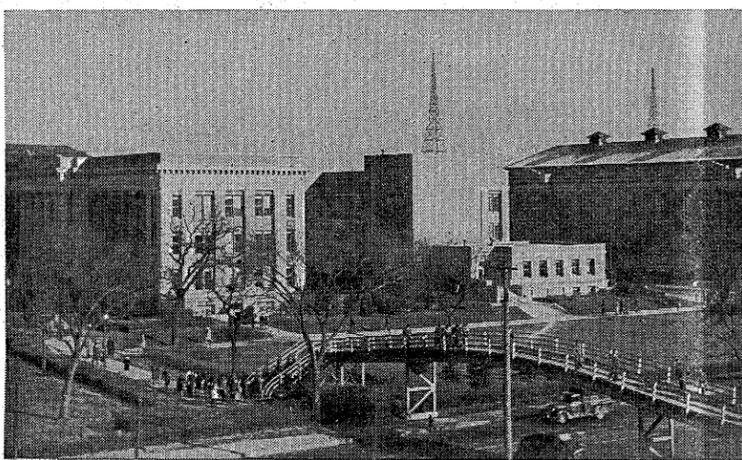
Center Repeats Dentistry Course

Processes of dental restoration made possible by recently developed resin plastics have created such a new situation in dentistry that a course in their use, conducted in the University of Minnesota's Continuation Study Center in October had to be repeated by request. Lessons, lectures and demonstrations took place Nov. 12, 13 and 14, under direction of Dr. William F. Lasby, dean of the Dental School, and J. M. Nolte, Continuation Center director. The faculty comprised, besides Paul Felt, chemist of Brown and Bigelow, St. Paul, Drs. Carl O. Flagstad, Robert O. Green, Joseph M. Little, Alfred A. Pagenkopf and Douglas H. Yock, all of the University of Minnesota dental faculty.

New Duty for Dean Willey

Dean Malcolm M. Willey has been made a member of a committee of the North Central Association of Colleges and Secondary Schools to review that organization's schedule of library facilities in universities, one of the instruments whereby the association rates the institutions. Dean Willey recently attended a meeting of the committee in Chicago.

Buildings of Three Colleges Shown



Left to right one may see Vincent Hall, home of Business Administration, the end of Murphy Hall, home of Journalism, and the Main Engineering building. Radio towers are on Electrical Engineering building, not seen.

President Asks 'U' to Refresh Manpower Action Lawyers on Tax

As the universities of the United States more and more place their plants, personnel and youthful manpower unreservedly at the service of their country they trust that a coordinated and authoritative national manpower policy may promptly allocate and utilize these with the greatest possible effectiveness, President Walter C. Coffey declared in a recent address at the University of Minnesota. He called for action on manpower.

His words were in part those of a resolution adopted by the Association of State Universities.

Also in line with action by that association, President Coffey asked "the establishment of enlisted training corps in colleges and universities, to be composed of high school graduates, or those with equivalent preparation, who meet competitive standards up to quotas determined by the armed forces—these men to be in uniform, regularly paid and provided with subsistence, thus enabling students, no matter what their economic circumstances, to secure that training which will prepare them to serve their country most effectively."

This plan, now nationally demanded by the universities, is a reversion to something in the nature of the Student Auxiliary Training Corps.

Oran General Taught at 'U'

Major General Lloyd R. Fredendall, 58, in command of the American contingent which landed at Oran, carried a less war-like role at the University of Minnesota nearly a decade ago.

He was professor of military science and tactics during the 1933-1934 scholastic year.

He remained here only a year, and then at his own request was assigned to active duty by the war department. Later he was with Gen. Douglas MacArthur in the Philippines.

Physical Course Offered Teachers

A special course to help bring twin city teachers of physical education up to the minute in preparedness to teach physical fitness is being offered Saturday mornings at 8:30 this fall in Cooks Hall by Dr. Carl L. Nordly of the department of physical education and athletics. In preparation for this and other courses he is teaching Dr. Nordly served during the past summer as special consultant on Physical Fitness for the Office of Defense, Health and Welfare Service and traveled widely observing programs of health instruction.

Physics Will Teach Microwave Theory

The Department of Physics has announced a new course in the theory of micro radio waves. The use of these in the present war calls for many who have special training. Some preliminary lectures in the basic mathematics and physics will be given before the end of this quarter for those who may lack some of the necessary preparation. The course will be designed for those who have completed the equivalent of the junior year in electrical engineering or the junior year as a physics major.

Minnesota lawyers seeking the latest information on the complicated income tax laws of the United States have been invited to attend a post graduate legal course in income taxation which the University of Minnesota will conduct December 7 through 12 in its Center for Continuation Study, J. M. Nolte, center director announced.

Last year's course in income taxation was largely attended and an outstanding success.

The course will deal with the more important aspects of federal and state income taxes and their administration. The topics to be considered include the constitutional aspects of such taxes, the meaning of gross income, the permissible deductions from gross income, credits against net income, the loss and gain problems connected with reorganizations, the computation of taxes due, the classes of taxpayers created by the statute and the treatment of special classes of taxpayers, the methods for collecting taxes due, the functions and methods of operation of the Boards of Tax Appeals, and the remedies available to taxpayers to recover overpayments of taxes. The aim will be to stress those principles which are necessary to an adequate understanding of the laws and the decisions interpreting them, and to give an understanding of the procedural steps necessary in safeguarding the taxpayers' interests.

The faculty will be much the same as last year, including Professors Rottschaefer, Jennings and Prosser of the Law School, Mr. Hayner Larson of Minneapolis, and Mr. Jack Gold of Marshall. There may be additions to the list, perhaps from the federal and state income tax administrative units.

As in other legal courses at the Center, a feature again this year will be the outline or manual of income tax law and procedure. No single publication of the Center has earned so much favorable comment from professional men as this outline, which is furnished without extra charge to each registrant.

McQuarrie Gives Lecture Series In Kansas

Dr. Irvine McQuarrie, professor of pediatrics, University of Minnesota Medical School, delivered Nov. 3 and 4, three addresses in the twelfth Porter Lectureship in Medicine at the University of Kansas School of Medicine. Tuesday, Nov. 3, he spoke at the Kansas City branch on, "Experiments of Nature and the Advancement of Medical Knowledge." On Nov. 4 he spoke at Lawrence on, "Medical Experiences in Besieged China," and that night again at Kansas City, on "Diseases of Adrenal Glands in Children." The Porter Lectureship is supported by a sum of money bequeathed to the School of Medicine of the University of Kansas in 1918 by Dr. J. L. Porter of Paola, Kan. Besides the annual lectureship it provides a scholarship for a worthy student.

Dr. Willis Dugan Speaks

"Mental health in wartime" was the subject of a recent address before the International Accountants Society, delivered by Dr. Willis E. Dugan, assistant professor of education, University of Minnesota.

Course Considers 8 Hypotheses Of Human Life

A series of eight propositions has been set forth by a subcommittee of the faculty in the College of Science, Literature and the Arts as basic to a new course, "Humanities in the Modern World," which has just been announced by Professor Alburey Castell. The course will start with the coming winter quarter.

Entitled "The Organizing Idea," the eight propositions, relating to the welfare and progress of man and his relationship to ideas, are as follows:

"To be self-governing is the natural destiny of any creature possessing free-will and rational powers. The urgency of this ideal has been responsible for wide-reaching and deep-going changes in man's conception of himself, his relation to his fellow-men, and his methods of regulating human affairs.

"During periods when the notion of external authority has been questioned, or when basic social and intellectual changes have taken place, the ideal of self-government is invariably raised for re-examination and clarification. Such periods in human history are crises in the history of this ideal.

"To be self-governing means to recognize the necessity for restrictions or limitations, and to insist upon having a voice in determining those limitations, or determining the principles upon which they are fixed.

"The ideal of self-government is not peculiar to man's political interests. It may characterize his way of dealing with his economic interests, his moral interests, his intellectual interests, his aesthetic interests, his religious interests.

"In those activities where men are most obviously forced to make demands upon each other, e.g. in politics, economics, morals, the ideal of self-government gives rise to endlessly changing patterns of tension, conflict, compromise. A large part of history is the story of these tensions, conflicts, compromises and of the changing conditions which precipitate the conflicts and invalidate the compromises.

"The desire to be a self-governing individual, and a member of self-governing groups, is at the heart of such fighting words as rights, liberty, freedom, toleration, emancipation, justice, equality, equity, democracy, patriotism, independence, fraternity, responsibility, and the like

"Many of the great seminal documents whose arguments and appeals have been subsequently organized and condensed into the "social sciences" have been analyses and commentaries upon some phase of the ideal of self-governing individuals in self-governing communities. This is the case in the writings of Paine, Burke, Godwin, Bentham, Mill, Mazzini and others in politics; of Adam Smith, Malthus, Sismondi, Marx, Veblen and others in economics; of Comte, Spencer, Ward, Hobhouse, and others in sociology. The whole weight of the urgency and the difficulty of the ideal of self-government in human relations lies back, e.g. of such a sociological composite as Robert Lynd's "Middletown" or his "Knowledge for What?"

"The career of this ideal has been marked by frustration, opposition, rebellion, oppression, reform, co-operation, heroism and pathos, hope and despair. These experiences have been the occasion for many of those great documents which we call collectively the "humanities." The humanities are not co-extensive with man's efforts to realize the ideal of self-government. (a) Other forms of human experience have had great and noble expression. (b) Some phases of man's struggle for individual and collective self-government have not been enshrined in great literature or art. Nevertheless, there is a large area common to both. It is suggested that this area be exploited as fully as possible to provide content for the humanities course."

The period covered by the course will be from 1776 to the present, divided into five periods, named and dated as follows: "The new social order, 176-1800; Consolidation and reaction, 1800-1830; Liberalism and nationalism, 1830-1870; Imperialism and socialism, 1870-1914; Between two wars, 1914 to the present.

The course, running five meetings a week, will carry five credits for freshmen and sophomores, three for juniors and seniors.

State's Future Seen Depending on Research Funds

(Continued from page 2, column 5)

Some years later, I came back. Oil had been found; its wealth was pouring out in abundance. The town had undergone a complete change. On every hand was evidence of wealth and expenditure. Beautiful homes and beautiful grounds, places costing a half million dollars or more. Libraries. Schools. Play houses. Hospitals. Auditoriums. All had been attained through the beneficence of those who had profited. It was a most revealing sight.

On my return from viewing some of these great developments, I stopped to watch the operation of one of the many oil pumps. The plunger was going up and down, lifting the oil from its hidden depths. As I stood there, I could not escape the thought that, with every stroke of that pump, there was so much less of wealth to be drawn in the future. I wondered how that wealth was to be replaced.

What We Have Expended

Then my mind wandered back to Minnesota, and I envisioned a pump working there. I thought of how we had pumped away our forests, how we were pumping away our mines, were pumping out the fertility of our soil. I saw no evidence of putting anything back. Those who had found wealth had spent liberally of that which they had found and developed and had left their remaining substance to a new generation. . . a generation which was not to find and reveal new wealth, but to spend that which had been built through the efforts of the earlier generation. Many of these have wandered away from our borders.

I do not mean that there is no wealth to be found. Rather, the evidence is to the contrary. But it is equally clear that we have done little to develop it. We have continued to live on that which we had.

Familiarity breeds—not necessarily contempt—but forgetfulness. We may live out our lives here and forget what the assay of this state shows . . . a rare richness. To what other people has it been given to develop an economic state based upon four such great resources—lumber, grain, mining, dairying? But our forests, as I have said, are gone. Our ore deposits, at least those in present commercial demand, are rapidly disappearing. Our soils are being gradually depleted. Industrially we are marginal. And even the advantages we do enjoy—and they are many—are subject to the attrition of economic change . . . changes in the economic relations between the various sections of our country and equally changes in usage.

The Change in Milling

Once Minnesota was the center of the great milling industry of the world, but it too has suffered from this attrition and has lost its prestige. I wonder how many of you have visited the Minneapolis district in recent years? You would find it sadly changed. Indeed, for myself, I find it very depressing when circumstances require me to visit the plants. Once that section was a beehive of activity. It was exciting to go down there in the old days. The roar of the falls. The hum of machinery. The throng of men and vehicles. The railroad engines and railroad cars shunting their loads of incoming wheat and outgoing flour. The queue of barrel wagons stretching many blocks, waiting their turns to unload. Today it is almost a silent place. On the east side of the canal on the west bank of the river, there is only one mill remaining, and that is not in operation. Of those on the west side of the canal some have disappeared and others have been converted.

At the time of the last war, the company with which I am identified was turning out 40,000 bbls. of wheat flour daily in Minneapolis. Today our potential wheat flour capacity in that city is 1,500 bbls. The buildings and the machinery of the balance are gone. True, we have utilized some of the old buildings for other activities, but not on such a scale as formerly.

The position of the other large companies, with national and international distribution, is about the same. There is very little to hold them here, other than the age and sentiment of the existing generation, whose homes are here and who, like ourselves, find themselves too old to move. This sentiment will not hold a new generation; we shall find them on the move.

There is reason for this change.

It lies in the disappearance of raw materials and the former transportation advantages. When I came to Minnesota, the state raised 100 million bushels of wheat. Today the production of bread wheat has fallen to insignificant proportions as compared with other states that are not even considered as wheat-raising states! And former transportation advantages have disappeared into new areas of wheat raising.

This is not unnatural, for wheat is a pioneer crop, depending upon cheap land, cheap labor, and cheap transportation to distant consuming markets. As the markets have moved toward the sources of wheat supply, these have in turn moved back in progressive order, and the evolution has been marked by replacement with perishables and semi-perishables and other agricultural products of more remunerative character. It is merely an historical incident repeating itself. But it represents a loss to us. A loss, not only significant in itself, but the greater because we have done so little to replace it by other industries of similar size and character.

Science the Lamp of Aladdin

With this picture of what has been going on in Minnesota, let us turn back to this age of scientific development to which I referred at the start. Just what has happened and is happening all around us? In just the short time since the last war, we have brought to full development many marvelous things. Things which transcend those which are traditionally grouped about the Lamp of Aladdin. Things so challenging in their nature that we wonder if they can really be true. In this period the automobile came of age. So also aviation, radio, the telephone, motion pictures, television, and almost endless other things.

The effect of these upon our economic and social life is almost unbelievable. Migration from the country to the great industrial cities and to the building of new localities, with gainful employment and benefits offered to many thousands of people. Mass production of unlimited goods and services. The restrictions of the present war are bringing to our minds the many benefits which—up to the time of the war—we had at our finger tips to enjoy.

At the outbreak of World War I, we were dependent upon foreign sources for many vital and critical materials. Silks. Cottons. Fibers. Hides. Rubber. Oil. Nickel. Tin. Magnesium. Chemicals of all kinds. Fertilizers. Optical goods. Quinine. Camphor. Cork. And a host of other things. Today we have won a large measure of freedom from this dependency. In the new metals, alloys, and plastics the progress is unbelievable. Developments in the chemical industry have largely filled the void caused by the cutting off of imports from abroad. In addition they have given us a world of new and health-giving drugs. We have had revolutionary changes in medicine and dietetics. We are drawing new wealth from new sources, from the land, from the sea, in almost unbelievable quantities.

These things did not simply happen. They were the results of organized effort. Of research. We should be thankful for the progress that has been made in this time, for it has left us free from those outside sources on which we relied. Indeed, we should be in sorry straits in fighting this present catastrophic war were we dependent now as we were a short while ago!

Many of these results of research have been brought to bear upon our problems in this Global War. We were just on the threshold of a great Age of Scientific Development, with all the manifold benefits it held out to us. We are fighting now for the preservation of the right to go forward in our own freedom to reap these benefits. For, when we have won, we shall again resume our pace of progress to a new and greater age.

I wish I had the time to go into all the various things that have been done and are being done.

A Country of "Stimulated Economy"

It is evident that we live in a country of a highly stimulated economy, as compared with the utility economy in most parts of the world. We create artificial obsolescence by successive improvements in performance, by change in style and model, with the creation of new desires, ambitions and aspirations. Let me illustrate this. I think often of the time I stood on a railroad platform in London with an English friend. A train pulled in, drawn by an engine on whose sides was

prominently displayed the year of its manufacture. As I recall it, 1886! My English friend remarked with great pride, "That is how we build things over here! Just as good today as the day it was built."

I replied that in the United States it would have ceased to be an asset and become a liability not later than 1896! His automobile in which we had been riding, he boasted was 12 or 14 years old, and yet he wondered why they had no mass production and why they had failed to build an automobile industry!

I recall when I was a director of a railroad company that it seemed we were ever-lastingly buying new engines—not because they wore out (indeed, they were "just as good as the day they were built")—but progressive improvements in performance and economy were such that we could not afford to keep them any longer in operation against engines of the new types.

These are but illustrations of the continuous progress under a stimulated economy.

I wonder if any one of us really appreciates what has been going on since the advent, first of the Defense and latterly of the War Period? Mr. Charles M. Stein of the E. I. duPont de Nemours Company in a recent address made these startling assertions:

"Aluminum, magnesium, and other light metals are available in undreamed of quantities. Enough aluminum already has been produced in a single year to build as many passenger cars as operated on all American railroads, or seven times as much as was produced in '39. Twice as much magnesium is being produced from sea-water in a single year as our entire aluminum output in 1939. Our latest automobiles are already 20 years out of date. We shall have better, newer cars, with sealed cooling systems, with power outputs per cubic inch of displacement quadrupled, with fuels yielding 50 miles a gallon. All existing models are already passe. We have an aviation industry now geared to produce twice as many planes in a single year as in all the 37 years since the Wrights first flew at Kitty Hawk, giving us aerial freight cars that can lug 20 tons of pay freight to Europe and back, nonstop; and airplanes towing gliders, dropping off cars here, picking them up there! Glass that is unbreakable and can float. Wood unburnable. Laminations of plastic and wood to compete with steel. Shoes without leather. Window screens without wire. Machinery without steel. High pressure synthesis of ammonia has given new producing capacity rated as comparable to a discovery of a sixth continent. Food available in greater quantities, with easier effort, and with qualities possessing the power to prolong life."

War did not create all these ideas. Most of them were in the industrial laboratories during the 30's. War simply accelerated the development.

What Has Originated Here?

I wish I had time to go into greater development of these things that have been done and are being done. You have made use of many of them, and some day soon, I hope, you will enjoy all the new things that have been developed since the beginning of the war. In the anticipation of all these wonderful developments, I think we should inquire "What part of these have sprung from our own State?"

A frank search of ourselves may cause us to say, with Isaac Newton: "I do not know what I may appear to the world, but to myself I seem to have been only like a boy playing on the seashore, and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me."

I am not decrying the efforts of those within our State who have had the vision, ability, and courage to undertake such industries as we have, and to make a success of them. They are the more to be commended because they stand out so prominently. But, in the bigger and broader picture of modern development, we have played a small and insignificant part.

Many states whose old economies were suffering impairment has found renaissance in new enterprises utilizing formerly undeveloped resources, or those which have been made available to them through attraction on their part. States possessing petroleum deposits have forged

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ahead in great industrial developments. Petroleum is not just the source of gas which runs our cars or the oil that lubricates them. Petroleum possesses a multitude of products, so vast that even those who work with them have as yet no conception of their ultimate development. Even now it is becoming the principal basis of the new synthetic rubbers of which we hear so much and which we need so badly.

On the seaboard, they are even turning the resources of the sea to their advantage . . . that great body which we looked upon only as a medium to float ships. They have found that the sea contains traces of every element found on the land, and from it they have drawn, through chemical processes, a structural metal. Magnesium and bromine in almost unbelievable quantities, and there is more to come! In the immediate past, magnesium was selling for \$5 a pound; today at 22½¢ a pound, it is cheaper than aluminum selling at 15¢ a pound because of the difference in cubic measurement. Magnesium, as you know, is only 60 per cent the weight of Aluminum and 20 per cent that of steel.

In the field of metals, Dr. Charles M. A. Stine points out that steel is changing to light forms. . . alloys somewhat heavier than the weight of aluminum and magnesium but with huge tensile strength per square inch, thus giving an advantage in the elimination of the bulk of the lighter metals.

These are illustrative of the new enterprises and new industries that are springing up all over, through the advantages of natural conditions or through conditions which the various states have made attractive and available to them.

Expenditures for research in the United States have risen since the last war from small sums to \$300,000,000 yearly. And research laboratories to more than 2,000. It does seem to me that we in Minnesota should arouse ourselves from the lethargy of our old economies, old goods and services, and take our proper place in this march of progress. We have latent wealth, any amount of it. It only waits the magic touch of research to convert it into usable wealth. We possess facilities. We possess brain power. We possess the leadership to do these things in the fields of industry, science, medicine, agriculture. But we have not bestirred ourselves to furnish the all-important financial means to effect accomplishment. Nor have we moved in any significant way to make it attractive for capital, or adventure money, to take a permanent place with us.

Must Create Our Own Opportunities

We are proud of our State. Proud of its natural beauties. We advertise it and people come here to see it and spend their money. But scenery and climate are not going to make for permanent residence or for the adventure of capital. That rests upon the opportunities which, if not natural in themselves, are created artificially.

Let me say, in all fairness, that there have been attempts by groups of courageous men to develop some of the things that would be helpful to Minnesota's future. We have the Northwest Research Foundation, associated with the University but supported almost wholly by industrial contributions. But these have never come forth in significant amounts and are, under present conditions, increasingly difficult to secure.

Through the efforts of its staff, even with the meager sums at their disposal, they have developed a potential source of what we hope to be cheap alpha-cellulose, obtained from varieties of trees which can be readily and rapidly grown here to replace the forests that have gone. This may prove a great industry. But we are unable to go forward in its full development for lack of funds. We have had to turn to a courageous industry to take up the initial

work and carry it on, we hope to a successful completion.

Again, we have developed what is seemingly a cheap way of producing hydrogen, which might prove the basis of a great ammonia or alcohol industry. But our progress is halted again through lack of funds, both for the development of the process and for its eventual commercial application.

We do receive some support from the State on agricultural research, but this has been largely directed to the improvement of the present methods rather than in the discovery of industrial uses for our agricultural products. We do receive some support in connection with development of methods for use of certain types of ores which at present are not in commercial demand through lack of a cheap means of removing certain interfering elements.

We have a great University. As a great powerhouse, the building, the facilities, the manpower are there. But again we lack the financial means of converting these static potentialities into dynamic force. We are like a completely equipped powerhouse without coal to put under its boilers.

I look about and I see many of the other states aroused to these opportunities and contributing increasingly large sums to many fields of research. Our sister state, Wisconsin, through its Foundation which did receive liberal support, has developed methods now in commercial operation from which the revenues are of sufficient character to carry on research in many fields.

The Necessity of Today

I do not believe we can maintain the prosperity of this state in terms of old goods and services. We must improve the old goods and services, and we must create new goods and services. The products of agriculture must find expanded utilization in industrial applications. We must find in the ground, or in the products of the soil, or in the air or in the waters of our state things that can be converted to useful forms. I believe it can be done. But we shall not find the answers unless we are willing to search for them and to spend the money to support those who will give their lives to this search.

These searches into the unknown must be, as J. H. Newman says of each scientist: "free, independent, unshackled in his movement; that he be allowed and enabled to fix his mind intently, nay, exclusively, on his special object, without the risk of being distracted every other minute in the process and progress of his inquiry by . . . warnings against extravagance or scandal."

I am not unsympathetic with the attitude of the Legislature of the State in the appropriation of funds necessary to carry on this vital work. I know they must consider expenditures in the light of their ability to obtain revenue. I do not question that, in their refusal to grant the requests for research expenditures, they have acted in good faith. But I question whether the judgment that it exercised in keeping expenditures to a minimum is as sound as if they had proceeded on the theory that "We cannot afford not to spend such sums for the future welfare of the state." I maintain that, even as a farmer must fertilize his soil to produce progressively successful crops, so must we fertilize the soil of opportunity in the development of new forms of wealth that lie within our grasp and lock only the means of carrying them to realization.

I believe in my country, as you do. And I believe in my State as you do. I want it to succeed. I want to see the development of great industries here. I want to see it take its place in that age of progress which we are now entering and to which we must look with such great expectation. Let us bear in mind that, despite the recurrent maladies of mankind, progress is forward. Unquenchable. Unending. And that we must march with it, or be lost behind it.

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President Tells War Services Of University

Majority of Men to Be Called; Efforts on Behalf of Armed Services and Women Described

Since this statement was put in type the government has announced its plan for utilizing educational institutions in training men for the armed services, which statement has been carried with complete detail in the press, including the statement that men in the Army Enlisted Reserve may continue in college through what at Minnesota is the Winter Quarter.

"The war problems of the university and its students" was the topic of a convocation address delivered by President Walter C. Coffey to a packed house of students in Northrop Memorial Auditorium on Thursday, December 3. President Coffey took over when the scheduled speaker was unable to be present and took advantage of the occasion to give the students and their parents, who were asked to listen by radio, an outline of present conditions as they affect the undergraduates themselves and the university of which they are a part.

Most of the first part of President Coffey's speech had to do with the plans of the Army, Navy and War Manpower Commission with respect to undergraduate personnel and its entry into service, and since many of his remarks in this connection were tentative and subject to revision as national policies are announced, they will be omitted here.

He pointed out, however, that the armed services are expected to call up the 18 and 19 year olds as rapidly as possible and that present plans are for sending back to all colleges and universities only about 250,000 of such men, a number far below that of the men in these age groups now in institutions of higher learning. The result will be a drain on colleges because of which many important readjustments will have to be made.

President Coffey then went on to say:

One further point involved in this lowering of the Selective Service age is the policy to be followed with respect to deferments for men in training. Thus far no word has been issued on any change in existing deferment policy. At present, students in training in scarcity fields, are eligible for recommendation for deferment after completing two years of college work. In general, freshmen and sophomores have not been deferred. I see no reason to assume that they will be in the future. As for the upperclassmen now on a deferred status, the policy is yet to be announced. It would be my guess, however, that deferment for students in training will be more difficult to obtain in the future; and there may even be a complete reconsideration of deferment policy for students, especially since the army plans to establish the special training courses to which men are to be re-assigned. If these courses exist, there is at least a basis for believing that there will be fewer deferments; the necessary men might, instead, be trained in uniform in the special courses following induction.

I cannot resist pointing out that these plans as I have outlined them seem to make no provision for the needs of industry. They are designed to take all of the students for the armed services. This is but a reflection of a confusion in our manpower policy to which I have called attention in other places. Industry, it would seem, will be forced to rely upon those who are not physically qualified for military service, and upon such women as do not join the WAVES or the WAACS!

Possibly the picture I have been drawing will lead many of the men to whom I am speaking to feel that they should enlist at once. I think this is a totally wrong conclusion, and one not to the best

From Many Angles the University Campus Shows Beauty



Geographer Writes of Earth and Man, Shows Inter-action With Environment

Human Race Described in Its Varied Settings Throughout the World

"The Earth and Man, a Human Geography," is the title of a newly published work by Professor Darrell Haug Davis, head of the department of geography, University of Minnesota, which has been brought out by The Macmillan Company. Attractive in its large format, and profusely illustrated with clear and attractive pictures, the book, a text for beginning geography classes, has both eye appeal and the quality of inviting the reader.

Main purposes of the book are stated to be "to supply a background of factual material and principles of value to students in beginning classes and, second, to establish certain facts and principles concerning regional possibilities as affected by various environmental conditions, both singly and in selected combinations."

Dr. Davis has divided his volume into an introduction and three main parts, these dealing with "Man and Environment," "Limiting Effects of the Environmental Factors," and "How Man Obtains His Livelihood."

Appendix Extends Field

In an excellent Appendix subject matter that does not find a proper place in the body of the text receives consideration. Here the writer deals with map projection, both by discussion and illustration, topographic mapping, land survey, solar relations, weather maps and weather prediction, climatic and soil classifications, and a few other subjects. Useful tables are also included.

"The facts considered," says a preface, "are the observable features of areas, individually and in their relationships, which fall into the following groups: (1) climatic, surface, drainage and other similar factors, unmodified by man, which in their sum total constitute the natural environment; (2) buildings, transmission lines, mines and other works of man, which are elements of the natural environment; (3) existing vegetation cover, drainage, and other material areal aspects, which represent a present end product of original conditions as modified by man, always present where he has made his home, and (4) man, and his economic activities.

Speaking of man and his environment, Professor Davis says in Chapter 6: "The spread of man is not prevented but only hampered by climatic and other environmental barriers which restrict

the natural range of plants and animals. Therefore, his activities and their possibilities for producing change extend to practically all parts of the land surface of the earth. Further, he cannot occupy an area, no matter what his method of obtaining a livelihood may be, without altering it. Even the most primitive of hunting or pastoral populations modify the environment by destroying, either partly or entirely, certain elements of the fauna and flora, thereby upsetting a balance achieved over a long period of time and setting in motion forces over which they have no control.

"As man's economic activities increase in number and complexity, their effect becomes ever more pronounced and the natural landscape is altered even more extensively. Unfortunately, not only does man modify any area he occupies, but he frequently modifies it in the direction of lesser desirability, and therefore to his detriment."

Man and Forests

The writer goes on to describe a phase of this process of especial concern to Minnesotans, the lavish cutting of the incredibly valuable and beautiful forests with which our original America was so richly endowed. Here he says: "As a result of cutting and destruction by other agencies, our original forest cover of nearly 900,000,000 acres has been decreased to approximately two-thirds its former extent, with the bulk of the loss in the eastern half of the country. Of the existing remnant, only one-third has a stand of saw timber and much of that is inferior second growth. Today, our only remaining stands of virgin timber in the East are confined to inaccessible locations; in many parts of the East, all the remaining timber is in farm woodland. Though the forests of the South still contain much merchantable timber, it is only on the Pacific coast that depletion is not serious. Even there, much that remains is inaccessible and therefore not commercially exploitable; all is far from the principal market and cutting proceeds at a rapid rate.

The virgin forest, which has been depleted so recklessly and to the detriment of the country as a whole, included a large number of useful species, probably surpassed in no equal area or country in the world. In part, it was a coniferous forest; in part, hardwood; in part, a mixed stand in the transition zones. Of the conifers, the white pine of the East supplied one of the best, if not the best building timber the world has ever

More Trainees In Nursing Is Urgent Need

To meet war and civilian emergency needs, the University of Minnesota's School of Nursing needs twice as many students in its January 4 entering class as it had a year ago, Katharine J. Densford, director, said this week. She called for an entering class of 50, as against 24 last year, and pointed out that scholarship money from the United States Public Health Service is available in considerable amount to those who can demonstrate need.

Miss Densford also called upon "inactive graduate nurses" to prepare themselves for reentering the profession by attending a ten weeks refresher course that will be started January 4, same day as the entering course begins. Refresher students will be required to pay only their maintenance, other costs being government absorbed.

Of the enlarged entering group so much needed by their country, Miss Densford pointed out that any high school graduate who qualifies will be admitted. The course, regularly of three years, will be far enough along at the end of two and a half years, she said, so that students will then be available for call wherever they are needed. Departure of nurses from civilian posts for army and navy duty has depleted many civilian hospital and public health posts and the need for new nurses is great.

Unlike some schools of nursing, Minnesota admits beginning nurses who have married. For this reason, she said, the Minnesota course offers a particular opportunity to the wives of service men and of industrial workers who have gone to other areas and who are seeking a way to be of service on their own account.

known. Among the hardwoods, walnut, oak, and other species furnished unexcelled lumber for interior trim in our houses and for the manufacture of furniture. Under such conditions, it is not remarkable that our per capita consumption of wood has always surpassed that of other countries. Even today, though but a remnant of our forest inheritance remains, our resource is still envied by the world.

The early destruction of the forest in our predominantly agricultural areas east of the Mississippi River resulted in major part from clearing for agricultural use. The forest was regarded only as an obstacle to bringing the last into production, not as an asset, and it was destroyed without attempt to use or market any con-

(Continued to page 4, column 5)

War Needs To Guide 'U' In Fund Asking

Legislature Will Be Requested to Meet Demands of Emergency

RESEARCH AID SOUGHT

Regents Feel Future of State Depends on Laboratory Discoveries

The University of Minnesota through President Walter C. Coffey has announced that it is holding requests for additional support funds from the state for the coming two years to sums that will meet conditions created by the war and its accompanying economic changes.

In asking that the annual maintenance appropriation be raised from \$3,620,000 to \$3,977,000 a year, President Coffey said the difference will provide funds the Board of Regents feels it must have to meet the cost of living salary adjustment, already approved in advance by Gov. Harold E. Stassen and other state officials; funds to equalize university non-academic salaries with those of similar employees in other branches of state service; the increased cost of supplies and material, which in the case of hospital supplies already amounts to 26 percent, and the necessarily increased cost of operation of those departments which must now be operated on a year-around basis. Among these are medicine, dentistry, pharmacy, engineering and reserve officer training. Others may be added in the near future, especially in an effort to give 18 and 19 year olds a chance for as much training as they can get before being called into service.

Call Research Vital
Additionally, he said, the Board of Regents feels so strongly that the industrial and agricultural future of Minnesota depends on developments in the research laboratory that they are asking for an increase to \$100,000 from \$25,000 in money given the University of Minnesota each year for general research purposes.

"The Regents are strongly of the opinion that the economic future of the state of Minnesota, industrial and agricultural, must rely on the development of those resources that are now available but not adequately utilized," said the university's statement, "Needs of the Biennium." Such utilization can come only through research and the application of research findings.—Research is an investment in the future of Minnesota.

The statement pointed out further that the state must be in a position to take advantage of the trade, industrial and agricultural developments that will come at the end of the war, and that the results of research will dictate whether Minnesota will take its rightful place under postwar conditions.

Under the heading of special appropriations, added funds are asked to take care of the state's share of the increased cost of supplies and materials in the Minnesota General (University) hospital, amounting to \$32,500, and lesser sums for four other items, among them state support for seven county agents for whom no money is now available.

Engineering Building Asked
Admitting that construction cannot be started until the war has ended, the Regents ask, however, that the Legislature consider carefully the need for a new Mechanical-Aeronautical engineering building, estimated cost of which would be \$1,250,000.

"The postwar world will unquestionably witness an enormous expansion in demand for aeronautical engineers and for mechanical engineers who will be used in reconstructing the world's industry," the statement said. "Minnesota must be ready to give its students every opportunity to train in these fields."

With respect to the request for \$50,000 to cover the additional

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(Continued to page 3, column 1)

Speaker Lists Four Qualities Democracy Needs

Initiative, Perspective, Tolerance and Willingness to Service Urged by Commencement Speaker

Deane W. Malott, chancellor of the University of Kansas, addressed a more than normally large fall quarter graduating class in Northrop Memorial Auditorium Thursday, December 17, speaking on, "Careers in Crisis." Diplomas were presented by President W. C. Coffey. In a brief and inspiring address Dr. Malott outlined the attributes which education men and women must have to carry both the wartime world and the post-war world to the levels of success which the times demand. He said:

Acceptance of the gracious invitation to be your Commencement speaker this morning constitutes for me a sentimental journey, to a sister institution—an institution with whom we have had pleasant relations for many decades, in spite of occasional commando raids directed at each other's teaching staffs, in which your own institution has more than once retreated to its northern lair with a hostage or two from the top flight of our teaching staff. But 'twas ever thus among neighboring institutions living in mutual respect.

To you who are graduating this morning I extend personal congratulations and bring the best wishes of the University of Kansas. The honor being bestowed upon you in the conferment of degrees is very real, and the accompanying obligations and responsibilities are very great. In the traditional pattern I should offer you an enticing world of happiness, an easy path to some golden millennium. I cannot do so. You are facing a period of insecurity, instability, misery, war, and revolution. But it spells adventure, in a time when the world twists and turns and shakes in one of its rare periods of violent change—and remember, the unstable ages have been the great ages of history. And today you are a part of it.

This is the final farewell to you of the Fall Quarter Class of 1942—to you who have been through the shattering readjustments of the past year—readjustments which will affect your lives in their entirety. You have endured the dislocations in University life which are the inevitable concomitants of war and have thrown yourselves wholeheartedly into the nation's war plans.

War, in fact, has added to the responsibilities which you must shoulder. You have been through a mill, a processing procedure, and there are some dangers, as well as responsibilities appertaining thereto. We are not given to looking much at the dangers of education; it is not commonly thought of as a dangerous occupation. But there are some nevertheless.

For instance, there is often a lack of self-confidence in college and university trained men and women. Our college graduates do not acquire an adequate amount of self-confidence in the possibility of their achievements, each one at his own level of attainment. There is oftentimes too much of defeatism, of flabbiness of character, and of the absence of the spirit of fight and of the willingness to strive against odds. This attitude has been attributed in the first place to the fact that by the time a person graduates from college he has become saturated with respect for the great masters in all fields. He is in effect told to observe the work of the geniuses of the past and to be appropriately humble—an unfortunate bit of advice, considering that we shall seldom be in actual competition, anyway, with geniuses.

Secondly, we educators innocently but rather definitely infer that only the very unusual person does anything creative of consequence. In a critical period of our history, this is a sad commentary. We must recognize that anyone, in his own field, and in his own sphere of influence, can be creative and imaginative.

In the third place, students are led to believe that great ideas, when they occur to man, come quickly, and that mere glimmers of ideas are not worth cultivating. This is highly false. All ideas must grow, and only through their cultivation do they give promise of future value.

You who are graduating from this university today must not sink into mediocrity from lack of self-

War Needs Guide 'U' Fund Asking

(Continued from page 1, column 5)

cost of year-around operation, President Coffey points out that operating the university on a four-quarter rather than a three-quarter basis will add considerably more to costs than will be received in tuition fees from students who attend during the additional quarter. The sum stated is what the administration estimates will be needed to fill this gap. "Furthermore," says the statement, "only by year-around operation can the young men and women of Minnesota be given the same opportunity as those in other states to prepare themselves for war work or for direct service with the armed forces." It is also made clear that the acceleration is required by the federal government.

Task Greater Than Ever

"The war has changed but not lessened the educational task of the university," said a covering statement. "At the request of the federal authorities there are now on the campus special Army, Navy and Industrial training programs involving hundreds of men, mostly from the armed forces. This training work must be carried on in addition to the accelerated program for the university's regular students, which program involves year-around instruction with no summer vacation. Wartime demands have placed a heavier load on the university than ever before, though distributed in a somewhat different way.

"Costs of operating the university have also materially increased in spite of a decline in enrollment of regular students. Operating costs include salaries, wages, supplies and materials. These cannot be reduced proportionately to the drop in enrollment."

Medic. Graduates Win Distinguished Service Honors

Dr. Harold S. Diehl, dean of the Medical School, has recently received word of military honors bestowed on three medical officers who are graduates of Minnesota.

The Distinguished Service Medal of the Army was given to Col. James O. Gillespie of the Class of 1925 for work in developing hospitals in Bataan during its siege. Col. Gillespie is now a prisoner in the Philippines.

Captain William W. Moir, Class of 1938, received the Distinguished Service Cross for continuing to direct treatment of his men after he had been wounded when a transport plane in which he was traveling was shot down the morning of Nov. 8. "During the attack in the air and ensuing strafing of the ground, Moir distinguished himself by extraordinary heroism," his citation concluded.

Lt. John Hartley Peterson, Medical School, '33, has received the Navy's Silver Star for distinguished service as a medical officer during the Battle of Midway. He and his medical aide manned a boat and rescued scores of men from the water after his ship, the destroyer Hammann, was sunk.

Lt. Peterson was practicing in Duluth before he joined the Navy.

confidence. We are engaged upon the greatest concerted action in the history of civilization. Your leadership is vital—both an opportunity and an obligation. With this leadership must go certain abilities, for you must be in effect the catalyzers of democracy.

Government Just "Ourselves"

Of first importance is the willingness on your part to fulfill a destiny of leadership. The idea is not popular these days. We are all prone to try to shoulder off our troubles onto the Government. We forget that government, after all, is composed of people from among ourselves; furthermore the only money government has to spend is money that is eventually taken from us, the citizens. We forget, too, that the ineffable blessings of personal freedom are sure to evaporate and disappear if we place too much stress on economic security. The greatest fault of rulers is to seek more and more power, and if we shirk personal responsibility and encourage government to assume more power, sooner or later we shall have reared a Frankenstein monster that will devour our freedom. Today there is a shuddering recognition that the strength of national socialism lies in the fact that it forces those who fear it

Legion Leader President of Editors' Group



Wilbur C. Peterson

Although the president of the Minnesota Editorial Association is in most years the head of a weekly newspaper, the current head of that strong organization is the editor of a daily, Wilbur C. Peterson, editor and co-publisher of the Marshall, Minnesota, Messenger. Mr. Peterson became connected with that publication in 1925 and in 1929 was made its editor.

His most recent accomplishment was service as chairman of the Minnesota Newspapers Defense Scrap Drive of this year, which was so phenomenally successful. He is also commander of the Citizens Defense Corps in Marshall.

A native of the city where he still lives, Peterson was graduated from the Marshall High school in 1917 and almost at once thereafter joined the national guard regiment that became the celebrated 151st F.A. of the Rainbow Division. He served for 25 months, 18 of which saw him overseas, and engaged in all the fights of his outfit, being once wounded. After his return with a sergeant's stripes he wrote, "I Went to War," a volume of personal experiences.

Although Mr. Peterson entered newspaper work in 1919 he left it after two years and went to the School of Journalism of Columbia University, which he finished in 1925, going then to The Marshall Messenger. He is a member of Acacia and Sigma Delta Chi fraternities.

Under Peterson's editorship The Messenger won first prize four times for general excellence in national competitions of papers with less than 3,500 circulation.

Editor Peterson was elected third vice-president of the Minnesota Editorial Association in 1939 and advanced by regular stages to the presidency for 1942. For ten years he has been a member of the association's committee on the University of Minnesota School of Journalism. He has held numerous posts in American Legion and Rainbow Division organizations. Mr. Peterson is married and has a son and two daughters. He will continue in office as president until the annual meeting of the association late this winter.

to imitate it; and those who go down before it to embrace it.

A vicious trend of thought is arising in this country today under the banner of Technocracy, which under the guise of war preparedness asks for total conscription by the Federal Government—of manpower, transportation, all manufacturing industries, all patents and inventions, all foreign trade, and the taking over by the Government of the United States of all obligation of municipalities, counties, and states, as well as all taxing power previously vested in these groups. Adherents to the plan appear not to realize that in such a totalitarian program, efficient and forceful though it appears, we would lose the very foundations of free men.

When government ceases to be merely an umpire and with the full strength of its dominating authority steps into the game itself, many a player concludes that his chances to win are so greatly diminished that a seat on the sidelines is preferable. So private initiative tends to dry up and the wellsprings of progress disappear.

Initiative Catalyst of Liberty

The second great catalyst of liberty to which I would call your attention, is individual initiative, the driving force that accounts for all human progress. Nowhere has it been more in evidence than in

'U' Ranks High In Physics Field

The University of Minnesota ranks twelfth in the number of physicists listed in "American Men of Science" who received their training at the several institutions. They are assigned to the institutions from which they received their undergraduate degrees. The report was made in a study by Prof. Oswald Blackwood, University of Pittsburgh. Minnesota is credited with 13 physicists. The largest number, 37, is credited to Massachusetts Institute of Technology. Others in the first 12 are Wisconsin, California, California Institute of Technology, Harvard, Cornell, Indiana, Chicago, Michigan, Oberlin and Texas, all with numbers ranging from 15 to 21.

Numerals Go To 65 Frosh For Football

On the recommendation of Francis "Pug" Lund, freshman football coach, 65 University of Minnesota freshman football players will receive their numerals at the end of this quarter.

Minneapolis led the way with 20 men while St. Paul had 11 numeral winners.

Men who will receive their numerals are George Adzick, Minneapolis; Don Bunge, Austin; Jim Brier, Topeka, Kansas; Ed Bush, Thermopolis, Wyoming; Carl Backes, Cold Spring; Harold Breznj, Minneapolis; Wayne Ballard, Mt. Morris, Illinois; Warren Beson, Minneapolis; Earl Bruhn, St. Bonifacius; Remu Bretoi, South St. Paul; John Christie, Shakopee; Walter Cary, St. Louis Park; Jack Clemens, St. Paul; Dave Cowles, Burlington, Iowa; Art Dorn, Minneapolis; John Doty, Minneapolis; William Dunbar, Robbinsdale; James Dorfsman, St. Paul; Ivan Doseff, Minneapolis; Charles Edwards, Detroit Lakes; Eugene Giddings, Spooner, Wisconsin; Bob Gerber, St. Paul; Bob Granum, Amery, Wisconsin; Clint Grose, Minneapolis; Tom Geelan, Minneapolis; Don Holker, Minneapolis; Fritz Henkes, Fergus Falls; Erling Halverson, Clarkfield; Wayne Hagman, Barnesville; Bob Harris, Minneapolis; Rubin Harris, Minneapolis; Ray Januszewski, Perham; Jim Jennings, Minneapolis; Dick Kerr, Elmore; Bill Kenney, Minneapolis; Merland Kispert, St. Paul; Frank Kohout, St. Paul; Jim Low, Minneapolis; John Lundquist, Granite Falls; Bob Larson, Anoka; Pierre Mattei, Eveleth; Haydn Murray, Toulon, Illinois; James Merrill, International Falls; Gene Moore, Minneapolis; Dick McGee, Forest Lake; Jack McCullough, St. Paul; John Melcher, Minneapolis; George Prest, Minneapolis; Paul Prola, Ely; Huntley Prahl, New Ulm; Jack Rival, Hibbing; Dick Robb, Duluth; Dean Rallis, Sioux Falls, South Dakota; Paul Sutton, Minneapolis; Harvey Solon, Duluth; Joe Shields, St. Paul; Glen Swenson, St. Paul; Norman Trout, St. Paul; Roderic Tyra, Alloy, West Virginia; Emery Thompson, Austin; James Thompson, St. Paul; Sam Unschuld, Minneapolis; Ken Vollmar, Chicago; Bob Wrahlstad, Fergus Falls.

The danger is that much of such material may be destroyed before its value—historical and sentimental—is understood. Some very interesting things have already come in and we are hoping for much more as a result of this column kindly placed at our disposal by the Alumni Weekly.

Mementoes Of Past Classes Asked as Gifts

Minnesota Chats is glad to publish the following statement by Raymond A. Jackson, chairman of the Alumni Association's committee on archives, which is calling on alumni wherever they live to send in material revealing past days at the University of Minnesota.

Mr. Jackson wrote:

There is a room over in the Library Building which is now an Infant Archives Room but which some day must grow into a museum.

There is also an alumni committee on University Archives and as chairman of the same I must confess that I was in the midst of a sound sleep when President Ben Palmer roused me with a "How come no report from your committee, Mr. Jackson?" Promptly a call went forth for a meeting to all members: Mrs. Viola Miner Neutson, Miss Vera Cole, Dr. Charles E. Dutton and Dr. Theodore Blegen, dean of the Graduate School; Friday, December 4, in Dr. Blegen's office (ably helped by Mr. Frank K. Walter, librarian and archivist.)

The expression prevailed that the Alumni have not heard enough about what the committee is trying to do. Scarcely an alumnus but what has stored in an old trunk or chest in attic or basement some memorabilia of university days. As those days become more distant such trophies diminish in importance and value to the individual. Correspondingly they increase in importance and value to the university as evidence of the shape of things past.

If you have pictures, publications (Ariels—Minnesota Magazines), programs, diaries or letters of student days, text books, examination papers, party gowns, military uniforms, or a sign you may have taken down, one night in a celebrative mood—send them to the Alumni office, Coffman Memorial, attention of Secretary E. B. Pierce.

Those who have visited the Archives Rooms or Museums of colleges can well understand the interest and sentiment which gathers 'round material of this kind. I saw in one of them a glass cabinet in which stood the models of undergraduates wearing the uniforms of volunteers in four different wars. On the walls were pictures of groups or individuals in military surroundings with names, class and rank identification.

The danger is that much of such material may be destroyed before its value—historical and sentimental—is understood. Some very interesting things have already come in and we are hoping for much more as a result of this column kindly placed at our disposal by the Alumni Weekly.

More Teachers In War Effort

Three well-known members of the University of Minnesota faculties were granted leaves of absence for war and postwar planning jobs at the last meeting of the Board of Regents. Dr. Harold C. Deutsch, history, will become an employee of the Board of Economic Warfare. He is an expert on modern Europe and has an unusual knowledge of Germany during the period between the two great wars.

Arthur M. Borak, associate professor in Business Administration, has been assigned as a senior price analyst in the price division, OPA, and is now stationed in St. Paul.

Professor Emerson P. Schmidt, Business Administration, has gone to Washington in the employ of the United States Chamber of Commerce. He will be economist for the committee on economic policy of that chamber, and will conduct researches looking to the development of a program for the postwar reconversion of industry to a civilian economy.

Schmidt in New Work

Emerson P. Schmidt, associate professor of economics, University of Minnesota School of Business Administration, left today for Washington, D. C., where he will serve as an economist for the United States Chamber of Commerce. Dr. Schmidt's work will have to do with the planning of the reconversion of industry to civilian production at the end of the war. He has been granted leave of absence by the university.

(Continued to page 4, column 1)

President Tells War Services Of University of Minnesota

(Continued from page 1, column 1)

advantage of the students. You must remember that the plans I have sketched have been worked out by the Army and the Navy, and primarily represent their wishes and interests. And the Army and the Navy now urge that students let the plans operate as intended. Dean Williamson has spoken on this point. In "The Daily" last Saturday he said: "Students are advised to remain in college until called by the Army or the Navy. Both the Army and the Navy believe that the plan should be handled in an orderly manner. Students can help by not acting precipitously and rushing to recruiting offices." I would underscore every word of that statement, and urge parents, when their sons talk to them, to follow it in giving their advice.

Wait Until Called

There is another reason why I say this. I believe it will probably be to the ultimate best interest of the students to enter service through the plans now being formulated. They will, I suspect, have some advantage in the matter of selection for special training or officer training, if they permit their induction through the proposed channels.

One final word of advice. If you wish to discuss your military problems you should take advantage of the special military advisory services that are offered by the Office of the Dean of Students. Accurate information is available, and the counselors in Dean Williamson's office stand ready to interpret it for you in the light of your own special problems.

Above all, do not act without sleeping on your problem. I am now convinced in my mind that you will do best by staying in school until you are actually called. Certainly you have nothing to lose by so doing: we will even refund your tuition if you are called out in the quarter before you've gone far enough to get a grade in your work. Count on, then, before making any decision that will even now draw you from your college work before it is really necessary for you to go. And regardless of everything, do not cancel out within this present quarter. Finish your classes, take your exams, and be at least that far ahead!

For Service of Women

What I have thus far said applies primarily to the men. The women, too, face decisions. On the one hand there is the attraction of industry and other employment. I can understand how a girl might well wish to take advantage of the earnings that are now possible. I can only caution that in the long run, completion of a college course may be the desirable thing. I would not imply, however, that the women students should follow the conventional curriculum. If this war drags on, there is no question but women will be doing much of the work now carried by men. The obligation that faces the women students, therefore, is to select those courses of training that will prepare them for jobs they are going to be called upon to undertake. The months spent in college or university should be regarded as a pre-training period—a period of preparation for civilian service that is not less important than service the men, and some few women, will be giving in the armed forces. It is possible that we shall come to the registration of women, just as we have registered men. But whether we do or not, women students should be thinking in terms of the college courses they can take that will make them useful in connection with the work of the war.

I have asked the deans of the colleges to give thought to types of courses that women might profitably take to prepare themselves within short periods of time for active non-combatant, civilian service. Dean McConnell of the Arts College has a special committee at work on this problem under Dean Thomas, and I am told that there will be ready for the winter quarter a considerable number of war service courses. These will include an intensive course in physics, a three-quarter course in preparation for the position of junior statistician, and a two-year course for junior social workers. You should watch for special announcements relating to these courses, and others that the Arts College committee is formulating. Similar committees are at work in the College of Education, and in the College of Agriculture,

Forestry, and Home Economics. The General College has already announced special courses. I would call to your special attention a recent Bulletin of the School of Business Administration, announcing new and intensive courses for women. There are four fields covered by the proposed courses, which run nine months: industrial production, industrial relations and personnel, the accounting field, and office management and secretarial work. You can get a copy of this bulletin at the Office of Admissions, and we will gladly send it to anyone who will write me—together with similar bulletins as they are issued by the other colleges.

Dual Purpose of Courses

In setting up these special courses, organized particularly for women, the primary purpose is for training incident to the war effort, but some students may eventually wish credit toward a degree for the work done in them. Such credit will be given upon successful completion of these courses to the extent that the subject matter in them covers work in regular courses for which credit is normally given.

I would not have you think that only in such special courses as I have been describing are there opportunities to fit yourselves, as women, for war-related service. In numerous regular university courses there are also opportunities, notably in mathematics, physics, and other sciences. And there are, of course, the fields we ordinarily associate particularly with women: social work, nursing, home economics, and teaching.

One final comment with respect to the wartime education of women. I would advise all parents who have daughters finishing high school in January, March, or next June, to urge their daughters to enter upon college work at once. The university will be ready to receive them at the outset of the winter and spring quarters, as well as at the beginning of the summer term. To my mind it is important that young women start immediately upon those courses of study at college level that will prepare them for the work they will soon be doing.

I might also mention that there has been of late considerable discussion about liberalizing admissions to college, with a view to making it possible for top-ranking high school students to enter college at the end of their junior year. The university has for some time had on its books a specific policy that opens the way for admission of capable students who do not meet all of the regular admission requirements. The university now stands ready, in co-operation with other educational agencies in the state, to consider for admission any student who shows evidence of sufficient maturity to adjust and achieve satisfactorily in college if it can be demonstrated that it would be in the best interests of the individual to enroll in the university before the normal time of admission.

Any policy that liberalizes admissions has to be adopted and administered with the greatest of caution, and I am frank to say that unless such admittances are carefully controlled, the way is open for abuses that will be unfair to the high school students and dangerous to the standards that we must maintain at the colleges, even though we are at war.

Now I wish to turn for a somewhat briefer consideration of the problems that face the university as an institution.

Effects on Student Body

If a considerable proportion of our men students are soon to be inducted into service, and only a part of them are returned to this or another institution for special training; and if numbers of our women students leave for war-related service, it is evident that our regular student body will be decreased in size, even beyond the figures I quoted at the outset. This means, first of all, a loss in revenue, and that is serious in an institution where less than half of the educational budget is provided by the legislature, and a considerable part is derived from student fees. It is all the more serious since one cannot decrease the expenses of a university in direct proportion to the drop in student enrollments. If a class has 60 students and loses fifty per cent of them, there are still 30 students to be cared for. It costs just as much to heat the classroom in which 30 gather as though 60 were there; the instructor has to be paid the same salary; the overhead expenses go on almost

Thwing Named Law Librarian



Richard L. Thwing

Richard L. Thwing, 2083 Pinehurst avenue, St. Paul, has been appointed librarian of the University of Minnesota Law School, succeeding Arthur Pulling, who resigned last summer. Member of the Law School Class of 1936, Mr. Thwing, for a number of years, was sales representative of the West Publishing Company in Western Pennsylvania, with headquarters at Pittsburgh. Last April he opened law offices in St. Paul in partnership with Donald B. Smith, but gave up practice when the opening appeared at the university. Mr. Thwing's interest in and familiarity with the fine collection in the Law School Library began when he served as faculty page in the library during his undergraduate days. His service began on September 1.

as before. Even though courses are dropped or combined, and even though some staff members go on leave, the total burden of the university remains pretty much the same, although it is distributed differently. Furthermore, under present conditions the cost of all materials the university uses are advancing. Therefore, there is a serious financial problem.

Army and Navy Units

One factor compensates for this in some measure, but only partially. We are very happy that the Navy and the Army have turned to the University of Minnesota and sought our help in developing courses of instruction that are taken by enlisted men and officers sent here for the purpose. You are all aware, for example, of the many, many sailors on the Main and Farm campuses. They are being taught as electricians' mates and as machinists' mates. The Navy needs these men desperately, and we have a technical staff that is qualified to give the training that the Navy wants them to have. We assume full responsibility for that training, and also for housing and feeding the men. In my address to the students at the opening of this quarter I described in some detail all of these training courses that are located here. I will not go over the list again. Let me say, however, that the number of these courses has increased, and what is more important, we are being besought by both the Army and the Navy to take on additional courses. These courses do assist us in meeting some of our problems. We are able to utilize our own staff in teaching them, and the men are housed in our buildings. But any financial consideration is not the main one, let it be stressed. The important thing is that we as a university can provide certain training facilities that are needed by the Army and the Navy, and when they ask us for them we must not and cannot refuse. If anything we can do here will help train men to win this war the more quickly, regardless of how it may upset our normal operations and our normal way of life, we must accept the responsibility, and make whatever adjustments are called for. I mention this fact, and the fact that additional training programs may be started here soon, because when the time comes it may be necessary for us to ask considerable sacrifice of you as students in the matter of helping us provide the necessary dormitory space to house the service men. I earnestly hope we will not have to disrupt your present living arrangements, but if we do feel the need to do so, I also earnestly hope that you will regard that disruption as a war necessity

and that your own inconvenience will be regarded by you as a real war contribution. It will, in fact, be a contribution to the armed forces training program, and a contribution to the life of the university itself.

Helps to Retain Staff

There is another side to these training courses that I must mention. They are important because at a time when the regular student body is smaller, they will make it possible for the university to utilize its faculty. We have here one of the finest faculties in the world, and on this our strength and our reputation as a university rest. Unless we can preserve this faculty, our power and influence as an educational institution in the years after the war will be lost.

Many of the staff have already entered military service, and we have given them leaves of absence for the purpose, because we want them back with us once the war is over. In some departments the load of the staff has greatly increased—as in the technical fields of aeronautical engineering, electrical engineering, mathematics and physics, to mention four examples. There are other departments, however, in which the load has already begun to lighten. As a university we have the difficult problem of recasting and adapting the work of the staff members in these departments. This is a matter to which the deans are already giving sympathetic consideration. It is my belief that many staff members will be able to provide helpful service in departments other than the ones in which they are now carrying their major load of work. In this way, their services will be retained by us, and our faculty kept intact.

In this connection I was interested to learn recently that in at least two of the Big Ten universities, staff members, pretty much on their own initiative, have formed "refresher" training classes, the purpose of which is to make it possible for men in some of the departments with fewer students to make themselves available for teaching in other departments. This idea has possibilities that seem to me to warrant exploration. Above all, and I cannot say this too often or too emphatically, we must maintain the nucleus of a university faculty even in a time of war. To do this we may have to resort to temporary expedients that in times of peace we would not relish. But, as I said a moment ago, war calls for deep adjustments.

Year-Around Operation Costly

Another aspect of our financial problem relates to acceleration. No university today can operate on any other basis. Year-round instruction is called for. And yet, the budget of the university was set up originally on the assumption of an academic year and a summer session for which a different and higher tuition rate was charged. If a university operates on what amounts to a four-quarter basis, an additional expense is involved that exceeds considerably the normal expenses of a summer session. The student load is heavier, and the costs of operation mount. More workers are needed in the library, in the laboratories. A larger staff is required, for if advanced courses are offered, there must also be instruction in the intermediate and elementary courses. The university is thus faced with the question of how the additional revenue may be obtained that makes acceleration possible. There is only one source to which we can now turn, the legislature. Accordingly in our biennial requests that are to be placed before the legislature that will convene next month there is included an item of \$50,000 to meet the costs of acceleration. This will make it possible for us to offer a full summer quarter of work to students.

I hope no one who has been listening to me is overly discouraged by what I have been saying. Much of it, of course, is unpleasant to contemplate, but it is inevitable. It has been my hope that by laying bare, as best I can, some of the problems that face us all, I will enable you to see that while our path for the immediate future is set, it is not a hopeless path that we are to be following. The role all of us are to play is clearer now than at any time within the past twelve months. That very fact itself is encouraging. We have gone along for months with uncertainties before us. You as students did not know what was ahead of you; we as an institution did not see what part we could play. That situation is rapidly clarifying. Neither of us may like what we face, but we know what it is. Fear and uncertainty tend to disappear when the facts

Many Books by Faculty Members

Publishers Weekly, which records all new books, has recently noted a number of writings by members of University of Minnesota faculties. Among these are a second edition of "Cases and Readings on Property; Introduction to Real and Personal Property," by Dean Everett Fraser of the Law School; "The Treatment of Infantile Paralysis in the Acute Stage," by Sister Elizabeth Kenney; volume 2 of Professor Arthur Marget's "The Theory of Prices; a Re-examination of the Central Problem of Monetary Theory," and "Communicable Disease Control; a Volume for the Health Officer and Public Health Nurse," by Dr. Gaylord W. Anderson, head of the division of Preventive Medicine and Public Health and Miss Margaret G. Arnstein. Also listed is the new volume on "Plant Production Control," by Professor C. A. Koepke of the department of mechanical engineering.

are revealed. It is doubt and indecision that wear men down.

Reasons for Encouragement

In larger perspective, there is also some reason for encouragement. Think back over the past twelve months. We are almost at the anniversary of Pearl Harbor. There have been dark and discouraging days since last December 7. There have been confusion, defeat, and disorganization. Yet today we can perceive the outlines of order. And out of that order will come the organization of effort that will win this war. Every one of us is part of the gigantic pattern of a nation fighting for its way of life. That is true of the individual, and also of institutions such as the University of Minnesota. What is expected of us now begins to be apparent, of you as individuals, of the university as an institution. We begin to perceive what the job is, for each of us to do. It's not our regular job. It's not the job we wish we were doing. But it is the necessary job. There's some basis for satisfaction in that. There'll be greater satisfaction when we've finished that job, and returned once more to the tasks that are fundamentally our own. When that time comes, the universities can assume again the functions they were primarily intended to perform, and students can in truth once more be students. It was with pleasure that I read in my newspaper a day or two ago that President Roosevelt has requested that consideration be given now to the ways in which men in service may be assisted to return to schools to complete their education in the post-war period. That is a hopeful and a symbolic fact. It is hopeful because it reveals that even in war, some thought is going to be given to the post-war training of a nation's youth; it is symbolic in that it reveals that at a time when the normal programs of educational institutions are being refocused to the point of distortion, some thought remains alive of the time to come when we can resume our task of training men for living, and not primarily for war.

Either Way All Right Paper Says of Lewis

Sinclair Lewis, world famous author of Main Street, Babbitt, Elmer Gantry and other well known books, is leaving Minnesota and will spend at least the balance of the winter in the east.

Mr. Lewis has made his home at Excelsior just outside Minneapolis for the past two years and has taught a class in the Minnesota State University. He has also "explored" a great deal of Minnesota and spent several days in Otter Tail county where he has thought of buying a tract of land and establishing a home.

He has written a new novel during his stay in Minneapolis, and Minneapolis people say that if it is about them, they will be happy, and if it is not, they will be happier still.

—Fergus Falls Journal

Dr. Watson in Porto Rico

Dr. Cecil J. Watson, professor of medicine and chief of the division of internal medicine, Medical School, University of Minnesota, left Thursday by plane for Porto Rico, where he has been invited to deliver three addresses before the Porto Rico Medical Society. He will speak in Ponce, P. R., on the anemias, haemoglobin metabolism and bile pigments. Dr. Watson will return December 18.

Speaker Enumerates Attributes Democracy Needs

Farm Bureau Honors Head Of University



Pres. Walter C. Coffey

President Walter C. Coffey was one of two outstanding men who on Dec. 9 received the distinguished service medal of the American Farm Bureau Federation at a dinner in Hotel Sherman, Chicago. The other recipient was M. Clifford Townsend, administrator of the Agricultural Conservation and Adjustment Administration. President and Mrs. Coffey were invited to the dinner by Edward A. O'Neal, American Farm Bureau Federation president.

Among those to whom the Distinguished Service Medal has been awarded are the late T. L. Haecker, famed head of the dairy division, University of Minnesota, Frank O. Lowden, one-time republican candidate for president and former president of The Pullman Company, Prof. George F. Warren of Cornell, President Roosevelt, Henry A. Wallace, Henry A. Morgan, one-time Tennessee Valley administrator, Chester C. Davis and Sen. John A. Bankhead. The award was first given in 1928.

dians, Eskimos, and fisher-folk dotted along the coast. At one port of call we rounded the headland suddenly, and in a few moments were an anchor in Mucovik. And up the ladder from a small boat came a woman on her way to a hospital miles down the coast at Battle Harbor. She could not have known within a week, day or night, when the boat would appear around that headland, and in less than fifteen minutes she would have to be aboard, taking leave of her husband who was the local Hudson's Bay functionary. It was in late August, and if the weather was not too cold she might return to her home on the last boat in October. Otherwise it would be after the ice broke up in the following May, but her departure was as casual as that of a University of Minnesota senior leaving for an evening in town.

Perspective gives us a quiet focus and direction, a calm assurance for the future, which condemns alike the reactionary who resists change and the crack-pot and visionary who would bring it upon us too fast. It is all the more necessary to have perspective in these days of global war. Our boundaries are world wide, and global war means also the responsibility for global peace.

The Quality of Tolerance

There is also the quality of tolerance, a fourth catalyzer of democracy, which should be a characteristic of the truly educated person. Tolerance belongs particularly to our Mid-Western empire where freedom from bigotry and intolerance is a part of our common heritage. Tolerance has disappeared from a large portion of the earth today, as the lamp of learning and culture has flickered out in the leading capitals of Europe, and large areas of Asia. Greed for power, the sufferings of subject peoples, the ruthlessness of tyranny, are no longer the province of history or fiction, but are menacing realities. We need the greatest tolerance if our free way of life is to survive. We need to use more of the pronoun "we" and less of the pronoun "they." It is easy to engage in intolerant criticism of what "they," for instance, are doing in Washington—"they" referring to the Congress, or the President, or the New Deal, or Donald Nelson, Harold Ickes, the Bureau of the Budget, Paul V. McNutt, or the Roosevelt family! In our democ-

racy, however, "we" are the seat of responsibility. Washington gives heed to what "we" say, and think and feel. And with the assumption of responsibility for the pronoun "we," goes a tolerance to understand the motives and objectives with which "they" have to cope.

And so I would seek for you, this morning, as you begin your careers in crisis, full measure of the four qualities—willingness to serve, initiative or momentum to implement this willingness, and the perspective and tolerance essential to work out our common destinies in our democratic society.

The history of the United Nations, from the remilitarization of the Rhine on March 7, 1936, to the attack on Hawaii December 7, 1941, will not be a happy chapter for the lovers of freedom. But certainly the annals of American history will probably record no more venturesome period, than that beginning with our formal entry into this war. We have rallied to a common cause, with still little realization of the enormous power that is being marshalled by this nation. Our sustaining power is not yet demonstrated. We are untried in the sacrifice and courage necessary for a long and gruelling war that must not end in a stalemate.

Old forms, old customs, old standards of living must be altered. Vast powers must be cheerfully but always temporarily delegated; great sacrifices must be undertaken by us all. Can we keep our ideals and our carefully thought out concepts of democracy, or will we be stupefied into vague and full acquiescence, which will tend to rob us of our freedoms upon return to peace-time life? Does the throb and thrust of a nation gearing its total resources for war engulf us at last in a great mediocrity which will stultify all progress in final exhaustion, and slither our civilization down into a lower plane of mental, moral, and physical performance? Or from the great equalizing experience of high income taxes, rationing and priorities, and a fairly equal distribution of bombs, will we forge a new conception of the power of this nation and of the integrity of each individual in it?

"It Will Be Your World"

It will be your world. You can make of it what you will—but only by personal, individual, and unselfish effort on the part of each one of you and thousands of your associates, graduating during the academic year throughout the nation.

As you go forth from this institution, you will go forever under the banner of the University of Minnesota, with its certification upon you. To the world, you will be educated people—somewhat a thing apart. Of course your education is not complete, nor is education a definitive term. There have been universities in the Western World for a thousand years. Their pattern has not changed greatly through the centuries. Designed initially to perpetuate knowledge, to pass on from one generation to the next the accumulated learning of the past, the universities assumed a pattern or procedure of exposing students to lectures, whereby factual information flowed from the noggins of one generation to those of the next. However, the process of using the human cranium for depositories of factual data was made unnecessary by the introduction of printing in the fifteenth century, and has been even less necessary in this modern day of microfilm, great libraries, and archives, where the accumulated wisdom of the past is far safer than in the rather leaky mental receptacles of the average human being.

I do not, of course, deprecate factual knowledge. It is extremely useful. But I am also aware of its perishability. Alfred North Whitehead, the eminent philosopher, said that "Today knowledge does not keep any better than fish!" It is a mere current asset in most fields of learning. New facts come to light, uncertainties are thereby created, and yesterday's facts become mere historical curiosities. I can remember when the bounds of the physical universe were fairly rigid. While I am not nearly as old as Columbus, and therefore cannot recall the time when the earth was held to be flat, and when adventurous souls might slither off into chaos if they explored too near the edge. I do recall a rather definite and relatively small measurement of the limits of outer space. Today we have explored something like

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Earth and Man Topics of Book

(Continued from page 1, column 4)

siderable part of the timber. Valuable woods were so abundant that in some sections black walnut was often used for fence rails and for building the log houses of the pioneers. Only in portions of the South and of the Lake States, and today on the Pacific coast, has commercial lumbering always been the effective factor in forest removal, though for several decades cutting everywhere has been confined largely to an attempt to satisfy the demand for forest products.

"No Cause for Alarm?"

The earlier popular belief that destruction of the forest afforded no cause for alarm was based on several erroneous assumptions. One was that the supply of timber was inexhaustible. Another was that, with the removal of the forest, the cutover land would pass into more profitable agricultural use. Through time and experience have proved conclusively that this is not always the case, the belief expressed by the statement, "We have gotten out of the forest and we do not propose to return," voices a point of view and a belief which still finds expression.

Among other factors which contributed to rapid depletion of our forest resource was the fact that low prices for valuable timber stimulated consumption, which accelerated production and encouraged waste in both lumbering operations and use of lumber. Too rapid cutting was also forced in many areas by confiscatory taxation of privately held land which compelled marketing of the timber as the only alternative to total loss. With partial exhaustion of our forest resource has come the realization that we have squandered a considerable part of our patrimony and altered the environment to our detriment. This is brought home by increasing cost of lumber, use of inferior woods, decrease in sizes of stock dimensions in lumber, and the numerous substitutes which are in use today.

Destruction of the forest has effects which are in the aggregate probably more serious than higher prices and a shortage of lumber and other forest products. With exhaustion of saw timber or pulpwood supply, the basis for support of entire communities disappears; tax delinquency increases; political units become bankrupt and a liability to the state in which they are located.

Recreation Room for Service Men Open

A recreation center in Coffman Memorial Union for soldiers and sailors stationed for training at the University of Minnesota has been opened, with women students as volunteer hostesses. Plans were announced by G. Ray Higgins, union manager. Ping-pong, shuffleboard, darts and similar games have been installed in the center, which occupies the space of the commuter's lunch room during the period from 2 to 8 p. m. on Sundays and from 5 to 7 p. m. on weekdays, hours when the service men are free to seek recreation. About 100 service men have been taking part on Sundays, Mr. Higgins said.

Name Employment Bureau Director

Dorothy M. Punderson, who has been serving as supervisor of girls activities under NYA, has been added to the staff of the University of Minnesota as director of the employment service. She succeeds Mrs. Dorothy G. Johnson, who recently resigned and removed to Colorado. Miss Punderson, a graduate of Vassar, was formerly supervisor of women's dormitories at the University of Chicago.

five hundred million light years into space, I think it is, and we are awaiting only the completion of the world's largest telescope to push out the boundaries still farther. There was the time too, many years ago, when Bishop Lightfoot, after prodigious research, fixed the exact date of creation, as nine o'clock on Friday morning, October 23rd, in the year 4004 B. C. We are not so sure today.

Science has transformed the physical facts of our material existence, with an acceleration dating back to the incipience of the industrial revolution. Material change has unstabilized our economic, social, and political life. We have fought and won a world war, made a peace which did not recognize the fundamental nature of changed and changing conditions, and have failed to recognize that science has speeded up the world and brought it close together. Instability and dislocation continued to increase, and have culminated in a world cataclysm the import of which is just beginning to be recognized.

Let us then in parting, remember the qualities of willingness, initiative, perspective and tolerance exhibited by our forefathers in those terrible voyages across the Atlantic, when they set up this land of liberty. We need to glimpse through the mists of time the stern, forbidding coasts on which they landed—the privations they suffered. Then as we who are left behind follow in spirit, you who go out today into the armed forces and the defense industries of the nation, and those who have already gone and who would otherwise be in this group, we see you, carrying on into the future, the same traditions upon which this country was founded, the same adventure, the same insecurity, the same spirit and character in crisis. Your university will watch you eagerly, each and every one of you, confident that you will add lustre to its annals, and for your country, distinguished service in these critical days.

Lists Good Buys Of Fresh Foods

Minnesota grown vegetables are good buys these days, as are citrus fruits, says Ralph Backstrom of the Minnesota Agricultural Extension Service. Urging homemakers to use more fresh fruits and vegetables to release canned goods for overseas shipments, Mr. Backstrom offers suggestions for buying of local and shipped-in produce.

The best and juiciest grapefruit is firm, smoothly textured, well-rounded and heavy for its size. Flatness at the top and bottom show that the fruit is tree-ripened. Russet spots do not mean decay. Coarseness, puffiness and rough skins indicate lack of juice and flavor. Firm, heavy oranges are best, those with fine-grained skins usually more juicy than others.

Beets, carrots, onions, rutabagas, parsnips and turnips when sold loose by the pound and with tops removed are cheaper than bunched vegetables and just as good. Beet tops that are fresh and crisp can be used for greens; roots, when topped, should be medium-sized and firm. Carrots should be firm and highly colored. Bright, clean, hard, well-shaped onions with dry skins are usually of good quality. Rutabagas and turnips should be firm, smooth and have few fibrous roots.

Sunburned potatoes, showing greenish flesh, have a bitter taste. Soft, badly misshapen potatoes are poor buys. Dry, fairly clean potatoes, free from cuts and decayed spots and with few, shallow eyes are best. Sweet potatoes should be smooth, firm and with no bruises or cuts.

Other good quality buys listed by Mr. Backstrom are solid cabbages, crisp celery with stalks closely grown together, and dark green leafy spinach.

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New Lecture Arrangement By Sigma Xi

Series by Minnesota Speakers Dropped for Society's National Program

The annual series of scientific lectures sponsored for many years past by the Minnesota chapter of Sigma Xi, honor society in the sciences, has been dropped for the current winter and in its place the Minnesota chapter, jointly with three university departments will sponsor a series of three lectures by scientists who will be sent here by the National Sigma Xi organization. Announcement of the change was made by Dr. Harold P. Klug, secretary-treasurer of the chapter.

Dr. D. W. Bronk, professor of Neurology in the University of Pennsylvania, will visit the campus February 10 and speak jointly under auspices of Sigma Xi and the Medical School, his subject being, "Physical structure and biological action of nerve cells." Dr. G. D. Birkhoff, Perkins professor of mathematics in Harvard University, will speak on either March 10 or 11 under joint auspices of Sigma Xi and the Department of Physics. "Mathematical Nature of modern physical theories" will be Dr. Birkhoff's subject.

Scheduled for April 1, the third lecture will be delivered by Dr. Peter Debye, professor of chemistry in Cornell University. He will come under a cooperative arrangement between the Minnesota chapter of Sigma Xi and that of the American Chemical Society. Dr. Debye will discuss, "The magnetic approach to absolute zero."

Of these addresses, advance material sent out by the national office of the society has the following to say:

Dr. Birkhoff has been in South America for the past several months and it, therefore, has not been possible to secure an abstract. In his letter of acceptance Professor Birkhoff stated that he would endeavor to establish in his lecture, in elementary terms, the fact that since 11,900 mathematical ideas have been responsible for theoretical advances of modern physical theories.

Of Dr. Bronk: The behavior of an organism is controlled by the action of the constituent cells of the nervous system. There are three fundamental problems involved in this control and they will be analyzed in terms of modern physical and chemical methods. Of primary interest is the character of the molecular and ionic structure of the cell, and the nature of the forces which maintain this organization. The second problem is a determination of how the structure is modified by alterations in the environment, and how these modifications develop into the characteristic progression of cellular changes which constitute the basic action of the cell. Finally, there is the question as to how the action of one nerve cell influences an adjoining nerve, or muscle, or gland cell, for this is the end process in nervous control. Nervous activity can thus be analyzed in terms of changes in the basic structure of the cell and this can now be measured by ultramicroscopic methods, the electrical characteristics of the system, and the oxidative processes within the cell. The biological consequences of changes in the system induced by the demands of modern warfare and aviation will be discussed.

Of Dr. Debye: The principles of magnetic cooling. Its application to temperatures ranging from 3 to 0.003 degrees absolute, starting with liquid helium. What prevents us from reaching absolute zero? Small range and large range atomic interaction. Order and disorder in the atoms; cooling equivalent to increasing order. How to measure the temperature near the absolute zero. Irreversible phenomena. Can magnetic cooling be applied to the nucleus?

Further announcements of place and time will be made.

Dr. Harold Macy, professor of

Visitors Stop Over on Arctic Route



Mineral Resources of Minnesota Valley Described by Dr. Geo. Thiel

Geologist Shows How Industry Has Drawn on and May Further Use Its Materials

Dr. George A. Thiel of the department of geology, who has long been a student of the mineral resources of the Minnesota Valley summarized in part his knowledge of that area in the following statement for "Minnesota Chats," pointing out that the rock formations that occur in the valley contain a variety of mineral deposits that may be used as raw materials for a number of different mineral industries.

He listed for consideration silica sand, limestone and dolomites; granites, clays and shales.

Dr. Thiel wrote: Extensive deposits of pure quartz sand (silica) occur in the St. Peter and Jordan sandstones. The former crops out along the lower part of the valley from Savage to Mendota and the latter forms the basal part of the valley bluffs in the region of Mankato. Many millions of tons are available.

Pure silica sand may be used for a great variety of purposes. It is an important constituent of most glasses and constitutes from 50 to 60 percent of the raw mix. Much of the sand in the St. Peter and Jordan formations is too high in iron to be used to make high grade polished plate glass, but there are many other kinds of glasses, such as rough plate for skylights, ribbed plate, and ordinary window glass. Green glass embraces all the common kinds of glass such as is used in bottles, carboys, fruit jars, and other food containers. With the present restriction on the use of tin cans, there will soon be a great demand for glass containers.

Quartz sand is used also in sand blasting. Such sand should be sharp and angular. The best varieties are "crystal sand," that is, sand grains that have been reconstructed to their original hexagonal shape, with sharp pointed pyramids on each end. Many of the sand grains of the upper part of the Jordan sandstone are so reconstructed. Therefore, the sand is an exceptionally good blasting sand. Some is being quarried in the valley near Merriam Junction, south of Shakopee and screened to a standard size for blasting purposes.

Crushed and ground quartz sand dairy bacteriology, is president of Sigma Xi this year, and Dr. Alan Treloar, associate professor of biostatistics, is vice-president.

is used as an abrasive in metal polishes, in scouring pastes, and soaps. It is used also in the manufacture of asbestos shingles in which it is essential that the silica be clean and colorless.

Another outlet for quartz sand is in the manufacture of sand-lime bricks. They are made by mixing about nine parts of sand with one part of slaked lime. The mixture is pressed into bricks and cured in steam. A chemical reaction occurs between the sand and the lime which forms a hydrated calcium silicate. This compound serves as the bond for the bricks. The sand from both the St. Peter and the Jordan formations is well suited for use in the manufacture of sand-lime brick as both contain angular and rounded grains of quartz and both are exceptionally clean quartz sand.

Useful in Foundries
In foundry practice a great variety of molding and core sands are used. The chief requirements for such sands are that they be highly refractory and consist of grains of such sizes and shapes as to give the requisite permeability with the type of bond used. The sand should be free of fluxing impurities. Neither the St. Peter nor the Jordan sandstone contain natural bonded sands, but because of their uniformity of texture and of composition, they can be adapted readily to synthetic mixes that must withstand high temperatures. The St. Peter is now being used widely as a steel molding and core sand, but much foundry sand is still being imported into Minnesota. Our local deposits could be used more extensively.

Clean quartz sands free from fluxing impurities are used also for refractory cements and mortars for fire-brick and silica-brick which are used in furnaces, converters, retorts, crucibles, and other types of equipment which must withstand high temperatures. Our white clean sandstones are well suited for use in many types of refractory ware.

Scores of other uses for pure silica sand could be listed but those mentioned give some idea of the possible outlets for that material.

Limestone and Dolomite
The limestones and dolomites of the Kasota-Mankato region have long been famous as architectural and structural stone and for the manufacture of natural cement. These products have a wide market and the industries have prospered. A more recent development is the manufacture of rock wool from the shaly beds near the base of the dolomite

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Blue Geese In New Group At Museum

A bird which most Minnesotans have never seen close at hand although it migrates through one corner of the state by the thousands has been selected as the principal representative in a new habitat group of wild life in the Minnesota Museum of Natural History. It is the blue goose, *Chen caerulescens*, of which approximately 20 specimens appear in the group in a setting that depicts with almost complete accuracy the marshes on the Minnesota side of Lake Traverse on the Minnesota-North Dakota border. There the blue and other geese may be seen each April on their northern migration when great flocks wing down shortly before nightfall to spend the hours of darkness in familiar haunts.

Of actually mounted birds in the group there are several lesser snow geese besides the central species, and a scattering of mallards, pintails and baldpates from the duck family, while in the painted background Canada geese white fronted geese, and whistling swans are shown. The last mentioned species, once extremely rare, is said now to be on the increase again.

The new group has been contributed by Martin Koon Bovey, formerly of Minneapolis and now a resident of Cambridge, Mass. The group was constructed by Dr. Walter J. Breckenridge of the Museum staff and the background painting is the work of Francis Lee Jaques, whose work in the field of nature painting is so well known.

William Kilgore of the staff of the Minnesota Museum of Natural History points out that the scene in the new group is one at evening, and a special lighting point has been arranged to throw the light of a westerly sun on the dry rushes, cattails and grasses of the edge of the lake. Reflecting from the surface of the water the birds are brought almost to life by this lighting, their reflections moving as one changes position in front of the case.

Both the bluffs on the Minnesota side and the distant North Dakota shore, as painted by Mr. Jaques, are close enough depictions of the actual to be recognized by those who have visited the place.

The birds were collected by Dr. Breckenridge.

Only in very recent years have the breeding grounds of the blue goose been discovered. In 1929 their nests were found on southern Baffin Island. They winter on the shores of the Gulf of Mexico, passing through Minnesota on their migrations, especially the northward flight of spring. Considerably smaller than the big Canada "honker," the blue goose, nevertheless, is a beautiful and appealing species and one that has a prominent place in the ornithological story of Minnesota and the north country.

"Who's Who" Lists Many from Campus

A total of 203 members of the faculty of the University of Minnesota are listed in the 1942-43 edition of "Who's Who in America" according to a tabulation by Tracy F. Tyler, associate professor of education at the university. This represents a net increase of 11 names over the 192 listed in the 1940-41 volume. Of the 192 individuals previously listed, two are now deceased, four have left the university, and five do not appear in the current listing. Four of those listed are women. Staff members listed for the first time in the 1942-43 edition total 22.

The average age of the 203 University of Minnesota faculty members listed is 57, and slightly less than half of them, or 44.3 per cent are between the ages of 50 and 60. The next largest age group is the one between 60 and 70 which contains more than one-fourth or 26.6 per cent. The youngest staff member to appear is an assistant professor of physi-

Four More War Projects On 'U' Campus

Industrial "Cadettes," Army Doctors, Future Weather Experts Listed

MORE NURSES NEEDED

Professor Hart Heads Consultants for Pre-Meteorology Program

Additional war-training courses in four different fields, and expansion of the number of courses in the Engineering, Science, Management Training program are now being arranged or put into actual effect on the University of Minnesota campus.

"Cadettes" for engineering posts in the Curtiss-Wright Corporation, airplane engine manufacturers to the number of 120 will go into training on the campus February 1 for a year's training which will not make them engineers but will enable them to do many of the things now done by engineers who thus can be freed for more important duties.

Fifty enlisted men will be assigned to the university by a national University Meteorological Committee to start a special Pre-Meteorological Training Program on March 1, which will last six months and from which selected men will go on into a specialized, professional meteorological course. Graduates of the latter will become officers in the Army Air Forces. The course at Minnesota is under the supervision of Professor Raymond W. Brink, head of the department of mathematics. Meanwhile Professor William L. Hart, Minnesota mathematician, has been named chairman of the national committee of charge of the academic curricula in both the intermediate pre-meteorological course, such as will be offered here, and of a somewhat more elementary, or "C" course in the same general field, which several institutions will offer. Minnesota is only one of the institutions giving the "B" course.

Third among the new special war efforts is a twelve weeks special course of instruction in clinical laboratory work which a group of 20 Army medical officers, four captains and sixteen lieutenants, are taking in the medical school, specializing particularly in parasitology, bacteriology and physiology. General director of the course is Dr. Gerald T. Evans, head of the University of Minnesota Hospitals laboratories. They will not live on the campus, as it is not Army policy to restrict the living arrangements of commissioned officers. Principal instructors of this graduate group will be Dr. William A. Riley, chief of the department of entomology and economic zoology, and from the Medical School, Professors W. P. Larson, Hal Downey and E. T. Bell.

In Nursing two special courses have been opened during the winter quarter, one for graduate nurses who have left the profession but wish to brush up with a view to returning to duty, and a special six-months course for nurses' aides, who will undergo a three-months period of training in the fundamentals of nursing, followed by three months active duty in hospitals. They will become assistants to graduate nurses in hospitals.

The Curtiss-Wright "cadettes" will live in Shevlin hall, which has been mostly vacant since the special activities of women students were transferred to the new Coffman Memorial Union. They will be under direct supervision of a representative of the corporation employing them. For these girls expenses of the training will

(Continued on page 2, column 4)

ology who is only 32 years of age, while the oldest is a professor of 84. The average age of the 22 faculty members who made their first appearance in the current edition is 49 years.

Three members of the Board of Regents are listed in "Who's Who."

'U' Head Praises Science Scholars For Pioneering

Speaks in Chicago Before Nutrition Foundation Inc., Backers of Research

"The Universities and scientific pioneering" was the subject of an address by President Walter C. Coffey before a meeting of The Nutrition Foundation, Inc., at the Chicago Club recently. The Nutrition Foundation, Inc., is an organization of about twenty of the nation's large food processing and distributing concerns, which have raised a large sum for research, much of which has been assigned to university laboratories. It already has endowed several important research projects. President Coffey's appointment as a director of the Foundation was announced last summer.

Pointing out especially the importance of the basic, or pioneering "pure" research of which every university's program is in part made up, and showing the long-range value of such research to the more practical types of investigation seeking more immediate ends, President Coffey said:

The University of Minnesota issues year after year a report on the publications of its faculties. It is an unpretentious volume, a listing of names and the titles of articles and books, an undramatic bibliography, but probably no single report touching the varied and manifold activities of a great university documents so impressively the contributions of a large community of scholars to the world. In sheer bulk the report has a certain significance. For 1940-41 it listed, for example, 1,277 authors, all from within this one university, and the number means that virtually the entire faculty is engaged in creative scholarship. It is even more impressive in range of interest than in numbers, however, for the contributions reflect nearly the full sweep of human knowledge in such broad fields as the arts, technology, agriculture, law, medicine, dentistry, pharmacy, education, business, and other areas. I am speaking of a report for one university alone. When we think of universities throughout the length and breadth of the land in which there is a similar productivity and when we remember that behind such formal lists of publications is vital, persistent, forward-moving research by trained men and women on a thousand fronts, our imagination is stirred by the picture that is called up of the university's role in scientific pioneering. Last year I wrote a foreword to the annual report on publications and I ventured to interpret that report in relation to the underlying purposes for which the country is fighting the war. I said that "we are fighting in order that a way of life may survive that will permit the continued free and untrammelled study of just the kind of problems that these books and articles represent." I said that "no one has told a single author included between these covers that his ideas are politically unacceptable." I said that every line in the writings listed for any given scholar represented his own approach to problems and that his freedom under our democratic way was restricted only by the canons of scholarship and his own intellectual integrity.

What I said catches, I think, the spirit of university research. It is so many-sided and so broad in range, however, that it is not easy to generalize about it. It is carried forward by individuals and by cooperative groups of individuals, sometimes with large subsidies from endowments and individual gifts, from the state, from foundations, or from private industry, sometimes with very little or no financial support at all. Some of the research is exploratory or fundamental in character, some is practical or applied. Under the stimulus of war-needs, a vast amount of practical research is in fact being carried on and it is safe to say that many very important contributions are being made by the universities of America on immediate, concrete problems in the emergency of total war.

Pioneering Studies the Greatest
Without for a moment minimizing the importance of practical research or its pressing need under the impact of the war, I think it remains true that the great and distinctive field of university research is in scientific pioneering, in exploratory or fundamental investigations by scholars accustomed to thinking in fundamental terms. I do not assert that im-

'U' May Admit Some High School Non-Graduates

A limited number of Minnesota high school boys and girls who have not graduated are going to be admitted to the University of Minnesota and to some of the independent colleges of the state in the near future.

Announcement of this policy by Royal R. Shumway, assistant dean in the university's College of Science, Literature, and the Arts, was made following a conference between university officials and representatives of the Minnesota Council of School Executives and the Minnesota High School Principals' association.

The practice of admitting highly-qualified non-high school graduates to the university is not entirely new, Mr. Shumway said, having been followed in rare instances for some fifteen years.

A statement covering the proposal said:

"The university stands ready, in cooperation with other educational agencies in the state, to consider for admission any student who shows evidence of sufficient maturity to adjust and achieve satisfactorily in college if it can be demonstrated that it would be to the best interests of the individual to enroll in the university before the normal time of admission."

The University of Minnesota Testing Bureau will play a large part in selecting those students who will be admitted. It was also pointed out that the opinion of the high school principal under whom the pupil is studying will carry great weight.

Tests to be applied will be the college aptitude test, test in proficiency in English, and such special placement tests as the school or college to which the applicant desires admission may prescribe.

On the question of maturity and ability to adjust, the principal's word will be important.

The statement points out that the university does not intend to lift large numbers of students out of high school and place them in a college environment if there is doubt of their ability to make good. On the other hand, said Dean Shumway, previous experience has proved that there are a good many boys and girls still in high school who could do well if allowed to enter university or college at once.

Important fundamental discoveries have not come out of industrial laboratories, but I do assert that in many of those laboratories emphasis is necessarily placed upon relatively short-term investments. The university can afford and should afford to count research achievements in terms of the human life-time or even in terms of the human race. It does not work on a fixed production schedule. It is not obliged to push intriguing side-line investigations to one side. In a word, it has a different time schedule. This means, among other things, that university research is elastic. In a given situation it can be modified and adapted to changing needs. An excellent illustration of this may be found in the researches of Dr. Ancel Keys of the University of Minnesota. His basic researches were in the field of fatigue and muscular physiology, but vitamin problems shifted his emphasis to food and nutrition, and today he is hard at work on problems of immediate importance to the armed forces. This ready adaptation of a research program suggests another generalization which I believe to be true of university research. The men of fundamental research are quick to grasp the practical implications of their findings. This may be particularly true in the case of group researches, but I believe it is generally true of university research, group or individual. The result is that bridges are constantly being built from fundamental research to applied research.

Occasionally one hears it suggested that the results of university research are filed away to gather dust or mold, and that publication is withheld. This may in rare instances be true, but by and large the criticism is, I think, not valid. In my experience I have found now and then a man, possessing true research ability, who finds difficulty in coming to the point of publishing his findings. He is a problem for his administrator, but in fairness to him, I wish to point out that he usually has made use of his researches in the classroom and in his contacts with the public.

Research is so complex in its nature and needs that it is well

'U' Enrollment Decline Is Slow

Close of registration for the winter quarter at the University of Minnesota found enrollment off only two per cent more as compared with last year than it had been at the opening of the fall quarter, leaving the likelihood that Minnesota is still second in full-time students among American universities.

T. E. Pettengill, acting director of admissions, announced that enrollment was 15.3 per cent less than it had been last January. In October registration was off 13 per cent.

Total enrollment was 9,107 as against 10,748 at the comparable time in 1942.

There were increased numbers of students in medicine, medical technology, physical therapy, dentistry and nursing. Smallest loss among the large colleges was that in the Institute of Technology, which, with 1,830 students, mostly in engineering courses, showed a decline of 8.9 per cent. Last fall Technology had a small gain. The College of Science, Literature and the Arts, largest on the campus, registered 2,848 students, as against 3,380 a year ago, a decline of 15.7 per cent, almost the same as for the university as a whole.

Larger losses were reported in the Law School, General College and College of Education.

that we are not restricted to one rigid scheme of things in forwarding it. There is a place for exploratory research; there is a place for applied research; and there is a place for bridge building between the two. Probably no one would claim that the major share of the vast technical progress of the last century was brought to final fruition by scientists within universities, but one is on reasonably safe ground in saying that the groundwork for this progress was largely laid by scientific pioneers working in the universities of the world.

A Meeting Place of Minds

The university is a meeting place of trained minds, a federation of scholars. Every field of research is represented in a great university. It provides opportunities for experts in many apparently diverse fields of investigation to work on common problems. It offers the opportunity for exchange of information, for daily contacts. This aspect of university research is of great importance, and I suspect that its importance will increase in the future. I believe that much new advance of knowledge is going to be made in the border-line areas that lie between and impinge upon more or less sharply defined fields. We have over-emphasized departments and under-emphasized their interrelations. We need to consider the border areas more than we have. The interrelations are more evident in some fields than in others. They are self-evident in such a field as physiology, offspring of the pure sciences, mathematics, physics, chemistry, and biology. It is too much to expect that the physiologist will know the finer points in all these sciences. His need of the advice and assistance of specialists in a group of closely related fields is obvious. But I suspect that there are many other areas in which, if less evident, the potentialities of cooperation and interrelation are no less real. The hydraulic engineer or astronomer may turn out suggestions and ideas that will help solve problems in agriculture, medicine, biology.

Prospects in Nutrition

Certain important researches in nutrition are now in progress at the University of Minnesota with financial aid from The Nutrition Foundation. I shall not undertake to describe these projects, but I want to point out the interesting fact that these researches are being done in the setting of a university in which scholars in a variety of fields are conducting nearly a half hundred researches either directly within the field of foods and nutrition or indirectly relating to or impinging upon the field. Scholars in Home Economics are working on a half dozen problems, including the preparation and preservation factors in relation to the nutritive value and palatability of meat, the culinary qualities of Minnesota potatoes, the nutritive values and utilization of Minnesota fruits and vegetables, and even the nutrition status of college women. Men in Horticulture are similarly dealing with nutritional and physiological studies on potatoes and other vegetable crops. In Dairy Husbandry one scholar is exploring the factors influencing the quantity and quality of milk. In Plant Pathology men are investigating pathological and physiological changes occurring in the storage and ripening of fruits and vegetables under varying conditions.

Others are studying the market qualities of butter, the manufacture and utilization of cheese, and similar problems. In Biochemistry there are studies in progress on respiration and storage behavior of soybeans and soybean products. In Agronomy there are many studies under way in the improvement of rye, spring wheat, flax, and other crops. In Chemistry important researches in Vitamins E and A are going forward. Scholars in medicine and other sciences

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New Projects Relate to War

(Continued from page 1, column 5)

be paid by the Curtiss-Wright Corporation and they will receive pay of \$10 a week during their training period.

Of this program a statement by the company said:

"Many women from all walks of life are already working in the machine shops and assembly lines, as well as in the offices of war production plants. Very few, however, have as yet entered the highly creative field of engineering in these same plants. Now for the first time industry has opened a new field to college-trained women—a field that will allow a far greater utilization of their academic background.

"American industry is presently faced with almost complete curtailment of their normal supply of professionally trained graduate engineers by the demand of the armed forces for these men, and this program, the first of its kind, is intended to create in the shortest possible time an additional source of personnel with individual capacities for performing at least the primary engineering responsibilities. The program is by no means an attempt to replace engineers who, by the very nature of their duties, are irreplaceable; to the contrary, it will allow a more complete utilization of these engineers' abilities by releasing them from part of their present overload."

Of the medical group here for special training, Dr. Evans explained that as the war progresses it has become evident that the army can not depend on large base hospitals far behind the lines for the expert laboratory services it must have. With many contingents scattered throughout the world an increasing number of medical officers able to handle work in bacteriology, parasitology, pathology and the like will be trained for service on the spot with these many armies. It is training to this end that will be given at Minnesota. The University has offered to undertake the training of such a group in alternate three-months periods, using the intervening three months to catch up on its own work.

Formal statement of the pre-meteorological course was as follows:

Selection of the University of Minnesota as a center for a special pre-meteorological training program was announced today by President Walter C. Coffey following notification by the Army Air Forces and the University Meteorological Committee that a quota of 300 men has been assigned for study and will begin their work in Minneapolis on March first. Students in the special program will all be enlisted men on active duty assigned to the University for instruction that will insure a much needed supply of persons trained in the study and forecasting of weather.

Five universities are now engaged in offering for the Army Air Forces, in cooperation with the Directorate of Weather, professional and highly technical meteorological courses leading to commissions as second lieutenant. It is to make certain that there is a continuous flow of men adequately equipped to take the advanced work that the Army Air Forces has approved the establishment of the pre-meteorological instruction at several universities, one of which is Minnesota. In the pre-professional training to be offered in the six-months course beginning March 1, emphasis will be primarily upon mathematics and physics. All of the instruction will be given by staff members at the University under the general direction of Professor Raymond W. Brink, Chairman of the Department of Mathematics,

'U' Will Speed Worker Training In New Courses

In an effort to speed up the training of young people, especially young women, desperately needed by certain employers, the University of Minnesota's Arts College this month started several courses specially pared down to enable students to prepare to take jobs in a shorter time.

Courses going at present are in social work, practical physics, statistical work, secretarial work and office administration, and in journalism. Students planning to take up the courses in social work and office management and secretarial duties must have the regular requirements for university admission, but in the other three courses this requirement has not been imposed.

Assistant Dean Joseph M. Thomas announced that the courses have been arranged "to provide a reservoir of trained workers as quickly as possible to meet manpower shortages in certain essential civilian and war production fields."

Because many proposals for new and specialized courses are likely to be advanced by the several colleges, President Coffey has made Dean Theodore C. Blegen of the Graduate School chairman of a War Training Committee with power to consider and pass upon the desirability of such proposals. It will also furnish the central coordination in planning the courses, and will eliminate duplication.

Dean Blegen's committee has also been charged with the task of surveying special war needs in relation to available facilities at Minnesota and hastening the establishment of special war courses when these seem indicated.

Other members of the committee are Deans R. A. Stevenson, Wesley E. Peik, E. M. Freeman, T. R. McConnell and S. C. Lind; T. E. Pettengill, acting director of admissions, and Professor Dale Yoder, personnel administration expert.

and the enlisted men will be housed and fed on the campus.

Although regular enlistments into the armed services are now closed, applications for admission into the pre-meteorological course are being accepted with assurance that qualified civilians will still be admitted as privates assigned to the program; students who are now in the Army Enlisted Reserve may apply for transfer to the course. Basic requirement for the program is two years of high school mathematics and a minimum of one year of high school science, plus one year of college or its equivalent including in high school or college, college algebra, trigonometry, and analytic geometry or their equivalent. Questions concerning applications at the University should be addressed to Dr. John G. Darley of the University Testing Bureau.

The program announced for Minnesota is intermediate in scope between the professional instruction at the top level and the instruction that is being introduced at a number of colleges which are accepting recruits directly from high school.

With the exception noted in the laboratory course for army officers, all of the new courses will presumably be continued for the duration, being repeated as soon as one program has been completed.

Farm Residents Off in Number

Minnesota's farm population declined by more than 21,000 during the year immediately preceding America's entry into the war, according to estimates made cooperatively by the U. S. Bureau of Agricultural Economics and the Division of Rural Sociology of the Minnesota Agricultural Experiment Station. Dr. Lowry Nelson, professor of Rural Sociology at University Farm, says that the shrinkage in farm population from 902,100 in early 1941 to 880,900 in early 1942 was probably accelerated during the remainder of 1942. The last figure represents the lowest farm population since the industrial boom of the first world war reduced the number of farm people to slightly under 900,000. Neighborhood leaders, selected in each county of the state under a program inaugurated by the Agricultural Extension service, will work with Dr. Nelson in assembling the population estimates at the beginning of 1943.

Arts Faculty Pleads Case of Humane Studies

"Minnesota Chats" is happy to present the following resolution on "The Liberal Arts and the War," drafted and adopted by the faculty of the College of Science, Literature and the Arts in the University of Minnesota. It represents the sound, long-range thinking of that group.

The resolution said:

When teachers of the humanities today defend their subjects as essential to any war-time curriculum, it is easy for unsympathetic observers to dismiss that defense as calculated to preserve, not a humane way of life, but the academic tenure of such teachers. Until other spokesmen appear, however, it remains the obligation of those most closely associated with the humanities to re-emphasize the true role of humane studies in the preservation of civilization and in the shaping of an enduring peace.

Because the United States is fighting for the right to survive and, surviving, to maintain its own form of civilization, service in or for the armed forces of the republic is inevitably foremost in the thinking of loyal citizens. And because the war is a battle of machines, it is natural that government should call upon universities to train young men and women for various technical branches of the army, the navy, or the flying corps. The universities have vigorously responded, instituting special curricula, gladly lending their faculty members to the government, and thus constituting themselves indispensable adjuncts to existing naval, military, and technical training schools. The universities have no desire to refrain from the conflict; rather, they wish to do their full part.

Nevertheless, the very zeal of these institutions, coupled with the probability that the war will be long, raises a serious question: How far can colleges of liberal arts (whether separately established, or parts of universities) become in fact technical schools for training the operatives of highly complex machines of destruction for the duration of a long and costly struggle, without endangering those arts of peace out of which must come a renewed life for the nation and for the world?

Perhaps too few Americans realize that this country is one of the last remaining homes of humane education. Over most of the continent of Europe university life has been obliterated by tyranny. Great Britain is a fortress, and the British universities have suffered the fate of the besieged. In Japan academic institutions have become instruments of the state; in China they are reduced to skeletons by war; in India they are convulsed by politics. Excellent as are many historic universities to the south of us, they do not have resources at present adequate to the world problem. Only in the United States is there a possibility of adequately preserving for the duration of the conflict the life and virtues of humane education.

A liberal state will not be maintained by a younger generation trained principally in the arts of war. One peculiar aftermath of World War I was a psychological conflict between the generations that did great damage; a similar conflict after this war will do even greater damage if it is not warded off. Complex as were the world-wide problems after the first world conflict, those consequent upon the present strife will be greater; and unless the process of national and international readjustment is carefully directed, disaster must follow. Deeper and more fundamental still is the ancient truth that without vision the people perish.

Our enemies gladly kill this tradition wherever they can. In the realm of the mind and soul (and the present war is an ideological conflict) it is their chief enemy. It is, therefore, tragically necessary that we ourselves shall not, because of the mechanical nature of the weapons of conflict, innocently inflict upon the spiritual life of our country the same serious or mortal wounds our enemies are vengefully anxious to administer.

It is our measured opinion that the humanities have their place in the training of men for active service. We believe also that in the present emergency a peculiar obligation rests on such great educational institutions as the University of Minnesota. While

Newspaper To Help Study Press War Role

Minnesota's newspaper publishers who have wondered during the last year at the degree to which their publications have been turned into engines of war on the home-town front, are on their way to finding out something definite about the contribution of the press to World War II.

More than 450 members of the Minnesota Editorial Association have been invited to submit detailed data on amounts and types of wartime information published for civilians. The study, under the auspices of the association, is being conducted by Thomas F. Barnhart, professor of journalism at the University of Minnesota.

"Every month of 1942 brought a new high in the demands made upon the press of the State of Minnesota for vitally important wartime services," reports Professor Barnhart. "There are, for instance, scores of subjects which require a continuous flow of information from our government to civilians in every town and city in the state," he continued. "The press is the main channel through which flows, from war-time agencies to citizens throughout Minnesota, the constant stream of information and news of rules and regulations," he added.

It is Barnhart's plan to ascertain the facts and figures on the contribution of the press to the all-out war program. This is being done by a comprehensive survey of the press itself.

Editors over the entire state are being asked this week to supply data which will make it possible to estimate the extent of the co-operation of the press in supplying the latest information in a variety of fields—from administration of prices to WAACS, from air observers to war bonds and stamps.

The survey will also ascertain the impact of World War II on the press of Minnesota. Developments of a professional nature, such as war-time changes in advertising, circulation, page size, typography and other factors of management, will be revealed for both the weekly and non-metropolitan-daily-newspaper fields.

Eastern universities for men appear to be turning from their ancient heritage in the liberal arts, this University has and presumably will continue to have a solid nucleus of students who spend part or all of their time in the social sciences and the humanities, namely, men and women in the Graduate School, men in the pre-medical and pre-dental courses and perhaps youths released from their fourth year of high-school study, together with women in their extensive liberal-arts training for social work, journalism, library work, teaching, etc. Our particular situation at Minnesota, it seems, is not accurately envisioned by the administrators of Eastern universities for men or by those who are organizing our armed forces. Actually there is at this time on this campus no necessity for accepting the slogan adopted elsewhere: "Liberal education is out for the duration." And to accept it short of necessity is, we suggest, to act out of consonance with those ideals for which we fight.

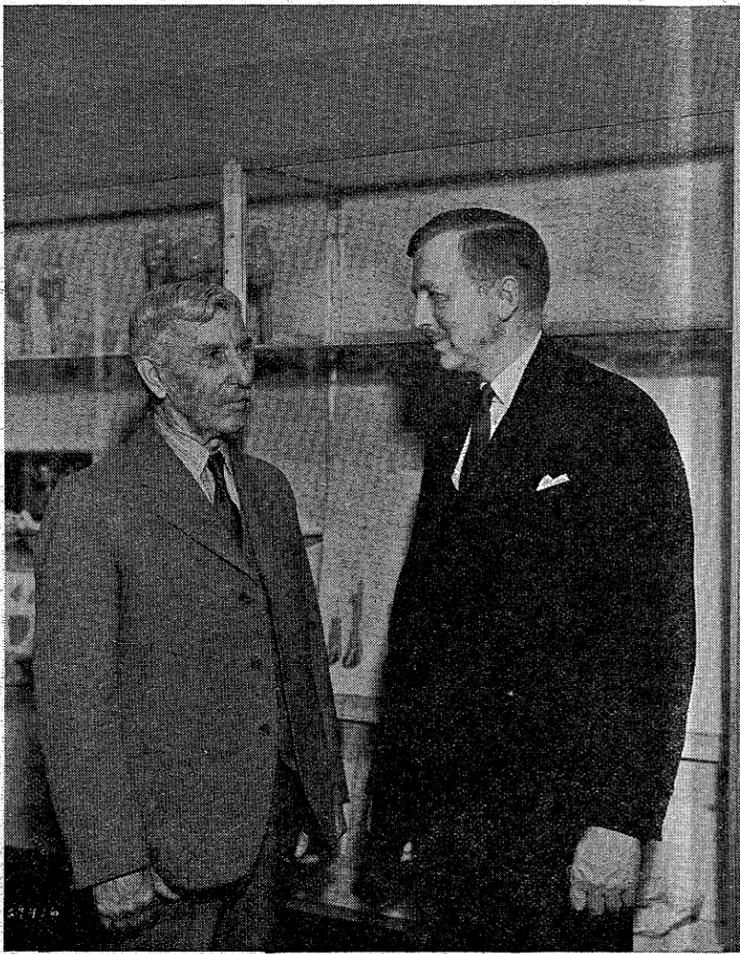
BE IT RESOLVED, therefore, that the faculty of the College of Science, Literature, and the Arts urge upon the administration of this University the necessity of maintaining an organization in our College adequate to provide instruction in the liberal arts for all qualified civilians who in the present circumstances desire and are free to undertake these studies; that our facilities be placed at the full disposal of the government for such liberal courses as its experience may indicate are desirable for men and women in the services; and that immediate provision be made for keeping constantly before the authorities in Washington the resources of this and all other colleges of the University.

It's What's Called "Reserve"

When I was in California I took an English lady visitor to hear a famous evangelist. During the service, the evangelist told each member of the congregation to turn to his neighbor and say: "I love you, brother—or sister," as the case may be. Well, a very nice man turned to the lady I had brought with me and said: "I love you, sister," to which I am afraid she only replied, very politely, "How do you do?"

—London Listener

First Alumni President Dead



The late Henry F. Nachtrieb and Dr. Dwight E. Minnich

"Minnesota Chats" has been delayed in publishing an announcement of the death of one of the "grand old men" among emeritus professors, Henry Francis Nachtrieb, professor-emeritus of animal biology, which department is now called by the more usual name, zoology. The following obituary of Professor Nachtrieb has been written by Dr. Dwight E. Minnich, present head of the department of zoology.

Henry Francis Nachtrieb, professor emeritus of Animal Biology at the University of Minnesota, died at his home in Berkeley, California, July 17th in his 86th year. He is survived by his wife and daughter. Born near Gallion, Ohio, in 1857, Professor Nachtrieb began his higher education at German Wallace College at Berea, Ohio. From there he came to the University of Minnesota and received his B. S. degree in 1882. Graduate work at Johns Hopkins University from 1883 to 1885 completed his professional training. Returning to the University of Minnesota in 1885 as an assistant, he became assistant professor the following year and department head in 1887, which position he held until his retirement in 1925.

During his long service to the University he was untiring in his efforts to build up the work in zoology. When Governor John S. Pillsbury was considering the gift of a building to the University in 1889, Professor Nachtrieb was influential in having the building devoted to the Natural Sciences. As the work grew, and additional space became imperative, he was again influential in securing a legislative appropriation for a new building to be devoted exclusively to zoology. This fine modern laboratory was built in 1915, according to plans largely developed by him.

During the years of the Geological and Natural History Survey of Minnesota, Professor Nachtrieb was active in directing this work as State Zoologist. At this time he began his work on the spoon bill or paddle fish, *Polyodon*. He accumulated much material on this extraordinary form, but, unfortunately, the greater part was never published. His published papers dealt chiefly with leeches and fishes.

In addition to his scientific interest, Professor Nachtrieb had a warm interest in the whole of human life which manifested itself in many ways. He was active in church work. He was instrumental in establishing the Minnesota Chapter of the Psi Upsilon fraternity. He was one of the most active members of the General Alumni Association of the University of Minnesota which was organized at a meeting called by him in 1904, and of which he was the first president. He was a leader in many other movements, the purpose of which was to improve the University.

Thus a long and beautiful life of service has come to its close.

Professor Nachtrieb will be long and gratefully remembered by the University to which he devotedly gave his life work. And he will be affectionately remembered by those of us fortunate enough to have known him as a beloved teacher, a wise counselor, and a loyal friend.

E. S. M. Program Seeks Women As Engineers

Announcement that Uncle Sam needs women as junior engineers and has asked the University of Minnesota to train them, starting about Feb. 1, was made today by Professor Burton J. Robertson, who has charge of the Engineering, Science and Management War Training Program.

Those who complete the course successfully "will very likely be offered civil service jobs at \$2,000 a year," he said, stating that such government bureaus as the Bureau of Ordnance, Bureau of Ships, U. S. Maritime Commission, U. S. Geological Survey and the like need these workers.

Women who apply for the course must be graduates of a standard four years college but do not need to have had any great amount of mathematics, as this will be taught them as they go along. Professor Henry C. T. Eggers of the College of Engineering will have direct charge of the course. Principle studies will be in engineering computations and problems, engineering drawing, elementary mechanics of materials, surveying and shop processes and methods. Classes will meet evenings four times a week.

Many employers in private industry, besides the government agencies, will be eager to get employees with this training, Professor Robertson said. The course will run for 27 weeks, practically an entire college year.

Meanwhile he also announced, to start Jan. 11, a new course in welding design and inspection, taught by Prof. T. P. Hughes. It will deal with methods of telling whether a weld is properly made or not and will go into the metallurgical processes involved. Good welding, he said, is an excellent process, but unless the welder is trained to know how to be sure that his work is good, dangerous failures may occur. This gives the new course an important safety aspect.

Regent Wood Honored

Sheldon V. Wood of Minneapolis Electric Steel Castings company was named one of four directors of the American Foundrymen's association at the annual meeting in Cleveland, Ohio. Mr. Wood is a member of the University of Minnesota Board of Regents, representing Minneapolis. He is also a Minnesota alumnus, class of 1904.

Thiel Describes Valley Minerals

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strata. Rock wool is made from a variety of raw materials, but that most commonly used is a siliceous, impure limestone or dolomite. Pure limestone is mainly calcium carbonate. It does not contain enough silica to make "wool" fibers. A good wool rock should contain about 30% silica, 10% alumina, and the remainder may be either calcium carbonate or magnesium carbonate or a mixture of both.

The St. Lawrence formation which occurs below the white Jordan sandstone is a good wool rock. It crops out on low rock terraces in the Minnesota valley to the northwest of Mankato. The formation is about 35 feet thick and has very little overburden. Millions of tons of the rock are readily available. The adaptability of this stone to the manufacture of rock wool has been demonstrated at the new plant at Red Wing, Minnesota, where the St. Lawrence formation is being quarried to supply the raw material for the plant that has been operating successfully for nearly a year.

Dolomite is a rock which contains both calcium and magnesium carbonates. Pure dolomite is approximated 46% magnesium carbonate. Rocks that approach that percentage of magnesium carbonate are a possible source of the metal magnesium which is now a vital element in the war industries. Its use when alloyed with aluminum is already firmly established in the aviation industry.

The United States Bureau of Mines has expressed interest in the magnesium content of Minnesota dolomites, and in order to determine the amount and the distribution of that metal in our local rocks, the Minnesota Geological Survey has undertaken a detailed program of sampling and assaying. Preliminary determinations indicate that portions of both the Oneota and the Shakopee dolomites probably are suitable for the ferro-silicon process of magnesium recovery. These formations crop out extensively in the region of Kasota and Mankato.

Granites, Clays and Shales

From New Ulm northwestward granitic rocks are exposed over large areas in the Minnesota valley. Excellent stones for monumental and architectural purposes have been quarried for many years near Morton, Sacred Heart, Montevideo, Seaforth, and Ortonville. Stone from these quarries is marketed in nearly every state. A natural product derived from the chemical weathering of the granites is abundantly present in and near the valley, but it has not been developed industrially. I refer to the extensive deposits of white kaolinite clay.

There are many varieties of clay minerals and each has its own particular properties and characteristics. The clay that overlies the granite in southwestern Minnesota is predominantly kaolinite, a hydrated silicate of aluminum. Some of it is stained with iron oxides to a reddish brown color, but much is available that is nearly pure white. High grade white kaolinite is used as a filler in the manufacture of paper. At present the paper companies in Minnesota are importing clay from the eastern gulf states. Due to high freight rates and other transportation problems, these companies are beginning to express interest in local clays for the paper mills. If the Minnesota valley white kaolinite were washed and graded to eliminate the quartz grains that were present in the original granite, the product would find numerous other outlets in the markets of the northwest. With minor additions and substitutions it could be used for porcelain ware, white earthenware, fancy tile, terra cotta, paint fillers, fulling cloth, refractory wares, and scores of other minor uses.

Kaolinite has long been considered a possible raw material for the extraction of the metal aluminum. At present most of the metal is extracted from the mineral bauxite which is a compound of aluminum oxide and water. Much of the oxide ore is now being imported from South America. Because of the present great demand for aluminum, numerous minerals that contain a considerable portion of the metal are being subjected to various chemical and metallurgical tests in the hope of discovering a method that can be used satisfactorily on compounds other than the oxides of the metal. Samples of Minnesota kaolinite have been sent to vari-

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'U' Head Praises Pioneer Research of Science Scholars

(Continued from page 2, column 3)
are exploring the nutritive value of various types of fat, the comparative nutritive value of natural lipids, interrelations between vitamin and dietary fats, blood lipid problems, chromosome behavior in corn, and the relation of nutrition to various diseases, including poliomyelitis.

Remote Studies May Contribute

Such a list, however, gives only a partial picture, for one can never know when investigations in one field, even a seemingly remote field, will have significance for another. The university has a great advantage in research in the existence in one community of a staff of experts representing the whole range of human knowledge. Each expert has his own functions in the university scheme of things. An all-embracing staff in a specialized institute is not normally possible. Even if resources permitted it, the staff members would have only occasional usefulness in given pieces of work. But in a great university each specialist, as I have suggested, has his own appropriate place; he is there; he is on call, ready to cooperate with experts in other fields; he can, in turn, go to others within reach for assistance when he feels the need of assistance. Without laboring the point, it is clear that the university environment because of its community of scholars in many fields offers the potentiality of fruitful scientific production.

One sometimes hears a note of concern about the duplication of researches in the universities of the land. There is undoubtedly a considerable amount of duplication, although it should be pointed out that research men endeavor to keep informed about researches in progress and the general advance of knowledge in their own and related fields. Probably ways could be found to improve the efficiency of what is now largely a matter of voluntary integration. On the whole it would seem to be of even greater importance to have a more elastic exchange of information on problems in need of investigation. This is of particular importance at the present time in relation to war research, for, at any rate in certain fields, there is a serious lack of information as to what the war problems needing research really are. To return, however, to university duplication of research, I suspect that often it is more apparent than real, for the approaches made to the same problem in different research centers may vary. On important problems there is much to be said for simultaneous attacks, each one having its own strategy and tactics. On the other hand, I believe that there may be new and as yet little exploited possibilities in the general area of inter-university integration of research, perhaps especially with reference to neighboring universities.

University Nurtures Knowledge

There is another compelling reason for university pioneering of scientific frontiers. The true university has one function that is spread in many parts. That function is the nurture of knowledge. It is a primary trunk with two branches. One is teaching; the other is research; and the two are inseparable. The best university teaching cannot be done save in an environment stimulated by productive research; and research, in turn, is energized and promoted by the presence of young, growing, and fertile minds. I doubt that we can overestimate the stimulating influence upon productive faculty research of the brilliant, enthusiastic, and fresh intellects of the graduate student body. The leader of such a group of graduate students is given increased incentive for cooperative enterprise. His own scholarly fertility is increased. Discussion in seminars and advanced classes often means a crystallizing of ideas or the suggestion of new problems and new approaches. The research scholars who work on special problems without this kind of stimulus often, and understandably, complain of its lack. Scholars located in a true university cannot escape it.

The linking of research with graduate education means something that probably is much more significant, however, than the stimulation of graduate students upon faculty research productivity. Year after year the seminars are sending out trained young men to be new nuclei for research. In the office of the late Professor Ross A. Gortner there is a map of the world with a dot for every scholar trained to the Ph.D. level in agricultural biochemistry at the University of Minnesota. Profes-

sor Gortner and his colleagues reach out literally to the entire world through the students they have taught. You can not mark the limits of the beneficial effects of the researches of that small group of professors by listing their publications. To gauge the effects you have to follow their band of more than a hundred young scholars to whom the lighted torch of productive research has been handed; you have to study their work in scores of centers throughout the world. So the process works both ways: inspiration of the faculty and inspiration and training of students; and in the long run the second is more important than the first. For if we are to have a vital scholarship we must be constantly bridging the gaps between the generations. We must provide for the extension of the creative research impulse into the future. Professor Gortner, a dynamic and original scholar, died at the beginning of this academic year, but the dots on his map signify living scholars through whom he has projected himself not only over a wide geographic area but into future years.

I am well aware of the fact that research men of differing temperament probably work best in differing environments. Nevertheless, university centers, because of their inherent advantages in diversity of staff, the freedom from pressure for immediately applicable results, and the ferment of fresh minds in classroom and seminar, seem to offer the most favorable opportunities for basic research. They are natural centers for research pioneers. And I believe that what has happened in the past suggests that the pushing forward of frontiers of knowledge by such research pioneers means the opening of new fields for industrial and other practical applications.

Industry Turns to Campuses

I am not surprised that industrial leaders have become increasingly aware of the potentialities of university centers in connection with their own research programs and their own research problems. What surprises me is that they have not turned to the universities much more largely than they have. For if one thing is clear, it is that investments in the scientific research programs of universities are likely to yield very large dividends in knowledge gained. The university centers are a fact; their staffs are in existence, supported by the universities themselves. Millions of dollars are spent annually on programs of teaching; very much less is available for research. There is a university need for subsidy of research. This need is the opportunity of industry and of the nation. The shortages are not in brains but in finance. The shortages are in needed subsidies for research and assistants, in money for equipment and facilities. Universities have large libraries and much general and special equipment, but the pace of modern research is such that apparatus and equipment may quickly become obsolete. Universities, facing difficult problems in maintaining teaching staffs, often can not replace research facilities unless special financial aid is available.

I have used such phrases as fundamental or exploratory research, and I have spoken more generally of scientific pioneering. I am glad to note that on this program there is included a paper on "Fundamental Research in the Food Industry of Tomorrow," for I believe that in a time when much emphasis is necessarily placed upon the immediate and the practical, we should keep our eyes clear and alert to the fact that many of the great practical applications of science have been based upon fundamental research, often, indeed, upon studies which, at the time they were made, appeared to have no immediate usefulness. I need only remind you of Faraday's studies of electricity, which were the basis of the modern electrical industry; of organic chemical studies, which led to the synthetic dye industry; of the fundamental studies of Poiseuille on viscosity, which opened the way to aeronautics and hydraulic and other practical applications; of drug studies, with special reference to the anti-malarials and the arsenicals; and, of course, of studies by many scientists on the composition of food materials, with almost unmeasured results upon milling, baking, food preservation, and synthetic vitamins.

Every great university can supply examples from recent times that drive home the same truth. In my own university the road from principle to application is constantly being traveled. For ex-

ample, a study of animals with experimentally induced bowel obstruction showed that elevation in pressure within the obstructed bowel was a constant finding. Application of this principle by using continuous suction within the bowel has lowered the death rate in this disease so that ten thousand lives, I am informed by medical authorities, are being saved annually. Again, studies of the influence of oxygen supply on bacterial growth showed the conditions necessary for optimal burning of organic substances; and the application of this finding to sewage disposal has greatly improved practical methods of handling a problem of great community importance. Studies on the virus of fox distemper showed that it could be transferred to the ferret, in which it produced initially a mild disease. After repeated transfer, great virulence was shown. On readministration to foxes after fifty ferret passages, distemper did not occur and subsequently these animals were immune to the virulent distemper virus. Application to the fox industry has saved immense amounts of money and made a large contribution to the success of an important industry.

I do not wish to close on any dogmatic note with reference to fundamental and applied research. Both are essential in our civilization and they are so closely related that they can hardly be separated. If there are natural advantages which point to exploratory research as a type of research that university scientists are especially well prepared to undertake, it is also true that universities and particularly state universities, confront many challenges to make contributions to the better use of natural resources within the regions that they especially serve. This means, against the general background of both fundamental and applied research in the past, much direct grappling with immediate problems of human welfare. At the University of Minnesota we recognize both the challenge and the opportunity, and our program includes direct attacks upon such problems as the utilization of essentially waste products, for example, seed flax straw, diseases in farm animals that cause economic loss and lowered production, the readjustment of certain industries, such as the potato industry, to meet changed conditions of production and marketing, the utilization of low-grade iron ore, the problems of manganese deposits in the Cuyuna Range, and even those of insulation and heating in a day of fuel rationing. These, and many other pressing problems of agriculture and industry and household economy, come within the range of university researches, and out of them we hope for results that can be measured in terms of human welfare within and outside the borders of our state. But, while seeing such opportunities and using them to the full, I would not have the university scientists forget or fail to progress in the wider domains of exploratory and fundamental research.

Probably every generalization that I have suggested can find illustration within the wide field of the Nutrition Foundation, and the program of this meeting itself suggests the kind of range that has been in my mind, for you are to learn about explorations in human nutrition, medical aspects of the food supply, nutrition and the armed forces, and fundamental research looking toward the food industry of tomorrow. Our field is one of immense importance to the nation in wartime and in peace; it challenges us with immediate practical problems and with opportunities for fundamental research; in meeting the challenges we should turn to research aid where that research aid may be found; and I am glad that the universities, natural centers for research in this field as in so many others, are being utilized. I believe that they will join in meeting the newer needs of scientific pioneering; and I believe that the work sponsored and promoted by this Foundation will result in significant contributions to America and its allies during the ordeal of the war and to human welfare beyond the years of war and into a far future.

Sheldon V. Wood, '04, member of the Board of Regents, has been elected a director of the National Association of Manufacturers, it was recently announced. Mr. Wood is president of the Minneapolis Electric Steel Castings Company. He is also a director of the First National Bank.

MINNESOTA CHATS

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Wildung in Grid. Valhalla

The Helms Foundation of Los Angeles, Calif., national football rating organization, was so impressed by the work of Captain Dick Wildung during the past year that it has placed him on its All-Time All American team.

To bring this honor to Wildung the Helms people incontinently threw off their All-Time team Hector Cowan, Princeton tackle between 1885 and 1889.

The Helms honor puts Captain Wildung in the company of the really great, that team now being as follows: Ends, Frank Hinkey of Yale and Brick Muller of California; tackles, Wilbur Henry of Washington and Jefferson and Dick Wildung; guards, William W. (Pudge) Heffelfinger of Yale and T. Truxton Hare of Pennsylvania; center, Adolph G. Schultz of Michigan; backs, Walter Eckersall of Chicago, Jim Thorpe of the Carlisle Indians, Red Grange of Illinois and the legendary Willie Heston of Michigan.

Although but one Minnesota player is on the All-Time team of the Helms Foundation, two Minnesotans are there, as Heffelfinger, still hale, is a Minneapolitan. Yale and Michigan each have two players. Five of the eleven are from the Western Intercollegiate Conference.

Land Boom Danger Pointed to Farmers

Farmers may face another land boom during World War II, says A. A. Dowell, University Farm economist, who points to increased foreign and domestic demand for farm products as one of the factors leading to higher land values. The present low level of land values and farm mortgage interest rates and the favorable price relationships are other factors which appear to favor an upward trend. On the other hand, says Dowell, there are several factors that suggest a land boom may be avoided or at least kept from repeating World War I experience. Many people now on farms still recall the disastrous results of the last boom when Minnesota farm land values more than doubled between 1914 and 1920. They may help to keep land prices from reaching the dizzy heights of the previous boom, Dowell says.

Other factors which may help to avoid another boom hinge on the possibility of drawing off surplus farm income through higher taxes and purchase of defense bonds. Dowell cited the possibility of withdrawing or reducing government subsidies to agriculture during the war as another factor in curbing inflation in land values.

Whether war-time prices for farm products will cause farmers and others to bid up the price of land will depend upon the length of the war and the measures taken to draw off surplus farm earnings. Dowell pointed out that the attitude of buyers and sellers of farm properties will play an important part in determining whether land values will follow the World War I pattern.

Kolthoff Speaks In Nine Cities

Dr. I. M. Kolthoff, department of analytical chemistry, returned recently from a tour of nine southern cities, where he spoke before sections of the American Chemical Society. Talks were made in Nashville, Kingsport, Knoxville and Chattanooga, Tenn., Birmingham, Atlanta, Spartanburg, Chapel Hill and Richmond. He also conferred with some officials in Washington concerning war work. Shortly after returning Dr. Kolthoff was taken ill and underwent a serious operation in University Hospital from which he is now recovering.

Poem to Pudge Does Due Honor To All-Time Guard

Minnesota Chats is happy to do honor to Minneapolis' famous "Pudge" Heffelfinger, All-Time All-American guard, because of his great play for Yale in the early nineties. Heffelfinger was honored the evening of Dec. 16 at a dinner in Minneapolis which was attended by some 450 of his friends.

Reprinted herewith is a poem sent for the occasion by Grantland Rice, veteran sports writer. Rice is the one who has selected Collier's All-American teams since the death of Walter Camp, originator of the idea.

TO PUDGE HEFFELFINGER
(The game's greatest football player)

By GRANTLAND RICE
You were the top when Camp was young.
You led his first parade.
You were the king when Lonnie Stagg and
Flashy Snake Ames played.
And thirty years beyond your prime
When Bo McMillin came,
You still were better than the best
Who played our greatest game.

You were a star at twenty-one
When Yale was riding free.
But you were even better still,
When you were fifty-three.
And when at last at sixty-five
They gave you one more chance,
You were the phalanx in the charge
That led the quick advance.

With frame of iron and heart of steel
You've earned a nation's cheers.
You stand among the valiant few
Who've whipped the passing years.
And may you wave forever—

Pudge,
On through eternal space—
To you—who helped to make the game
That helped to make our race.

River Valley Resources Told

(Continued from page 3, column 5)
ous research laboratories and one of the largest aluminum companies in the United States is now very much interested in the available tonnage of a certain grade of the Minnesota valley deposits.

Clayey shales of marine origin occur directly beneath the glacial drift in many counties both to the north and to the south of the Minnesota valley west of Mankato. They are being used for the manufacture of brick and tile at Springfield. The possibility of making various synthetic mixes of these shales and the kaolinite clays has not been thoroughly investigated. The tonnage of raw material of both types is enormous, and it should prove to be a profitable field for ceramic engineers.

Perhaps a few resources that are not thought to be present in commercial quantities should be mentioned also. One of them is petroleum. Doodlebugs and willow-witches notwithstanding, all geologic evidence indicates that structures favorable for the accumulation of oil do not occur in the Minnesota valley region. The files of the Minnesota Geological Survey contain hundreds of logs of wells drilled into bedrock in that area. Drill cuttings show that granite and related igneous rocks occur at a depth of less than 500 feet in nearly all of the counties west of Mankato.

A similar statement can be made regarding the occurrence of natural gas. Some gas exists in pockets of organic debris in the glacial drift. In some localities it bubbles up through the water in the farm wells. It is not present in sufficient amounts nor is it under sufficient pressure to be of economic importance. No natural gas is known to occur in the bedrock formations under the glacial drift.

War of Food Just Starting Says 'U' Head

In Farm Mobilization Day Talk Pres. Coffey Calls for Comprehension of Vast Task

President Walter C. Coffey of the University of Minnesota was prominent among those who took part in the speaking on Farm Mobilization Day, Tuesday, January 12. His talk was heard over the University Station, WLB.

Pearl Harbor stands in memory as the day when Americans were jolted out of their complacency and took up the grim business of fighting and winning the war, he said. We have come a long way since Pearl Harbor. I think we have proved by now that the people of a democratic nation can size up a situation realistically and go about doing a job the hard way when that is necessary. We have experienced a series of minor Pearl Harbor shocks since that unhappy day of December 7, 1941, but we like to think now that we have passed the turning point and are winning this war.

It is too early for a celebration, rather this is a day of consecration. I am sure the President of the United States did not have in mind a giant pep meeting when he proclaimed this day as Farm Mobilization Day. Even as Pearl Harbor marked the point when the gloves were off and the fight was on in dead earnest, so Farm Mobilization Day marks the beginning of the greatest effort in the history of American agriculture. We are just beginning the war of food, and the consequence of losing that war would be dire as defeat on the battle field.

A full realization of the significance of food production now called for, came to me for the first time last week as I sat in a conference of farm leaders in Washington. The problem of food simply could not be bigger than it is. The demands for food, the need for food is almost beyond our comprehension. This war is a global war. Our job is not only feeding the millions of Americans engaged in the enormous task of war production, but also the feeding of the armies and navies of the United Nations all over the world. More than that, we are counted on for food to keep our allies effectively in the fight and to enlist the help of conquered nations as soon as these have an opportunity to strike back at the oppressors.

One of the facts of war is that the military services must always come first. I think we Americans have been quick to recognize that fact and have done a good job of backing up the army and navy. However, in our zeal to get a large and well equipped fighting force in the field as soon as possible, there is danger that we overlook the secondary army of supply. I hope that today will mark a re-emphasis on our attitude relative to total food production. Even at this late date I don't think we have faced the full implication of our food problem. This holds true all along the line, from the government official to the farm leader and to the farmer himself. In official circles and among city people the idea seems prevalent that rationing alone will solve the food problem. Rationing can be only secondary; all it can do is to divide equitably that which is available. It is production alone that will determine whether we can meet our tremendous obligation to feed the United Nations at war.

Barrel Not "Bottomless"

In view of the magnitude of what we have undertaken to do, the food barrel can no longer be considered bottomless. The large supplies of food we are accustomed to having in our warehouses and in our cellars can no longer be labeled as "reserve." We can no longer surround our production program with "ifs" and sit back in confidence that we have the extras with which to defy flood and drought. The plain fact is that we need every pound of food we can produce in 1943. We

Whitman Poetry in American Spirit



Walt Whitman

IN LINE with its policy of printing from time to time bits of important literature, Minnesota Chats presents below excerpts from Walt Whitman's, "Song of Myself," in "Leaves of Grass."

To those who are unfamiliar with Whitman his "discovery" may be an experience of the first importance.

Known as "the good, gray poet," Whitman served in the Civil War, briefly as soldier, longer as hospital attendant. He passionately admired Abraham Lincoln. Carl Sandberg is his disciple, not only in the Lincoln interest, but in his poetry.

Not long ago there was erected in Bear Mountain Park, up the Hudson river from New York City, a statue of Walt Whitman by the famous American sculptor, Jo Davidson. Mr. Davidson recently was kind enough to send to "Minnesota Chats" the picture of his statue which is shown on this page. A description of the statue in the New York Herald-Tribune said, "It is a bronze statue, resting on a boulder against a natural backdrop of sturdy trees. The statue of a great man, it shows him striding in the open, hat in hand, greatcoat flapping. It expresses a theme the man himself had written (Song of the Open Road)—'Afoot and light hearted, I take to the open road—the long brown path before me, leading wherever I choose.'"

"I designed the statue for the setting," Jo Davidson said. "Whitman is America. This is America."

The excerpt from "Song of Myself," one of the great poems, follows:

A child said, "What is the grass?" fetching it to me with full hands;

(Continued on page 4, columns 1 and 2)

need all the skill and persistence of farm people and those who back them in their job, and we shall appreciate the help of Providence to give us a bountiful crop year.

All food production will be important in 1943, and every region of the United States where food is grown must make its full contribution. But if we were to make a map of food resources and mark the six states that will play the most important role, Minnesota would be among them. Farmers in this state have the skills, the land and the herds to produce in export quantities the foods to fill the ships that supply our soldiers, our allies and all the starving nations that must be fed before they can rebuild.

Minnesota's Vast Production

Minnesota stands first in the production of butter and ranks among the leaders in other dairy products. Our state is third in eggs and poultry, third in pork and contributes heavily of other meats to the nation's larder. We raise 40 per cent of the nation's flax, now rated as a war necessity. We rank well up among the states in the two most important feed crops, corn and alfalfa.

Minnesota farmers have been able to step into war production

(Continued on page 2, column 1)

More Rich Iron Ore May Be Found In Minnesota Is Geologists' Opinion

Recent Studies on Cuyuna Range Also Revealed Manganese Beds Larger Than Thought

There are so many indications that Minnesota iron ore deposits are probably more extensive than the known, rich deposits of the Mesabe, Cuyuna and Vermilion ranges that geologists are more or less constantly at work on the problem of finding what else is here, where it is, and what its nature may be.

Dr. F. F. Grout, professor of geology, is now at work on such a problem. He is making progress on an effort to determine the relationship of the ore bearing formations of the Mesabe range and the Cuyuna range, less than a hundred miles to the southwest of the end of the Mesabe; and together with that project, he has been giving further examination to the manganese-bearing ore bodies of the Cuyuna range.

Combining drillings of his own,

Women Gain On Men at 'U'

For the first time in the recent history of the University of Minnesota the enrollment of men students has dropped below the sixty per cent mark, it is shown by figures released by the director of admissions, T. E. Pettengill. In normal times men make up about 65 per cent of the total.

As of January 16, the university had 10,346 students, of whom 6,008 were men and 4,338 were women, the latter constituting slightly more than forty per cent.

Women now predominate in the College of Science, Literature and the Arts, there are more "Home Ecs" than students of agriculture and forestry at University Farm, and more than twice as many women as men in the College of Education, where the girls regularly outnumber the men. Courses in nursing and medical technology are composed wholly of women and, on the other hands, the several divisions of the Institute of Technology, along with Medicine, Dentistry, Pharmacy and Law are overwhelming male.

Present enrollment in the Graduate School shows 577 men and 149 women. Evening extension classes, not included in the total already given, have 2,567 women and 1,928 men. Women also outnumber men among the 1,528 students who are taking courses by correspondence.

Mr. Pettengill also called attention to the fact that a few more freshmen students registered in the university at the opening of the winter quarter than had entered a year ago.

Dr. Casey Returns From Washington

Ralph D. Casey, director of the School of Journalism, who served for the past five weeks as administrative consultant to the Bureau of the Budget, Washington, D. C., has resumed his teaching and administrative duties.

Dr. Casey's special assignment was a study of the inter-relationships of the Office of War Information and the Foreign Broadcast Intelligence service. The assignment included observation of the work of the overseas branch of the OWI in New York.

This is the second assignment on the informational side of governmental war activity that Dr. Casey has undertaken. Last summer he studied press intelligence services as a consultant to the OWI.

Gives Library Equipment

Three large and attractive metal cases have recently been given to the University of Minnesota library by Mrs. Charles S. Pillsbury of Minneapolis. They will be used to protect and store an extensive collection of posters from the last war which Mrs. Pillsbury recently gave to the library.

financed by special research funds, and drilling records in the possession of J. P. Wolff, now a geologist for the Oliver Iron Mining Company, Dr. Grout has reached interesting conclusions which he announced at a recent meeting on the campus of the Minnesota chapter, American Institute of Mining and Metallurgical Engineers.

Most immediately important, perhaps, of four major findings, is that the bodies of manganese bearing carbonates on the Cuyuna range are more extensive than had been believed. Manganese, essential in steel manufacture, is normally imported into this country and, despite occasional probable ship sinkings, is still coming in from Brazil, India, and South Africa, Dr. Grout points out. However, should importation be stopped by more intensive submarine warfare, such deposits as those on the Cuyuna range, with manganese content of up to 15 per cent, would become very important.

Dr. Grout's studies have shown that a layer of carbonate in the

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Legislators Re-elect Four As Regents

No Change in Composition of Governing Body for Next Two Years

NEW BUILDING PRESSED

Scholarships for Students of High Ability Proposed in Measure

Important actions by the Minnesota State Legislature since Minnesota Chats last appeared include the re-election of four members of the Board of Regents whose terms expired this year, introduction of bills for the construction of a Mechanical-Aeronautical Engineering building, greatly needed on the campus, and for the creation of two types of scholarships whereby state funds would help especially capable students in getting an education, some at the University of Minnesota, some at other institutions within the state.

Regents Daniel C. Gaaney of Owatonna, Dr. E. E. Novak of New Prague, A. J. Olson of Renville and Dr. F. J. Rogstad of Detroit Lakes were re-elected in joint session of the two houses last week. The vote was taken earlier in the session than usual because of the desire of the Legislature to make its war-time session a short one.

Never has there been a more harmonious agreement on the excellence of sitting regents and the desirability of returning them to their duties for a further term of office. The normal term of a board member is six years, with four terms expiring each two years, at times corresponding with sessions of the Legislature.

Under the scholarship proposal, 200 honor graduates of Minnesota high schools would be awarded scholarships of \$200 a year apiece to help them attend either the University of Minnesota or a State Teachers College. Many surveys have pointed out that a large number of the most able high school graduates never enter an institution of higher education, chiefly because of financial handicaps. The principle behind the scholarship proposal has long been recognized as an excellent one, and there is great interest in the action which the Legislature may take. The proposal was joined with another for the creation of 26 annual "United Nations Scholarships" of \$300 each that would help students from the 26 United Nations defray the cost of attending the University of Minnesota.

Within the university itself a step forward in the program toward strengthening the physical education requirements was taken by the Administrative Committee of the Senate when on Jan. 20 it adopted two of four recommendations by the All-University Committee on Contribution to the Defense Program in the Areas of Health, Physical Fitness and Recreation. These were the following:

"We recommend to the Administrative Committee of the Senate that it recommend strongly to the faculties that every student, upon entrance to the University, be required to take a comprehensive examination covering personal and community health information and that those who fail to show a reasonable standard of knowledge be required to take a suitable course covering that field as specified by the Department of Public Health and Preventive Medicine," also—

"We recommend to the Administrative Committee of the Senate that it recommend strongly to the faculties that for the duration of the war a maximum of not less than 12 credits in Physical Education be accepted for graduation for all students enrolled in the Army and Navy ROTCs and in the enlisted reserve programs."

Proposals that would have made it mandatory on both men and women students to take a minimum of one credit hour in physical education during each of their first six quarters in residence at

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War of Food Just Starting

(Continued from page 1, column 2)

with a minimum of farming adjustments because our regular farming procedures yield the very food and oil crops which are critical in this global war. The immediate need in Minnesota is not radically to change our agriculture, but to improve it and to increase production as far as our land, our skills, our equipment, our manpower, supplemented by our patriotism can take us. Since Minnesota is a critical food production area, everything must be done that can be done to reach the necessary goal.

When we consider the supreme effort which will be required in 1943, it is gratifying to review what Minnesota farmers were able to accomplish in the past year. Not everyone realizes that the sensational conversion of industry to war production had an equally spectacular counterpart in American farms during the first year of the war. Let's look at some of the facts of the Minnesota farm output:

Our state not only continued in its position as the leading butter state but produced large amounts of extra milk for conversion into cheese, evaporated and dried milk. Production of eggs from January 1 through October 1, 1942, was 24 per cent greater than in the corresponding period of 1941. In dozens of eggs, the increase was 37 million. The number of laying hens was up 21 per cent. The production of pork from the 1942 hog crop is expected to be up 20 per cent or more. Flax production in 1942 was up 187 per cent over the 1930-39 average. In 1942 the Minnesota production alone was 40 per cent greater than the U. S. annual production average for the years 1930-39. Feed crops were up 37 per cent over the 1930-39 average. Tame hay was up 52 per cent.

An inspiring example of a quick adaptation to meet a war need is the shearing pelt program carried out by lamb feeders in the southwestern part of the state. By shearing about seven weeks before marketing, the pelts of these lambs are made ideal for aviators' coats. In response to a government appeal for shearing pelts, feeders have sheared an estimated 90,000 lambs this fall, to set the best record of any region in the United States. At the same time, thousands of sheep raisers in Minnesota are treating their flocks for nodular worm to insure an adequate supply of surgical sutures, which are made from the intestines of sheep. These are merely some examples of the quick response which Minnesota farmers have made to government requests to support the war effort. If food and other farm war supplies are short in 1943, it will not be because of failure in production during 1942.

What of 1943?

It is generally agreed now that our 1942 production record will stand at the peak or near the peak for the war. The need will be greater in 1943 and certainly the efforts put forth will also be greater, but the handicaps to production will be such that farm people will have to push ahead under most trying circumstances.

We must remember that 1942 was an extremely favorable crop year as far as weather was concerned and that our manpower and machinery shortage had not yet reached a critical stage. It is reasonable to assume that any increases that we make in 1943 will be due to greater effort by those who work with crop and livestock production and better management to avoid the drags and wastes that reduce our output. I submit that in order to do the job in 1943, farmers must not only use every known device for increasing efficiency, but each operator should raise the crops which he can handle most efficiently with his land, his help, and his livestock and equipment.

Farmers are well acquainted with the handicaps which they face in 1943, but it is well to review them here for the benefit of those who are less familiar with the farm picture. Take, for instance, the matter of manpower. The country's agriculture has lost more than a million and a half workers during the past year. About a third of these went into the armed services, while the rest were attracted by the higher wages of defense industries. Minnesota agriculture has lost its proportionate share, if not more than its proportionate share, of skilled men.

The shortage of help has already

Crop Experts Given Awards

For outstanding records of service in behalf of better Minnesota crops, two men were awarded the title of premier seed grower at the annual banquet of the Minnesota Crop Improvement association on Thursday night. The banquet closed the state seed show held during Farm and Home Week. Winners of premier seed grower honors were Sigfred J. Sather, Madison, and L. W. Samuelson, Lafayette. Seventy-four premier seed growers have been recognized since the award was first established in 1923. Annual awards are based on the volume of seed produced and the effort spent in popularizing the use of good seed among Minnesota farmers.

become acute this winter on dairy farms of the state. With the rush jobs of the crop season ahead, we can be sure that every available source of farm help will have to be requisitioned. Right now the lack of skilled labor on farms is being met by extra outdoor work on the part of farmers' wives, children and older people beyond retirement age. Few of us realize what sacrifices are being made to keep the farm assembly line operating. With all due respect to the city and town women who are busy in war industries, Red Cross, and civilian defense, or who have joined the WAACS or the WAVES, there is no greater sacrifice today than the one which is being made by farm women who are doing the men's work.

Machinery Another Problem

Machinery and equipment were fairly adequate on Minnesota farms during 1942, but this can not be said of the coming year. We know now that new machinery available in 1943 will be less than 20 per cent of normal. It will take some close figuring (closer than I am able to do) to raise the crop expected of us when 95 per cent of the available machinery is that which is already on the farms and a considerable part of it is so worn that it is approaching the obsolete stage.

Weather conditions in 1943 are, of course, unpredictable. We may have as good a year as 1940, '41, and '42, but we must not be too optimistic in expecting it. The last three years have been extremely favorable, not only in Minnesota but through the country as a whole.

Applying these handicaps to our most critical production problem, that of dairying, we find this situation: Skilled labor of the kind needed for efficient dairy operation is already so short that large numbers of dairy cows have been sent to market for slaughter. Both farmers and dairy leaders agree that this situation has already reached a grave stage. The problems of the dairyman are further complicated by a shortage of protein, which is absolutely necessary for abundance in winter dairy production. Minnesota dairymen succeeded in attaining substantial increases during 1942, but it should be remembered that they had probably the best summer pastures in a quarter century. The dairy production job will indeed be a difficult one during the coming year.

I accept the conclusion that farm people cannot put in much longer hours or work much harder than they have done in the latter part of 1942. If we are to raise, or even maintain, 1942 production levels, we will have to bring to bear on farm jobs the full force of scientific knowledge.

Science and Farm Production

We have heard much of the contributions of science in the industrial field. New products and new processes have followed one another in quick succession. In almost equal measure, science has contributed to farm production. Consider the revolutionary changes in crops. Ten years ago hybrid corn was hardly known outside the laboratory and test plot. Today upwards of 90 per cent of the commercial corn acreage is planted with hybrid seed, resulting in an increased yield of from 20 to 30 per cent. To a large extent the corn in our full ever-normal granary at the beginning of the war came from this increase.

Ten years ago Thatcher wheat was just an experiment. Last year nearly 15 million acres of Thatcher were grown in the United States and Canada. Vickland and Tama oats, bred at Wisconsin and Iowa stations, are now ready for increase on farms. These new oats have out-yielded older varieties by nearly 25 per cent, and they may revolutionize oat pro-

Largest "Tech" Lecture Class Shown



The largest class in the University of Minnesota's Institute of Technology has been conducted for the past twenty-one years by Professor Otto S. Zelner of Civil Engineering.

It is a non-credit course for freshmen, meeting once a week, not to hear lectures in any one particular subject, but to give its members an overview of technology in its various fields and phases, together with some important information which every young professional man should possess.

Professor Zelner is class organizer and master of ceremonies. His lectures, about ten in each of the year's three quarters, he draws from other engineering and scientific departments.

The first quarter is devoted to orienting the students to the University and the Institute of Technology. In the second quarter the various technological departments, such as electrical engineering, chemical engineering, architecture and mining engineering are set forth, lecture by lecture.

Four Regents Are Re-elected

(Continued from page 1, column 5)

the University of Minnesota will receive further consideration but were not passed at that time.

The recommendation with respect to ROTC members and men in the enlisted reserves brought the University requirements into line with those of the Army and Navy and thus obviated conflicts that might otherwise have arisen.

As chairman of the recommending committee Dean Wesley E. Peik of the College of Education made the presentation of the committee's report and recommendations. At present physical education is required by only two colleges, namely, Education and the General College. According to L. F. Keller, acting director of the Department of Physical Education and Athletics, Minnesota physical education facilities could accommodate a considerably larger number of students than are now using them, although use by Army and Navy units is now bringing the program nearer to space capacity.

An impressive case for the construction of a new Mechanical-duction as the hybrids revolutionized corn production.

The step-up in flax acreage in recent years could not have occurred if it had not been for the development of new disease-resistant varieties by the U. S. Department of Agriculture and the state experiment stations.

Minnesota farmers in many cases have been quick to adopt the new higher yielding and better quality varieties which will play an important part in securing the needed wartime food supplies.

Forward strides have been made in the feeding and management of livestock. The scientist has worked out the principles and the farmer, under the guidance of the extension service, has applied them to his farming operations. In ten years, the average egg production per hen in Minnesota has increased 50 per cent, from around 90 eggs per bird per year to 130. Persistent application of demonstrated methods of swine sanitation have increased the number of pigs saved per litter from 5 to 6. Sanitation plus balanced rations have made it possible to market a 200-pound hog in six months instead of the eight or nine months it used to take. Scientists discovered that a drug called phenothiazine will eradicate the nodular worm in sheep. As a result Minnesota sheep raisers are treating their flocks extensively for this pest, thereby increasing the thrift of their flocks and increasing the yield of surgical sutures that can

(Continued on page 4, column 3)

Study Center In Busy Month

Including a conference on government finance, an industrial relations institute on adapting the school curriculum to meet emergency and post-war needs and a repetition of the annual conference on the handling of bulk materials, the Center for Continuation Study, University of Minnesota will have one of its busiest months in February. Fourteen institutes, in all, have been scheduled, according to the director, Julius M. Nolte.

Personnel executives throughout this area have answered inquiries on which the subjects matter of the industrial relations institute will be based and the same has been done with school officials, including those of teacher training institutions, to gather material for the curriculum institute. The symposium on handling bulk materials is chiefly of interest to concerns using heavy equipment, such as those which operate in open pit mines in northern Minnesota.

The seventh annual Pharmaceutical Institute, February 15-17, is also included in the February schedule. Many of the continuation courses will be in the field of medicine, and the Minnesota Bankers Conference will take place February 11, 12, and 13.

The complete list follows: Feb. 1-6, Course in Kenny hot fomentations, which will be repeated Feb. 15-20; Feb. 1, 2, 3, industrial relations; 5 and 6, curriculum; 8, 9 and 10, anesthesiology; 9, 10 and 11, institute for trade and community secretaries; 11, 12 and 13, bankers; 15 and 16, conference on government finance; 15, 16 and 17, pharmaceutical institute; 18, 19 and 20, dietetics; 18, 19 and 20, medical social service; 22, 23 and 24, handling of bulk materials; 22, 23 and 24, continuation course in rheumatic fever; 25, 26 and 27, Institute of cereal chemistry, part II.

Famous Alumnus Killed as Plane Crashes in Guiana

One of the University of Minnesota's outstanding graduates, a man who is probably the most successful social worker ever to be graduated from Minnesota, lost his life in the crash of the Army transport plane in Dutch Guiana in which more than thirty persons were killed two weeks ago. He was William Hodson, Class of 1913, who was on leave from his post as commissioner of welfare and administrator of relief in New York City to a temporary assignment in North Africa to estimate clothing and food needs for the Lehman commission.

This body, headed by former Governor Herbert Lehman of New York, was appointed by President Roosevelt to handle the provision of material supplies in North Africa as part of the diplomacy of winning over the people of that area to the United Nations.

Mr. Hodson did outstanding work in Minneapolis social agencies, and in 1920 went to work in the social agencies of New York, in which he rose rapidly to the top rank. He has also been director of child welfare legislation for the Russell Sage Foundation.

His mother, Mrs. Anna Hodson, lives at 723 Thirteenth Ave. S. E., Minneapolis, where a son, Jeremy, has been making his home while attending the University of Minnesota, in which he is registered as a sophomore.

Aeronautical building has been made by its supporters, including the Board of Regents, the administrative, the faculties of the two engineering departments in question and the Institute of Technology Alumni Association. The Regents, in asking the appropriation of \$1,175,000, point to the inevitably great post-war expansion of aviation, to the excellent record Minnesota's department under Dr. John D. Akerman has been making, to the tremendous industrial importance and recent rapid growth of mechanical engineering department, now headed by Professor Frank B. Rowley, and to the inadequacy of present campus facilities in these fields. Regents concede that materials for construction could not be obtained during the war, but insist that the construction of this building must be approved to be put into effect immediately the war ends. Furthermore, it is pointed out that such an appropriation will add to the postwar cushion of public works which Gov. Harold E. Stassen is striving to create as a means of providing employment when war production tapers off.

Dog Vaccine Distemper Check

Dog owners can now have their pets protected against distemper by a new vaccine, adding another form of treatment to the immunization methods used against this widespread disease. The vaccine is prepared by passing live distemper virus through 50 to 60 ferrets by a method developed by Dr. R. G. Green, University of Minnesota bacteriologist. This deprives the virus of its disease-causing power. But a single injection is claimed to give a dog lifetime protection.

Often called the "Scourge of dogdom," this flu-like disease is highly contagious, often fatal, and occurs in every section of the country in all seasons. Because it is so difficult to treat, veterinarians recommend immunization of puppies as the best protection. Animals 8 to 10 weeks old can be given early immunity by only one injection of the new vaccine, compared to three or four injections required in previous methods of distemper control.

Dr. Bryngelson Wins Honor

Dr. Bryng Bryngelson, head of the speech clinic and work in speech correction in the University of Minnesota, has been elected president of the American Speech Correction association for the coming year. He was informed of his election following a mail ballot subsequent to the association's recent meetings in Chicago. Retiring officers of the association visited Dr. Bryngelson in Minneapolis recently to turn over to him the records and other association paraphernalia.

Wins Library Fellowship

Miss Esther Peterson, member of the cataloguing staff, University of Minnesota library, has been named as the recipient of one of four "fellows in cooperative cataloguing," by the Library of Congress. Her fellowship will take her to Washington, where she will spend three months familiarizing herself with the methods of the general cooperative cataloguing procedure established by that library. Under it, every book in the libraries of 20 great American universities has a catalogue card made for it to provide a clue to the place where scholars at universities not having the books may obtain them. Miss Peterson will subsequently return to her job at Minnesota.

More Iron Ore May Be Found

Kolthoff Helps Rubber Research

Dentists Chalk Up 35 Years Campus Duty

Geologist Knows All About Cold

(Continued from page 1, column 4)

Cuyuna range that was supposed to be 100 feet thick is actually 200 feet thick and that, furthermore, a new "horizon" or rock layer in the formation, 100 feet in thickness, is composed of these manganese-bearing carbonates. This is distinctly encouraging to future considerations of manganese extraction in Minnesota. The manganese in the carbonates is more easily soluble than that in other ores, making such ore desirable for certain of the cheap extractive processes.

Evidence found by Grout and Wolff indicates that the rock formations of the Mesabe and Cuyuna ranges are identical. The sequence of the various types of rock layers is the same in the two areas. Within one of the major "horizons" the lower cherty, the same divisions and peculiarities occur on the two ranges. Furthermore, he has found the same granular type of formation within the rocks on the Cuyuna as that which is well known on the Mesabe. Many geologists have denied heretofore that this granular form could be identified in materials from the Cuyuna range.

Major hope for finding new iron ranges in Minnesota lies in the evidence given by magnetic surveys of the state, Dr. Grout said. These indicate that in a broad area sloping from northeast to southwest across the state, clear to the South Dakota borders, and including the great ranges, there are strong magnetic indications of further ore beds. Some of these have been mapped and made public. Others were made years ago (1903) by a Wisconsin geologist who has refused to make his material public. Whether it would pay the state to duplicate work that is known to have been done, though not available, is a question in the mind of the Minnesota professor.

Magnetic surveys are made by two men, each carrying a different type of compass. Because ore formations make magnetic needles of compasses behave abnormally, one man carries a compass known as a "dial" which shows the deflection of the regular compass needle on account of the iron. The other man carries a "dip needle," or compass placed vertically rather than in the usual horizontal position. As they pass over the ground, presence of ore bodies of varying extent exerts a different degree of pull, or deflection, upon the compass needle. The men advance in a straight line, usually a section or quarter line, and record the extent of deflection every fifty or 100 paces. In this way they can cover about four miles a day. Lines are drawn on a map through the points of greatest deflection and when a considerable area has been covered the map reveals the magnetic strength of the underground ore bodies.

Dr. Grout believes in the possibilities of further important iron ore discoveries over an area of Minnesota ranging from about the position of Mille Lacs northward to the border. In certain parts of this region strong magnetic indications have been mapped.

Is the Cuyuna range a re-appearance of the Mesabe after an underground dip of nearly 100 miles? Does the Mesabe range indeed curve southward through the Cuyuna and then back eastward into Wisconsin and the Wisconsin ranges, as some have believed? Will further important primary iron ore deposits be found in this state? Will they be available for underground mining such as is done on the Vermilion range at Ely and Tower, or will they be open pit deposits, typical of the Mesabe and Cuyuna ranges? These are some of the questions geologists are asking themselves, Dr. Grout revealed. They are of vast importance, both to the future prosperity of the state of Minnesota and its people and to the national economy. The greater part of the steel used in the colossal war effort of the United States is made from iron ore mined in northern Minnesota. It is a major raw-material arsenal of our mighty country. No wonder geologists are on the lookout for all the deposits of so vital a material as they can find.

The present comparative importance of the Mesabe and Cuyuna ranges, as shown in 1941 shipping figures (which were greatly increased last year) were, for the Mesabe, about 60 million tons of ore, and for the Cuyuna, about 2,000,000.

A University of Minnesota chemist will take an important part in the United States' program for developing synthetic rubber following approval by the Board of Regents today of Dr. I. M. Kolthoff's application to go on half-time service as a teacher. Dr. Kolthoff, head of the division of analytical chemistry, has been asked to serve as chairman of the Committee on Analytical Research Methods and supervisor of researches to be undertaken at three American universities by the Rubber Director's Office. In both capacities his work will be under William M. Jeffers' organization. Dr. Kolthoff will begin his new half-time government work as soon as he recovers from a recent serious operation in University Hospital.

President W. C. Coffey also told the board that since its last meeting nine new confidential scientific research projects have been begun on the campus under contract with the Office of Scientific Research and Development.

Dr. Harold S. Diehl, dean of the Medical Sciences, was given permission to seek funds for a research project on the management of duodenal and gastric ulcers which is being carried on by Dr. Owen H. Wangenstein, head of the division of surgery, who is following new lines in some of his investigations of this widespread human ailment.

Two Who Direct Sigma Xi Plans



Dr. Harold Macy

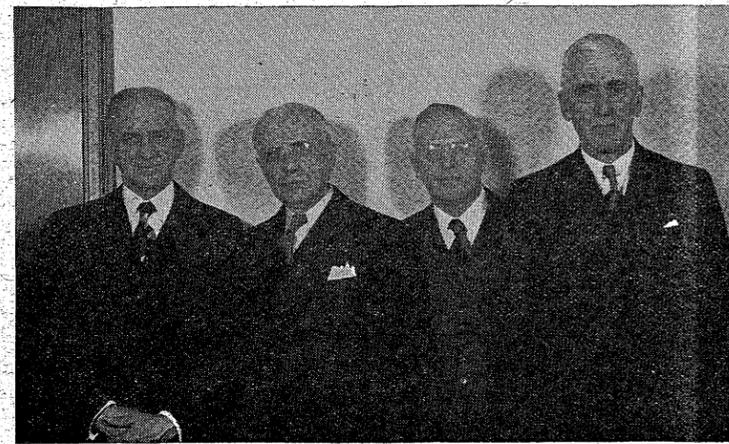


Harold P. Klug

Dr. Harold Macy, (top) professor of dairy bacteriology, University Farm, and Dr. Harold P. Klug, assistant professor of inorganic chemistry, are president and secretary-treasurer, respectively, this year of the Minnesota chapter of Sigma Xi, which will bring to the campus three outstanding speakers on science. The lecturers are among those routed to various universities by the national Sigma Xi organization. First of the three speakers will appear this month, he being Professor D. W. Bronk, neurologist of the University of Pennsylvania, who will speak the evening of Feb. 10 in Medical Science amphitheater.

Dr. Macy, graduate of Cornell University with a doctor's degree from Iowa State, has been at Minnesota since 1919. During the last war he was bacteriologist and chief sanitary inspector of the Red Cross sanitary service and is at present a reserve major of the sanitary corps, U. S. Army. Member of many societies, he is co-author of "Milk and Milk Products" and author of the 20 year index of the Journal of Dairy Science.

Dr. Klug, now in his seventh year at Minnesota, came here from the University of Idaho in 1937.



Four "old timers" who have been on the staff of the School of Dentistry since 1908, making thirty-five years, recently had lunch together in the Campus Club and then thought it a good idea to have their picture taken together. Above you can see them. Left to right, these youthful appearing "veterans" are: Dr. Amos S. Wells, professor of clinical dentistry, who came to the school as a student assistant in 1904 and obtained his dental degree in 1906. He has been a professor since 1919 and is chairman of crown and bridge work; Dr. George M. Dawson, '07, who became a student assistant in 1907 and has been a professor since 1917, his title being professor of oral anatomy and prosthetic dentistry; he also has charge of freshman courses in dental technique; Dr. Robert O. Green, Class of 1904, who joined the faculty of the School of Dentistry in 1908 and is chairman of operative dentistry; Dean William F. Lasby, whose DDS degree from Minnesota is dated in 1903. A graduate of Carleton College, Dr. Lasby joined the Minnesota faculty in January 1904. He became professor in 1919 and has been dean of the school since 1927.

Call for Food Puts State in Biggest Job

Come and get it! Minnesota farmers will have the biggest job ever in 1943 in the nation's effort to hoist food production to an all-time high basis. A key food state, Minnesota ranks first in production of butter, second in milk and third in eggs.

The national goal set for milk in 1943 is 122,000,000,000 pounds of which Minnesota's share for 1943 is to be 9,200,000,000 pounds. Eight pounds of fluid milk are required to make one pound of powdered milk; the form used in large quantities for shipment overseas.

Minnesota's estimated 1942 egg production is 230,757,000 dozen eggs. The state goal for 1943 is 267,634,000 dozen eggs compared with the national goal of 4,780,000,000 dozen. Chickens on farms in the state at the end of 1942 is estimated at 44,695,000 by Cora Cooke, poultry specialist at University Farm. Minnesota's job will be to increase the production of chickens to 48,271,000.

Minnesota's shares in the nation's livestock production goal of 30,400,000 calves and cattle and 25,100,000 sheep and lambs are 1,977,000 and 1,177,000 respectively. Production goals for Minnesota have also been set for turkeys and hogs as well as for such crops as flax, corn, hemp and potatoes.

Farm and Home Plans Mature

"Strengthening the home base" for the great responsibilities of wartime will be the theme of the annual Farm and Home Week to be held at University Farm, January 18-22, announces J. O. Christianson, director of agricultural short courses for the University of Minnesota. The wartime short course for farmers and homemakers will deal directly with the problems of keeping rural morale high and assuring adequate food production from Minnesota farms in spite of the increasingly serious shortages of manpower and material.

"We are sure that farm people who can arrange their work so that they can get away for the week will be repaid manyfold for time spent in new ideas in farming and neighborhood cooperation that will be presented. One of the features will be a special training course in community leadership with special emphasis on what neighborhood leaders can do by way of special service in wartime," says Mr. Christianson.

As in past years, the Farm and Home Week program will bring nationally known men and women to speak to Minnesota farm people. And there will be classes in food and clothing conservation, farm production, care of machinery and equipment, labor saving devices for farm and home, and many other topics that bear directly on the big responsibility of the rural community in the war.

Red River Shows Going This Week On N. W. Campus

The thirty-third annual Northwest School Farmers' and Homemakers' Week and Red River Valley Winter Shows are being held at Crookston, Minnesota, February 1-5, 1943. T. M. McCall, superintendent of the Northwest School and president of the Winter Shows, attributes the success of the meetings and shows to the fine cooperation of the University of Minnesota, State Legislature, Red River Valley counties and the valley-wide organizations of livestock, poultry, and crops breeders, dairymen's association, and the local Chamber of Commerce.

The total attendance for day and night meetings and shows for the five-day period has varied, through the years, from 13,000 to 19,000 people, which makes the Crookston shows and meetings the largest winter educational meetings of the mid-Northwest.

"Food for Victory," the slogan adopted for the 1943 Farmers' Week and Winter Shows, appropriately describes the objectives of the week in all meetings, showings of crops, poultry, livestock, and educational exhibits.

The interstate subcollegiate livestock and crops judging contests and the Northwest Minnesota High School livestock judging contests are the feature attraction of the opening day of the shows on Monday, February first. Beginning on February 2 and running through Friday, February 5, the men's program will be devoted to Food for Victory in crops, livestock, potatoes, and poultry. The women will start with Victory Gardens on February 2 and continue with Health Day, Foods and Clothing Days.

Student Placement In Teaching Rises

There are very good opportunities for early placement of students in the College of Education because of the critical shortage of teachers, Wesley E. Peik, dean of the College of Education, said recently.

"Inexperienced students placed during December are earning \$145 to \$160 a month in contrast to salaries ranging at least \$30 less earned by students who left school last spring," he said.

Early placement of students who have a good scholastic average are being provided for through a new acceleration program adopted in the College of Education.

Sir Norman Angell Here

Sir Norman Angell, British journalist and lecturer, was the University of Minnesota convocation speaker Thursday, January 21, when he discussed "The Roots of the War and the Revolution," speaking in Northrop Memorial Auditorium at 11:30 a.m. Winner of the Nobel peace prize in 1933, Sir Norman probably is best known for such of his books as, "The Great Illusion," and "America's Dilemma—Alone or Allied." He was knighted in 1931 for his accomplishments as a publicist.

Twenty degrees below zero in Minnesota is obviously not as cold as 72 degrees below zero in Antarctica, but it can seem as cold.

At least that's the opinion of Dr. Lawrence M. Gould, who is on leave from Carleton to serve as director of the Arctic Information Bureau on the University campus. And he should know, for he was second in command of Rear Admiral Richard E. Byrd's expedition to the south pole in 1928.

It all depends on the clothes you wear, Dr. Gould said.

"In the polar regions, we dress for the weather," he said. "Here in Minnesota, I wear the same underwear in winter as in summer."

In Dr. Gould's job on campus, he directs the collection of statistics and other information on the Arctic regions for the army air forces. But any explanation beyond that would be military information.

Seventy-two below, however, is not the coldest weather in the world, he explained. In Siberia, the temperature goes to 94 degrees below zero in winter and often as high as 94 above in summer.

The professor of geology has been doing exploratory work in the cold regions since 1926. At that time he was second in command of the University of Michigan Greenland expedition. Other polar expeditions following including the 1927 Putnam expedition to Baffin island in which he was second in command, the 1928-30 Byrd trip and a trip to the Russian arctic on an icebreaker in 1937.

People probably wonder why he doesn't tire of this work, but Dr. Gould has a ready answer. He explained that the incentive for most of his exploratory work is the lure of the unknown.

"The greatest thrills I have experienced in my work have been to gaze on territory in the polar regions; territory you know has never before been seen by humans," he said. "And that territory has been there for hundreds of thousands of years in its native state."

Minnesota, itself, is one of the more interesting spots for geological study, Dr. Gould continued. For here are some of the best and most abundant records of the great ice age.

Dr. Gould's geological interests are not limited to the polar regions. He has made studies of the southwest desert regions in this country. "And when I retire," he said, "I would like to live in this southwest desert country."

Dr. Gould has written a book entitled "Gold," in which he tells of his experiences on a 1,500 mile sled dog trip at "Little America." During this trip, the temperature averaged 38 below zero. Purpose of the trip, he said, was to gather material for future mapping and to collect information on geological deposits.

Dean Stevenson On Bank Board

Dean Russell A. Stevenson, head of the School of Business Administration, has been elected to the board of directors of a Minneapolis bank, the Northwestern National. President W. C. Coffey told the Board of Regents that such a contact would have several values, particularly that of bringing the business school into actual touch with an important business organization. For several years President Coffey has been chairman of the Board of Directors of the Minneapolis Federal Reserve bank, appointed from Washington.

Finds More White Stars

Twelve more of the "white stars," of which he has already found many others, have been discovered by Dr. Willem (right) J. Luyten, University of Minnesota astronomer. Although they shine with a faint and feeble light, these stars have a substance so highly compressed, he said, that a single cubic inch of their substance must weigh several hundred tons and one of the stars he has found, in the constellation Aquarius, probably weighs as much as the sun, although its light is one-thousand times more feeble. The observations on which the present conclusions are based were made with the 24-inch telescope of the Harvard Observatory at Bloemfontein, South Africa, when Dr. Luyten was there in 1928-'30 and with a 36-inch telescope of the University of Arizona more recently.

MINNESOTA CHATS

Food Problems of War Discussed by President Coffey

Published every three weeks from October 1st to June 7th, except during vacation periods, by the University of Minnesota as an informal report of its activities to the fathers and mothers of its students.

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(Continued from page 1, cols. 2 and 3)

How could I answer the child? I do not know what it is any more than he.

I guess it must be the flag of my disposition, out of hopeful green stuff woven.

Or I guess it is the handkerchief of the Lord,
A scented gift and remembrancer, designedly dropt,
Bearing the owner's name someway in the corners, that we may see,
and remark, and say, "Whose?"

Or I guess the grass is itself a child, the produced babe of the vegetation.

Or I guess it is a uniform hieroglyphic,
And it means, Sprouting alike in broad zones and narrow zones,
Growing among black folks as among white,
Kanuck, Tuckahoe, Congressman, Cuff, I give them the same,
I receive them the same.

And now it seems to me the beautiful uncut hair of graves.

Tenderly I will use you, curling grass,
It may be you transpire from the breasts of young men,
It may be if I had known them I would have loved them,
It may be you are from old people, or from offspring taken soon out
of their mothers' laps,
And here you are the mothers' laps.

This grass is very dark to be from the white heads of old mothers,
Darker than the colorless beards of old men,
Dark to come from under the faint red roofs of mouths.
O I perceive after all so many uttering tongues,
And I perceive they do not come from the roofs of mouths for nothing.

I wish I could translate the hints about the dead young men and
women,
And the hints about old men and mothers, and the offspring taken
soon out of their laps.

What do you think has become of the young and old men?
And what do you think has become of the women and children?

They are alive and well somewhere,
The smallest sprout shows there is really no death,
And if there ever was it led forward to life, and does not wait at
the end to arrest it,
And ceas'd the moment life appear'd.

All goes onward and outward, nothing collapses,
And to die is different from what one supposed, and luckier.

Has any one supposed it lucky to be born?
I hasten to inform him or her it is just as lucky to die, and I know it.

I pass death with the dying and birth with the new-wash'd babe and
am not contained between my hat and boots,
And peruse manifold objects, no two alike and every one good,
The earth good, and the stars good, and their adjuncts all good.

I am not an earth nor an adjunct of an earth,
I am the mate and companion of all people, all just as immortal and
fathomless as myself,
(They do not know how immortal, but I know.)

Every kind for itself and its own, for me mine, male and female,
For me those that have been boys and that love women,
For me the man that is proud and feels how it stings to be slighted,
For me the sweetheart and the old maid, for me mothers and the
mothers of mothers,
For me lips that have smiled, eyes that have shed tears,
For me children and the begetters of children.

Undrape! you are not guilty to me, nor stale nor discarded,
I see through the broadcloth and gingham whether or no,
And am around, tenacious, acquisitive, tireless and cannot be shaken
away.

The big doors of the country barn stand open and read,
The dried grass of the harvest-time loads the slow-drawn wagon,
The clear light plays on the brown grey and green intertinged,
The armfuls are packed to the sagging mow.

I am there, I help, I came stretch'd atop of the load,
I felt its soft jolts, one leg reclined on the other,
I jump from the cross-beams and seize the clover and timothy,
And roll head over heels and tangle my hair full of wisps.

Alone far in the wilds and mountains I hunt,
Wandering amazed at my own lightness and glee,
In the late afternoon choosing a safe spot to pass the night,
Kindling a fire and broiling the fresh-killed game,
Falling asleep on the gathered leaves with my dog and my gun by
my side.

The Yankee Clipper is under her sky-sails, she cuts the sparkle and
scud,
My eyes settle the land, I bend at her prow or shout joyously from
the deck.

The boatmen and clam-diggers arose early and stopt for me,
I tuck'd my trower-ends in my boots and went and had a good time;
You should have seen us that day around the chowder-kettle.

In me the caresser of life wherever moving, backward as well as
forward sluing,
To niches aside and junior bending, not a person or object missing,
absorbing all to myself and for this song.
Oxen that rattle the yoke and chain or halt in the leafy shade, what
is that you express in your eyes?
It seems to me more than all the print I have read in my life.

My tread scares the wood-drake and wood-duck on my distant and
day-long ramble,
They rise together, they slowly circle around.

I believe in those wing'd purposes,
And acknowledge red, yellow, white, playing within me,

(Continued from page 2, column 3)

be made from the intestines of sheep only if they are free of the damage caused by this parasite.

Turning to the field of machinery and equipment we find an equally rapid advance. The farmer of World War I would hardly recognize the machines that work in the field today. Without these vastly improved machines, the production job of today would seem utterly hopeless.

In the face of all these improvements, the technical man tells us that our best chance of further increasing production to meet the present crisis lies in further application of science and technology to our farming. He reminds us that our averages are still very discouraging when compared to the output of our more efficient farmers. The average butterfat production per cow for Minnesota is about 190 pounds compared with 324 pounds per cow for cow testing association members in 1942.

We still lose one-third of all pigs farrowed, and another third fail to make profitable gains because of parasites, disease and poor feeding. Only one-third of the pigs farrowed make the gains

desirable for economical pork production.

We still lost six million chicks each year in Minnesota, though I am told that the poultry people have launched a campaign to cut this loss in half. Egg production per hen might be raised from 130 to 180 with adoption of a few fundamental management practices provided the proper kinds and amounts of feed are available.

The increase does not call for some unattainable ideal of management, but methods which have been tried by practical, hard-headed farmers and found to be profitable.

Must Treat Pigs Better

Similarly, swine men say the key to fewer hog losses is adoption of swine sanitation practices that have been tried by farmers and found to be effective. Pigs raised on clean ground and fed balanced rations can be marketed earlier and require much less feed and labor per 100 pounds of pork produced.

Both poultry and swine growers have found that clean ground and balanced feeding, together with proper housing and management, will raise production while conserving feed and manpower.

And consider green and violet and the tufted crown intentional,
And do not call the tortoise unworthy because she is not something
else,
And the jay in the woods never studied the gamut, yet trills pretty
well to me,
And the look of the bay mare shames silliness out of me.

The wild gander leads his flock through the cool night,
"Ya-honk" he says, and sounds it down to me like an invitation,
The pert may suppose it meaningless, but I listen close,
Find its purpose and place up there toward the wintry sky.

The sharp-hoofed moose of the north, the cat on the house-sill, the
chickadee, the prairie-dog,
The litter of the grunting sow as they tug at her teats,
The brood of the turkey hen, and she with her half-spread wings,
I see in them and myself the same old law.

The press of my foot to earth springs a hundred affections,
They scorn the best I can do to relate them.

I am enamoured of growing out-doors,
Of men that live among cattle or taste of the ocean or woods,
Of the builders and steers of ships and the wielders of axes and
mauls, and the drivers of horses,
I can eat and sleep with them week in and week out.

What is commonest, cheapest, nearest, easiest, is Me,
Me going in for my chances, spending for vast returns,
Adorning myself to bestow myself on the first that will take me,
Not asking the sky to come down to my good will,
Scattering it freely forever.

* * *

These are really the thoughts of all men in all ages and lands, they
are not original with me,
If they are not yours as much as mine they are nothing, or next to
nothing,
If they are not the riddle and the untying of the riddle they are
nothing,
If they are not just as close as they are distant they are nothing.
This is the grass that grows wherever the land is and the water is,
This is the common air that bathes the globe.

With music strong I come, with my cornets and my drums,
I play not marches for accepted persons only, I play marches for
conquered and slain persons.

Have you heard that it was good to gain the day?
I also say it is good to fall, battles are lost in the same spirit in which
they are won.

I beat and pound for the dead,
I blow through my embouchures my loudest and gayest for them.

Vivas to those who have failed!
And to those whose war-vessels sank in the sea!
And to those themselves who sank in the sea!
And to all generals that lost engagements, and all overcome heroes!
And the numberless unknown heroes equal to the greatest heroes
known!

* * *

I am the poet of the body and I am the poet of the Soul,
The pleasures of heaven are with me and the pains of hell are with me,
The first I graft and increase upon myself, the latter I translate into
a new tongue.

I am the poet of the woman the same as the man,
And I say it is as great to be a woman as to be a man,
And I say there is nothing greater than the mother of men.

I chant the chant of dilation or pride,
We have had ducking and deprecating about enough,
I show that size is only development.

Have you outstript the rest? Are you the President?
It is a trifle, they will more than arrive there every one, and still
pass on.

I am he that walks with the tender and growing night,
I call to the earth and sea half-held by the night.

Press close bare-bosomed night—press close magnetic nourishing
night!
Night of south winds—night of the large few stars
Still nodding night—mad naked summer night.

Smile O voluptuous cool-breath'd earth!
Earth of the slumbering and liquid trees!
Earth of departed sunset—earth of mountains misty-top't!
Earth of the vitreous pour of the full moon just tinged with blue!
Earth of shine and dark mottling the tide of the river!
Earth of the limpid grey of clouds brighter and clearer for my sake!
Far-swooping elbow'd earth—rich apple-blossom'd earth!
Smile, for your lover comes.

Prodigal, you have given me love—therefore I to you give love!
O unspeakable passionate love.

The kind of practices I am referring to, are now in use on many thousands of our farms. They are the very practices that have contributed so much to our total production during the past year. While they have been adopted by many successful farmers, they have been either ignored or only partly accepted by far too many others. Farmers and scientists must work together as never before to bring about complete use of every bit of useful information that will help get full production from our resources.

Not only should we make full use of present knowledge, but we need to revamp our research programs to find quick answers to the problems that stand between us and the food we need to win the war. We need to explore every possibility of short cuts to larger and better production.

The director of research for the U. S. Department of Agriculture told me the other day that the Department has put 55 per cent of its regular research program into cold storage for the duration of the war in order that every possible facility may be harnessed to the war effort. Scientists in the U. S. Department of Agriculture are, among many other things, now putting in full time on projects such as condensed rations for horses as well as men and in combating tropical diseases and insects which can seriously hamper war operations. The Department has not put 55 of its normal researches into cold storage because they are no longer of great importance, but rather because certain problems related to the war are now more urgent.

University Farm Program

Our scientists at the University of Minnesota have also laid aside research that can wait in order to concentrate on the urgent needs of wartime production. Many have left the University to serve in war jobs. Those that remain are pledged to use every possible opportunity to contribute to the war effort through teaching and research. During the coming year the agricultural experiment stations at University Farm, Morris, Crookston, Grand Rapids, Duluth, and Waseca will be at the service of Minnesota farmers in seeking ways to overcome production difficulties. If necessary, these schools will assist in training emergency farm help. Recently, Ohio State University undertook to train a group of less skilled farmers for the more painstaking operations of dairying and poultry production. We are disposed to set up similar training courses here in Minnesota if and when our farmers call for them.

It goes without saying that all experimental knowledge which has been uncovered at the University station and its branches will be made available immediately through the Extension Service if the new information will help boost the food output.

Like the U. S. Department of Agriculture, the University Department of Agriculture is pledged first and foremost to help produce food in 1943. We are not alone in that pledge. I am sure our intentions are shared by the state government and its various services, industry and labor and all civic groups that play a part in the state's welfare.

However, the key role still falls on the farmer and his family. The work will be hard, the conditions will often be discouraging, but realizing that the need is great we know that we can depend on the will to do by rural America.

America should reciprocate by insuring an adequate financial incentive for the extreme effort needed to attain the goals. I am not sure that to date this matter has received the consideration it ought to have. We should encourage each farm operator to take an inventory of his resources to see what he can do best, and urge him to concentrate his efforts in those directions.

Production policies should be guided in this extreme emergency by (1) What is needed, (2) What can be produced most efficiently under the conditions on each farm.

It is of first importance now that every possible pound of food be grown on our farms. All other considerations in agriculture are secondary.

Food production is that important because it is needed to win the war and open the way for a peace that can preserve our way of life. Farm people have a stake in that way of life. We all have.

And so, today, we salute the food growers of America.



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Rally to School Support Urged By Educators

Emergency, short-time certification of teachers to help fill a growing teacher shortage, scholarships for persons who wish to enter intensive teacher-training programs, an effort to retain teachers against the higher salary bidding of industry and, in some cases, consolidation of school districts that might not be able to carry on alone, were among recommendations at the recent annual Conference on Teacher Training at the University of Minnesota.

Those attending, mostly school and college administrators, also urged that schools keep their eyes on the post-war educational problems they must surely face, and fight against any depletion of the educational program that would make the postwar task unduly difficult. Dean Wesley E. Peik of the College of Education, presided.

They asked a state-wide co-operating committee to hold up the school's purposes and advised caution in approving applications of high school non-graduates for admission to college.

The report was signed by F. E. Heinemann of the state department of education, Russell M. Cooper of Cornell College, Iowa, M. J. Nelson of State Teachers College, Cedar Falls, Ia., and Clifford P. Archer, University of Minnesota. The resolutions said:

1. Whereas there is a trend to accept for college entrance persons from high schools, it is recommended that discretion should be exercised in the admission of students after only three years of high school work and that the practice should be safeguarded by making sure that students so admitted are sufficiently mature intellectually, socially and emotionally. The candidate for college work should be admitted only after consultation with the local administrative officers.

2. Whereas the national emergency has created many problems for the schools, be it resolved that there be set up in each of the several states a cooperating committee on teacher education and certification to be composed of representatives of the various teacher education institutions, public schools, state departments of education, congress of parents and teachers, and state wide organizations for the following purposes:

To study and recommend emergency changes in certification in anticipation of critical teacher shortages. It is believed that emergency certificates should be issued for limited periods only and be made renewable only upon evidence of additional qualifications.

To study and recommend to the proper state and federal authorities, a program of scholarships for those who are competent, who may wish to enter teacher training and who are not financially able to afford a college education. Scholarships should be used to encourage an accelerated training program during the emergency.

To promote a statewide plan of in-service education through workshop or extension classes to be conducted for credit on a regional basis. It is suggested that funds be secured through legislation and the faculties of various colleges be used in the teaching program.

3. Whereas a supply of teachers is inadequate for the needs of the schools and whereas there is a real danger of schools with large enrollments being unable to operate because of inability to get teachers, we urge local school districts to study the feasibility of combining the educational programs of adjoining districts to utilize teaching services effectively and economically and thus relieve the teacher shortage.

4. Whereas the cost of living has increased and whereas higher wages paid by industry are rapidly depleting the teacher supply, local school districts are urged to increase teachers' salaries to encourage able teachers to remain in the profession. To facilitate this program legislators are urged to

Ah, Happy Days (Unhappy Collars) of Yesteryear



Professor Dwight E. Minnich, head of the department of Zoology, is the discoverer of this photograph, showing a class in histology in the zoology laboratory in 1900. The two men standing, both teachers, are Prof. Emeritus C. P. Sigertsoos, who now makes his home in Ohio, and the late Prof. H. F. Nachtrieb. Students seated at the table are, left to right: H. L. Tasa, R. B. Stephenson, C. E. Johnson, W. F. Braasch, Fred W. Smith and George Belden. Braasch is Dr. Braasch, famous urologist of the Mayo Clinic and former president of the University of Minnesota General Alumni Association.

Man Through Science Seeks to Adapt Body Control to Flight Requirements

Natural Mechanisms Involving Oxygen Supply, Balance and Consciousness Inadequate

Exceedingly delicate means for measuring changes in nerve cells, which are the body's key mechanisms for keeping in balance with its environment, have been described by Dr. D. W. Bronk, professor of biophysics, director of the Johnson Research Foundation, and director of the Institute of Neurology, of the University of Pennsylvania. He spoke in Medical Science amphitheater the evening of Feb. 10 on the subject, "The human machine in aerial warfare." Dr. Bronk's was the first of three lectures by speakers representing the national Sigma Xi organization that will be given on the Minnesota campus this year. He spoke under joint auspices of the Minnesota chapter of Sigma Xi and the Medical School.

Next speaker in the series, to appear either March 10 or 11, will be Dr. G. D. Birkhoff, Harvard mathematician, with the topic, "Mathematical nature of modern physical theories."

Man keeps adjusted to his sometimes difficult environment partly through the adaptive capacities of his own body, partly by means of machines which he has himself invented; but in both kinds of adjustment the nervous system plays an essential role, Dr. Bronk said. The importance of a close understanding of its workings is therefore beyond argument.

One means for better understanding of the nerve cells' physiology, as described by Dr. Bronk, is the isolation of single living cells and their examination by means of electrical, optical and electron-microscopic methods. The

provide adequate financial support for districts unable to meet these necessary rising educational costs.

5. While maintaining their present program of wholehearted co-operation in the war effort, schools and colleges must not lose sight of their fundamental responsibility in preparing youth and the adults in our communities to meet the problems of peace and reconstruction. It is imperative that the importance of schools in the war effort and in post-war adjustments be recognized by governmental authorities as a vital phase of the national effort to attain a total victory.

latter, in particular, are giving new data on the submicroscopic architecture of living cells that could only be guessed at before the invention of the electron microscope.

Exact information on the nerve cells' oxygen state can be obtained by means of a microscopic metallic electrode which can be inserted into various parts of the nervous system. This instrument has produced evidence that brain cells have a very low oxygen tension, so that even momentary let-downs in the full supply of oxygen, via the blood, can cause unconsciousness. This is well exemplified by the "blackout" that diving aviators experience when they suddenly pull out of a steep, fast dive.

He said that man has the capacity to live under a wide range of environmental conditions. This is due in part to the remarkably precise and sensitive physiological mechanisms which maintain within narrow limits the physical and chemical conditions within the body despite wide fluctuations in the external surroundings. The range of environment in which he can survive is further extended by the machines which he has developed for his protection and for extending the range of his actions. In both his natural and in his machine-aided adaptations, the nervous system plays an essential role. Only through an adequate understanding of the mechanisms of the nervous system is it possible to specify the most favorable conditions of life and to devise machines that will most effectively extend the scope of our natural powers.

The cellular units of the nervous system are the agents primarily responsible for maintaining the relations between the body and its environment. Through them, behavior of the organism is under the control of external influences. Their unique characteristics for the exercise of these functions is the extreme sensitivity of their basic molecular structure to specify changes in their physical-chemical surroundings. A fundamental problem of biology is accordingly a determination of that structure and a measurement of how it is altered under external influences.

New Study Techniques

The attack on this problem has been aided in recent years by the parallel development of new biological techniques and of physical methods. Procedures have been devised for isolating single living

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March Graduation Set for Evening; Class to Be Large

Commencement exercises at the close of the winter quarter, March 18, will be conducted at 8:15 p. m. in Northrop Memorial Auditorium rather than at 11 a. m. as has recently been usual at graduation exercises except the big June commencement. The change was requested by the students, who pointed out that an unusually large number are graduating, nearly 700, as compared with about half that number at usual March ceremonies. The increase has been brought about by year-around instruction in several colleges under an accelerated program. This has brought many to the point of graduation one-quarter year earlier than they would have reached graduation, otherwise. Commencement speaker will be President Robert L. Stearns of the University of Colorado. Full formal commencement ceremonies are being arranged by the Committee on University Functions, according to E. B. Pierce, chairman.

Teeter Family Busy in War Reports Show

Two members of the family of T. A. H. Teeter, director of the University of Minnesota summer sessions, have been prominently in the news recently in connection with activities at battle fronts. His son, Lt. Philip H. Teeter, 23, was one of 44 officers and men decorated by Vice-Admiral William L. Calhoun at Pearl Harbor about two weeks ago. Lt. Teeter successfully led a group of men who fought fires on the Destroyer Smith after a crashing enemy plane had struck it in the battle of Santa Cruz. He is a graduate of Marshall high school and of the combined business-engineering course at Minnesota.

Meanwhile word came from the North African front that Pearl M. Hargreaves, member of the Waacs, was one of several girls assigned to drive cars at the headquarters of Lt. Gen. Dwight Eisenhower. Miss Hargreaves is a sister of Mrs. Teeter, who for five years made her home with that family. She has also taught school at Piller, Minn.

State Provides Third of Cost At University

Complete Financial Operations Shown in Report by W. T. Middlebrook

U. S. FUNDS A FACTOR

University's Own Operations Produce More Than Five and a Half Millions

With a legislative maintenance appropriation of \$3,727,910 and other items bringing the total to \$4,869,957, the state of Minnesota contributed from tax funds slightly over one-third, or 36.5 percent of the income of the University of Minnesota during the last fiscal year, the annual report of Comptroller W. T. Middlebrook shows. The remainder of the university's income of \$13,319,187.85 came from federal funds, university permanent fund income, actual operations of the institution, trust fund income and intercollegiate athletics.

Of the state's contribution over and above the \$3,727,910 maintenance appropriation, \$200,000 represented the state's share of caring for indigent county patients in University hospitals. Another \$242,604.15 came from the 23/100 millage tax and \$353,443.93 was the total of many smaller special appropriations made each biennium by the Legislature. These include the salaries of county agents, which are disbursed through the University of Minnesota, iron and manganese ore investigations, a variety of important agricultural projects, child welfare and psychopathic hospital operations, and the like. State money for physical plant extensions came to \$346,000.

Federal Contributions

From the federal government under various appropriations to Land Grant Colleges the university received \$784,923.44 and from the income of the permanent university fund and the swamp land fund, \$417,462, of which \$77,379.10 was from the swamp land fund.

The university produced more than five and a half million dollars by its own operations, a sum considerably greater than all state appropriations. Thus fees and receipts amounted to \$2,627,805 and income of self-supporting service enterprises and revolving funds was \$2,876,585, making the total of these items \$5,503,890. The latter category, however, does not represent free money, as outgo from service enterprises and revolving funds approximately matches income.

University trust funds, including maturities, which are recorded as income, and the yield of Mayo Foundation securities, produced \$1,296,605 of the year's gross income.

Gross income from intercollegiate athletics, after payment of the shares of visiting teams in the receipts of home games, came to \$446,346.82, against which was balanced the operating expense of intercollegiate athletics and that part of the physical education expense paid from those receipts, namely, \$261,676.91, leaving a gain from athletics of \$184,658.86 for the year.

Teaching, Research Cost Most

Largest item of outgo for the university is instruction and research, under which head costs were \$6,286,439, while the next to the smallest item was administration, which accounted for \$224,199 of the total expenditures of \$12,288,048. General university costs, such as the library, bulletins and publications, convocations, inter-campus trolley and other projects of a campus-wide character, came to \$609,288, and physical plant operation, including maintenance and heating of the buildings cost the Board of Regents \$864,714.48. Physical plant extensions amounted to an additional \$211,851.

Outgo for self-supporting service enterprises and revolving funds came to \$2,601,926, under which head are included dormi-

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Student in 'U' Dental School Writes Prize Junior Essay

**Calls Professional Organization Chief Bulwark
Against Illegal Practice**

Phillip S. Loechler, Dentistry '46, University of Minnesota student whose home is in Rochester, has written the prize essay for junior members in the American Dental Association's Junior Membership contest, and his paper, entitled, "The Value of Dental Organization," appeared in the December mid-month issue of The Journal of the American Dental Association.

The essay, which was brought to the attention of "Minnesota Chats" by Dean W. F. Lasby, follows:

Past achievements of organized dentistry have more than proved the value of a united effort in the behalf of one of the most eminent professions of the day.

A group is only as staunch as the ethics upon which it is founded. Since the year 1834, organized dentistry has been a bulwark against illegal practices. Quacks and the more inelegant practitioners have been the chief recipients of censorship. Organization has controlled the quality of dental service offered to the public by examination and licensure. The license fees which the dentist pays provide for the enforcement of ethics and prevent illegal competition from the laboratories and back room technicians. It is the representative of American dentistry and the only group that can speak with authority.

All the laws enacted by the several states in regard to dental practices have been sponsored by it, and this has given character and respectability to the profession by establishing a line of distinction between the truly meritorious and skillful operators and the impudent and empiric bootleg practitioner. Organization is the essence of success of the movement in which the combined effort of several individuals is desired for the promotion of the dental science. It is the flywheel of progress which gives balance to combined efforts, brings up and pushes forward the laggard of conservatism, restrains the erratic flight of the too exuberant enthusiasm of the reformer, gives steadiness of action and makes advancement sure.

An association of persons for the promotion of scientific investigation, the professional organization's value of today lies not only in the bringing together of the great, the good and the wise to exchange congratulations on what the few know, more than the many, but in the fact that the many may meet the few and that knowledge, culture, refinement and a true professional spirit may be more widely diffused and better approached.

Social Values, Also

Needless to say, a group of this type makes for the cultivation of the social qualities of its members by surrounding each member with friends to whom he can turn for advice and assistance when needed. It has for its objects the promotion of union and harmony among all respectable and well informed dentists. It also uplifts the social standing of its group in the aid and relief of its members. For instance, dental organization allows a low rate of insurance to which a member can turn; also a library bureau for purposes of authoritative information.

The circulation of a journal in any group whether professional or industrial is a teaching factor. The dental journal is the largest and most influential periodical in the world, having a circulation of more than 50,000 copies a month. It finds its way into eighty-two foreign countries and is read wherever dentistry is practiced. Dental literature lies at the base of dental organization. This worldwide circulation enables its members to keep in touch with each other. In this manner, it maintains the full-time practitioner at a pace consistent with that of his fellow men in the various phases of advancement.

The profession cannot go forward without the two essentials of education: first, the education of the laity; second, the education of its students. It cannot advance in the full accomplishment of its health mission without help from the laity. In the past, it has been depending solely on the dues of its members. The curricula of study have been standardized by the controlling factor of organization. The dental organization educates the public in all matters

Farm Records Aid Feed Plan

Farm management records often bring about improvements in livestock practices which otherwise would not be made, according to J. B. McNulty, farm management specialist at University Farm. McNulty cites the case of a Scott county farmer who used 555 pounds of concentrates and no skim milk for each 100 pounds of hog in 1940 when the average required on 143 southeastern Minnesota farms was 454 pounds of concentrates and 262 pounds of skim milk. The following year the farmer used 557 pounds of concentrates to produce a hundred pounds of pork and again fed no skim milk or protein. In 1942 the same farmer fed a protein concentrate in the self-feeder and had his hogs ready for market two months earlier than usual. In addition he found that he had saved about one-third of his corn compared with other years. Proof that he was using more than 20 per cent more feed to produce a hundred pounds of pork than the average producer in his area served in this case to show that farm records furnish an excellent guide to improved farm practices.

Fund Supports Regional Inquiry

A gift of \$5,000 from the division of humanities, Rockefeller Foundation, has been received by the University of Minnesota to enable Miss Helen Clapesattle, editor of the University of Minnesota Press, to devote half-time to gathering regional historical materials in Minnesota. President W. C. Coffey announced. Miss Clapesattle, author of "The Doctors Mayo," non-fiction best-seller of a year ago, was recommended for the award by Dean Theodore C. Blegen of the Graduate School. A graduate of Oberlin College, Miss Clapesattle went to Minnesota in 1937 as a member of the history department and has since received her M.A. degree there. She was formerly on the staff of the Oberlin College library. Thursday, October 28, she was the convocation speaker in Northrop Memorial Auditorium, her topic being "The Doctors Mayo."

pertaining to dental health, with benefit to both the public and the profession.

Guides Professional Progress

Certainly the least that can be said concerning the group is that it assists its members in all their laudable undertakings and exerts its influence untiringly for the advancement in the dental field of methods of teaching, practice, jurisprudence and research. The American Dental Association opposes legislation which, if passed, would be detrimental to the association; for example, the compulsory health laws which would handicap the dentist. By means of the organization, committees can be maintained which keep in touch with the legislative activities of the federal government and the forty-eight states, with a view to preventing the enactment of unwise dental laws. They also maintain economic committees situated throughout the nation. They keep close contact with the federal government through a national health program committee—a contact committee between the dental organization and the government in matters of public health. They have surveyed the granting of patents, so that collecting of undue royalties could or would not be exacted from the dentist.

However, with all the progress which has been made, there are a few things yet to be accomplished. These cannot be accomplished without a full and cooperative membership of all the men involved who can bring these ideals to reality. We have yet to see the day when the cause, or the prevention, of dental ills through subsidized research may come to light. The public, therefore, must accept its responsibility in this endeavor. For the student, we must, through the organization of the National Association of Dental Examiners, secure uniformity of licensure in all the states.

The dentist is standing, in these troubled times, beside the government, the armed forces and the public in anticipation and preparedness. When the need arises, he may and will step in to again prove to the nation, and even the world, the eminent worth—the value of organized dentistry.

J. A. Cederstrom, Zoologist, Dies

John Alfred Cederstrom, for twenty-two years a member of the staff in the Department of Zoology, passed away at his home on January 11th. He is survived by his wife, Sophy Moyle Cederstrom, four children, and eleven grandchildren. Mr. Cederstrom was born in Kandiyohi County, Minnesota, May 28th, 1872, and began teaching in the rural schools of that county at the age of sixteen. He graduated from the St. Cloud Normal in 1893 and from the University of Wisconsin in 1900. In the latter year he married Lydia Olivia Moyle of Yorkville, Wisconsin. Five children were born to them.

From 1900 to 1918 Mr. Cederstrom served as superintendent of schools successively at Elbow Lake, Winthrop, Sleepy Eye, and Sauk Rapids, Minnesota. As a school administrator he was one of the first to introduce agriculture, manual training, and domestic science, and his work in these subjects attracted state-wide attention. In 1918 he began his work in the Department of Zoology at the University of Minnesota where he continued until his retirement in 1940.

Mr. Cederstrom will be long and affectionately remembered by the legion of students whom he taught in his half-century of service in the institutions of public instruction in this state. Beneath what often seemed to them at first as a stern exterior, they found a sincere and understanding teacher who strove mightily to make each of them use his talents to the utmost. By his colleagues and his friends, he will be remembered as an able teacher and a true and staunchly loyal friend.

E. C. Torrey Dead; Long a Figure In Journalism

The following necrology notice for the late Edwin C. Torrey, at one time a widely-known newspaper figure in the state, has been received by Minnesota Chats from University Farm. This paper is eager to add its statement of respect for the late "Col." Torrey, a gentleman in every respect.

Edwin Cornwall Torrey, former extension service, University Farm, died at his home in St. Paul on August 22, 1942. He was born at East Java, New York, September 18, 1860, the son of Bruce Torrey and Lydia Cornwall Torrey. At the age of four years he moved with his parents to Albion, Wisconsin, where he later attended Albion Academy. After graduating from the academy he taught district school for two years before entering Lawrence College at Appleton, Wisconsin.

Mr. Torrey worked for a year in a printing office at Madison, Wisconsin, and then moved to Ordway, S. D., with his widowed mother. He was engaged in the printing business at Ordway and later at Columbia before moving to Aberdeen, where he and a partner founded the Aberdeen Daily News in 1886. He subsequently joined the staff of the Minneapolis Journal where he served in the news and editorial departments, part of the time as Northwest Editor, for a period of 25 years. He was recognized as one of the leading authorities on political and economic affairs throughout the northwest.

Mr. Torrey entered the Agricultural Extension Service in 1919 in which he served as publicity specialist until he reached retirement age in 1929. During retirement he prepared for a number of years a special page on agricultural topics for the Sunday Minneapolis Journal. He also wrote numerous special articles for other papers and agricultural journals. For five years preceding his death he edited and proof-read most of the material for the Minnesota Horticulturalist, and wrote many of the editorials and some of the articles. He was the author of a book, "Early Days in Dakota."

He retained up to the time of his death a lively interest in current events and devoted much of his well-earned leisure time to reading books. He is survived by his wife, Mrs. Elnora Catlin Torrey, to whom he was married in 1884.

Three Get Research Grants

Three research grants have been awarded by the Minnesota Academy of Sciences to Minnesota college scientists working on projects worthy of support. Professor D. R. Lawrence, University of Minnesota, announced.

Heads Architecture At Minnesota 'U'



Prof. Roy C. Jones

Dean Wulling Campus Lecturer

Dr. Frederick J. Wulling, dean emeritus of the College of Pharmacy, University of Minnesota, delivered the first Samuel W. Melendy memorial lecture Wednesday evening, Feb. 17, in the Center for Continuation study. The lecture, one of a number of activities endowed by the late Mr. Melendy when he gave the college more than \$150,000 in 1942, will be an annual event, and will deal with the history and progress of pharmacy. Dean Wulling, instrumental in obtaining the gift through a lifelong friendship with Mr. Melendy, was chosen to give the first lecture, which described the history of the college and the connection with it of outstanding figures. The first Melendy lecture was the closing event of the annual three-day pharmaceutical institute at the Center for Continuation Study.

Lt. C. P. Haga Visits on Campus

Clifford P. Haga, 2d Lt. Army Air Corps, recently visited friends on the campus after recovering from a several weeks siege of pneumonia that overtook him just as he left the train upon arriving home on leave. He was hospitalized at Fort Snelling. Lt. Haga is stationed at the San Antonio Aviation Cadet Center, where he serves as a teacher. He is one of several Minnesota faculty men, among them Curtis Avery, Extension Division, and Franz Montgomery, Department of English, who received special commissions early last summer and went through training at Miami Beach. Lt. Haga's family remains in Minneapolis.

Dehydrated Pork Promising Well

Minnesota grown pork may soon be on its way to Army butchers in North Africa and the Solomons in a new concentrated form. First steps have been taken to save shipping space by dehydrating pork into a very successful food product which looks like brown sugar. The Agricultural Marketing Administration of the U. S. Department of Agriculture has awarded its first contract for dehydrated pork to a mid-west meat packer for approximately 110,000 pounds—to be processed and delivered within the next few weeks.

Dehydrated pork has about one-third the volume of the original boneless meat and weighs about one-fourth as much. Large-scale drying and dehydration of other farm products for lend-lease shipment—such as dairy products, vegetables, fruits and eggs—already has saved thousands of tons of shipping space in getting urgently needed food products to the allied nations.

Although in the experimental stage when the war began, meat dehydration has made rapid strides under the impetus of wartime needs for concentrated foods.

The Termites' Revenge

At the University of California, the mailing room of the university's publishing house was reconditioned to discourage termites. The termites retaliated by attacking literature stacked there, including a pamphlet entitled: "The Control of Termites by the College of Agriculture."

Camouflage On New Basis

"The great change in camouflage since the first world war is its wider application to other than strictly military projects," according to Roy Jones, professor and head of the department of architecture at the University of Minnesota.

"Contrary to an article appearing in a magazine a few months ago, there has been no fundamental change in camouflage technique from the last war to the present," Professor Jones said. He was an officer in the camouflage division in the first world war.

"In the last war camouflage was used chiefly to conceal or confuse aerial observation of gun emplacements, air fields, ammunition dumps or other closely related military targets.

"Now, however, these methods are used more in other than front-line application. War factory architecture, for instance, has been basically affected by camouflage principles."

The long range bomber, according to Professor Jones, has been the chief cause of this increased application.

"Peace-time mass production methods produced the huge, glassed-in, rectangular factory building," Professor Jones explained. "But this construction is a large, easily identified bombing target."

Camouflage would do away with the glass windows or sky lights, since they reflect light and are shattered easily. Prof. Jones would try to 'blend' the building into its site by taking into account the topography and fashioning the building to it. Long, straight buildings are easily seen from the air because of their shadows.

He would probably advise, too, dividing the building into smaller, separated parts in order to cut down the size and vulnerability of the target to observation and bombs.

Lecture and problems relating to camouflage are given to students in architecture as part of their work according to Professor Jones. Camouflage, however, represents but a small part of the war-related subject matter offered to architecture students.

Milk Manufacturers Short Course Topic

A short course in dried milk manufacture will be held at University Farm March 2 and 3, according to an announcement by J. O. Christianson, director of agricultural short courses.

Included on the two-day program will be discussions on the dry milk industry under wartime conditions, problems in marketing and packing, requirements for the centralized powder plant, the control laboratory for the plant and utilization of dry milk in baking. Problems in drying and packing eggs will also be discussed.

Featured speakers for the sessions are Frank Beal, Food Distribution Administration, U. S. D. A., Washington; George E. Holm, chief in the division of dairy research, Bureau of Dairying, U. S. D. A., Washington; Paul S. Prickett, chief bacteriologist, Meade-Johnson and Company, Evansville, Indiana; F. A. Collatz, chief chemist, General Mills, Inc., Minneapolis; Frank Stone, Land O' Lakes, Inc., Minneapolis; George F. Stewart, marketing expert, Iowa State college, Ames, Iowa; R. J. Spears, Abbott's Dairies, Inc., Cameron, Wisconsin; John Barnes, Twin City Milk Producers' association, St. Paul; Ralph Jenkins, Bruce, Wisconsin; W. B. Combs, S. T. Coulter, E. Fred Koller, W. F. Geddes, and J. O. Christianson, University Farm.

Faculty Members Help Government

Dr. Lloyd M. Short, professor of political science in the University of Minnesota, has been appointed to a committee on war-time requirements for specialized personnel, working under the National Resources Planning Board. Professor Short has charge of the public administration training center at Minnesota, in which many persons have been prepared for specialized work in public service. Announcement also has been made of the appointment of Dr. Ruth E. Boynton, director of the Students Health service to a special committee dealing with procurement of women physicians for various types of government service. This is operating under the Welfare division, directed by Paul V. McNutt.

'43 Football Prospect Vague On All Campuses

Army Announcement That Men in Uniform Shan't Play Partly Clarifies Outlook

Later developments of the 1943 football situation than those reported below are action by the Western Conference permitting freshmen to engage in intercollegiate athletics of all types, including football of course, and an announcement by the United States Navy that men sent to college campuses under its training program may engage in athletics if they can find the time while completing all Navy training requirements. Action of the Conference included waivers of all eligibility details for college men sent to the campuses by the Navy. These developments increased the likelihood that there will be football next fall. At the same time, it was found, some adjustments of football schedules are necessary, partly to reduce travel and partly, in this area, to accommodate games with Great Lakes and the Iowa Seahawks.

The not wholly unexpected athletic sensation of recent weeks was the announcement in the press by Col. Herman Beukema, in charge of the Army's specialized training program in American colleges and universities, that students in uniform returned to the campus for further training would not be permitted to engage in intercollegiate athletics. The change will affect Minnesota football.

Col. Beukema said it will be up to the institutions to determine whether they can maintain intercollegiate programs under these conditions. No announcements paralleling that of the Army have come as yet from the Navy or Marine Corps, but the first statement is assumed to be an indication of the way in which the wind is blowing.

Army authorities said the intensiveness of the training program the men will be put through when they have completed basic training and been sent back to campuses will leave no time for preparation and participation in such programs as intercollegiate football.

The response from athletic directors and coaches through the country has been, in general, that "We will have a football team if there are eleven men on the campus who want to play," but the exact nature of next year's athletic program remains vague everywhere. Three eastern colleges, taken over almost entirely by Navy or Army, have announced discontinuance of intercollegiate athletics. They are Yale, Princeton and Dartmouth.

No direct word of the Army's step has been received as yet at Minnesota, Lou F. Keller, acting-director of athletics, said. On the Minnesota campus, however, the feeling was that the blow to major intercollegiate sports was one that had been sure to fall, sooner or later.

"I can't very well make a statement until I have heard directly from the Army authorities," said Keller. "It is possible, of course, that the other branches of the service will not follow the same course."

Dr. George Hauser, Minnesota headcoach, was inclined to take the view that the Army announcement is authoritative. At the same time, he followed Keller in saying that direct word has not yet been received.

"There seems little doubt that most of our lettermen and reserves from last fall will be in active service before time for another football season comes around," Dr. Hauser said. "In fact some of the men are already being called up, and at the close of the present quarter, March 18, it is certain that many more in the several reserve categories will be taken."

"As for the present freshmen," Hauser said, "the men who would be sophomores next fall, they are the ones who will go soonest of all, as they are subject to the direct draft. Few of them are in reserve categories and most of them are in the new 18 and 19 year old draft classes." "Fact is," added genial George, "most of our freshman players have been called in the draft already."

Dr. Hauser said the main hope for football next fall would be adoption of a rule permitting freshmen to play. This would mean boys who enter the univer-

Cadettes Arrive For Campus Course

Cadettes of the Curtiss-Wright Corporation, to be trained under contract with the University of Minnesota to supplement engineering staffs depleted by calls to military duty, began a ten months course on the Minnesota campus Monday, Feb. 15. Their course of instruction will be under the general supervision of Professor John D. Akerman, head of the department of aeronautical engineering. Miss Carol Keplinger, formerly in industrial personnel work at the Armour Institute of Technology, Chicago, is in charge of the girls. They will live in Shevlin Hall and will enjoy all of the privileges and facilities accorded to regular students. The cadettes will not be in uniform, Miss Keplinger said. Their course will be divided into two five-month terms.

Praises Farmers For Successes

Congratulation to the farmers of America on their magnificent achievement in food production during 1942 are expressed by Dr. Edmund Ezra Day, president of Cornell University and newly elected president of the Association of Land-Grant Colleges and Universities of which President W. C. Coffey of the University of Minnesota is a member of the executive committee.

Speaking for the land-grant colleges, Dr. Day voiced his concern over the difficult problems confronting agriculture for 1943 and pledged the full cooperation of the colleges in meeting these problems.

He pointed out that the production of food crops and livestock products in 1942 was the largest in the history of American farming and that agriculture had met its obligations to the war effort fully and completely.

"For this wonderful success," Dr. Day says, "much credit must be given not only to men and boys who often worked the equivalent of a 70 or 80 hour week but also to the farm wives who labored long hours in the fields and barns in addition to caring for the homes and the families."

Calling attention to the difficulties in maintaining farm production in 1943 with a greatly increased shortage of labor and farm equipment, he said:

"The world's food supply, particularly the supply of food for this nation and its allies, is rapidly becoming one of the most important problems of the war."

"The nation's success in dealing with this problem will largely depend upon skill and realism in applying to its solution the experience of practical farmers and the accumulated results of agricultural research."

Two on Campus Contribute to the Study of Learning

Dr. T. R. McConnell, acting dean of the College of Science, Literature and the Arts, and Dr. John E. Anderson, director of the Institute of Child Welfare, are contributors to a newly-published work, "The Psychology of Learning," of which Dean McConnell is the principal author. The book is the product of a committee of the National Society for the Study of Education. It is comprised of two main parts, one of which covers the various theories of learning, while the second considers the implications of those theories for education and educators. Dr. Anderson's chapter deals largely with emotion as a factor in learning, pointing out that while emotion functions chiefly as a drive it may also be a disturbing element. An article by Dean McConnell on the reconciliation of learning theories closes the first section of the book. A dozen leading American students of educational theory and of psychology contribute to the volume.

Another recent Minnesota contribution to academic literature is Professor Alburey Castell's, "An Introduction to Modern Philosophy in Six Philosophical Problems" (Macmillan).

sity as freshmen next fall. Many of these will have had high school football experience. On the other hand, draft policies and age limits may result in their being taken into the army by selective service before it is time to enter college if they are more than 17 years old.

Tell Us, Boys, What Do You See?



Intent on catching a glimpse of the 1943 football season, Lowell Dawson, backfield coach, and Headcoach George Hauser are shown peering from a window in Cooke Hall. There's still a touch of the "now you see it and now you don't" about the coming gridiron schedule, but George and Red are doing their very best mind-reading.

State Provides Third of Cost

Continued from page 1, column 5
tories, cafeterias, and similar services for students and faculty. Scholarships, fellowships, prizes and trust fund expenditures for teaching and research, plus re-investment of matured funds and investment of new gifts, made up the \$1,227,956 outlay under the heading "Trust fund purposes." Outgo for intercollegiate athletics was \$261,671.96.

Other Important Items
Bringing outgo to a balance with total receipts were the items of certificates redeemed, \$169,000; reserve for depreciation, \$45,000; endowment increase, \$179,894; increase in outstanding obligations and allotted balances, \$633,766.59, and, free, unencumbered balance as of June 31, 1942, \$11,258.55.

Those desiring the complete report may obtain a copy by writing to Mr. Middlebrook at the University of Minnesota.

Copper Short To Fight Blight

Minnesota potato growers who have just completed the second year of a hard fight on late blight may have to go into the 1943 season with a shortage of the copper compounds that are used against this destructive disease, says R. C. Rose, extension plant pathologist at University Farm. The war production board has eliminated the use of steel drums for shipping some 200 chemicals, among them the monohydrated copper sulfate which potato and truck crop growers have used to make up their dust mixtures to combat insect and fungus pests.

Manufacturers of chemicals have announced they will increase as far as possible the production of the fixed coppers to replace the dust mixtures formerly made with the monohydrated copper sulfate. The fixed coppers can be transported in paper containers safely and conveniently. Whether or not enough of these fixed coppers can be delivered to take care of Minnesota needs next year is a question, says Mr. Rose.

Growers are urged to look ahead as far as possible in lining up their chemical supplies. One potato variety, the Sebago, has shown considerable resistance to late blight, and potato growers in the state are expected to increase their plantings of this variety next year.

A graduate of the University of Minnesota and former teacher in the Minneapolis public schools has been appointed chief nutritionist of the corn refining industry, the Corn Industries Research association announced. She is Miss Gertrude S. Smith.

Builds Air Fields in Guinea

How a graduate of the University of Minnesota's College of Engineering, Lt. Col. Leif J. (Jack) Sverdrup, has been in charge of building a series of air fields in New Guinea, to which large numbers of the troops that took Buna and Gona were flown, is told in the current issue of Engineering News Record. Lt. Col. Sverdrup took his civil engineering at Minnesota under Prof. Frederic Bass and fellow department members. In civil life he is a consulting engineer in St. Louis.

Lt. Col. Sverdrup is said to have reconnoitered an extensive area 70 miles from Buna on foot and to have selected and then built with native labor the field which made it possible for large Australian and American forces to land.

Equipment with which he built the field, known as Wanigela, had to be transported by air from Port Moresby.

Water-Soluble Vitamin Made By 'U' Chemist

The synthetic production of a water-soluble form of vitamin E, recently found helpful in the treatment of some diseases of the muscles, was reported before the National Academy of Sciences.

The new form of vitamin E was described by Prof. Lee Irwin Smith of the University of Minnesota. Natural vitamin E is soluble only in fat and therefore must be administered by injection in order to be properly absorbed by the body.

The fact that the new synthetic form can be made to dissolve in water by the addition of a drop or two of hydrochloric acid, it was pointed out, provides for the first time a vitamin E which can be taken orally.

COTS, NOT CATS

A typographical error somewhere along the line in the Bessemer City Correspondence Friday made it appear that they were wanting some cats at the emergency hospital in Bessemer City. The authorities have been swamped with offers of cats, black ones, white ones, brindle, gray and yellow. But Mrs. J. W. Eury, the Bessemer City correspondent, wishes to state most emphatically, and with all the force at her command, that it was "cots" she wanted for the hospital and not "cats"!

Please cease and desist from offering to send more cats to the emergency hospital, she begs. They want four "cots" there, and would appreciate the loan of any extra "cots" that might be available. They need four.
—Editor & Publisher

Air Crew School Will Open Here On March 1st

Final plans for the opening March 1 of a new Air Crew training school at the University of Minnesota under the Army Air Forces Training Program were announced by Dean Malcolm M. Willey following arrival of Major E. O. Sheldon from Randolph Field, Texas.

First contingents of men may arrive any day, although the actual school work will not start until Monday. All will be soldiers in uniform.

The men will be housed in quarters that have been prepared in enclosed sections of Memorial Stadium.

Exact size of the school in numbers will not be announced under army regulations, but it will be generally comparable to either of the two major naval training schools now on the University of Minnesota campus.

Students assigned will be mostly high school graduates, with a few college men and some who have not finished high school. The program is not, therefore, one under the plan whereby college men called from the enlisted reserves will be assigned back to college campuses.

Duration of the course will be five months, during which the students will take mathematics, physics, history, geography, English, civil air regulations and a stated amount of flying. They will be known as air crew students and the ultimate purpose is to make fliers of those who are able to maintain the training schools.

Sixty hours a week will be their work program; composed of 24 hours in class, 24 of supervised study, six of military drill and six of physical education. Men sent in early contingents may receive less than five months of training, Major Sheldon said, but those arriving later will go through the whole course.

Assisting Major Sheldon are three officers, Lts. Louis Letzerich, Norman L. Moran and H. E. Frame.

Pullets Need Clean Range

Poultry raisers may draw a sigh of relief over feed prospects now that the threatening drouth has been broken temporarily, but spring rains bring another worry in the form of danger from coccidiosis and worms, according to Cora E. Cooke, extension poultry specialist at University Farm. Wherever chickens have ranged within a year or so, these diseases will be waiting to attack the new crop of growing chicks. Wet weather increases this danger, Miss Cooke points out.

Clean ranges take on new significance this year as poultrymen direct all their energies toward production of vital foods for the war effort. Only those pullets that live to healthy maturity can be expected to lay the eggs that are so badly needed.

The danger of disease is even greater than usual this year, with larger flocks cutting down space in brooder houses and even on range. As more chicks are needed to a given area, any infection is likely to be more serious.

Moving the pullets to clean range is the only safe procedure. A brooder house that cannot be moved need not stand in the way, because pullets on range will do as well in any light shelter that protects them against rain. A shelter that is easily movable is always desirable because later moves may become necessary.

Large size feeders and waterers, big enough so that one filling daily will be more than ample, will relieve much of the worry of having chicks a long way from all the other work.

Electric Iron Inventor Dies

The man who wasn't satisfied just to burn the midnight oil as a student at University of Minnesota back in the Gay Nineties, but who singed the midnight ironing-board, too, is dead.

He was Charles E. Carpenter, 78, credited with being inventor of the electric flatiron.

It was at Minnesota, where he was taking post-graduate work, that he got his inspiration.

Carpenter, who had been a development engineer with a Milwaukee manufacturing company until his retirement in 1926, died recently at Poughkeepsie, N. Y.

Science Adapts Body Mechanism to Flight

Continued from page 1, column 3

nerve cells, and having done so, their structure can be analyzed by new electrical, optical, and electron-microscopic methods. By the latter means it has been possible to determine the molecular architecture of nerve cells and the location of the atomic and ionic constituents. By measuring the electrical resistance across a nerve fiber it has been possible to determine important characteristics of the surface and how that is altered under the influence of environmental changes. The most sensitive index of modified structure is the electrical charge on the surface and this measures the redistribution of ions in the nerve structure.

One thus finds that any change in the chemical or physical surroundings of a nerve is reflected in its structural organization. There are, however, processes thereby set into action which tend to reestablish the original structure, following which the cycle of break-down and recovery is again repeated. If the environmental change is brief, a single cycle of structural modification will ensue; if the environmental change persists, the structure of the nerve cell tends to fluctuate periodically. The frequency of this local rhythmic change is determined by the nature of the cellular structure, of its molecular and ionic composition and the character of their organization. Inasmuch as these factors are influenced by the environment, the periodicity is governed by the environmental circumstances.

The magnitude of these cyclic changes is further dependent upon the nature of the environment or the extent to which it is altered. This is well illustrated by varying the concentration of calcium ions bathing a nerve. This element is an important component of nerve. As it is withdrawn, the cell becomes less stable and more readily modified by changes of its surroundings. If the calcium be removed from the nerve in sufficient amounts, the characteristic rhythmic cycles of structural change develop.

How a Nerve Operates

When such local modifications in the structure of the nerve are of an adequate magnitude, they induce a reorganization of the structure of adjoining portions of the cell, and those regions in turn activate more distant parts. Such a wave of structural change constitutes the nerve impulse. As it ultimately reaches the termination of the nerve, the molecular and ionic changes modify the next adjoining nerve or muscle cell and thus set up a chain of events in the nervous system or bring a muscle into action.

In its normal operation the nervous system functions through a periodical recurrence of such transient waves of change, rhythmic in character as are those originated by unstabilizing the cell by the withdrawal of calcium. These periodically recurring events at successive points along a nerve cell are the messages transmitted from the sense organs to the brain, from one part of the nervous system to another, and from the central nervous system to the organs which are under its control. Such rhythmic action originating in the sense organism is due to their modification by physical or chemical changes in their environment. The frequency of the impulses is the organism's measure of the intensity of the environmental stimulus. Similarly, the periodic discharge of impulses from the motor cells in the central nervous system is due to alterations in their local environment resulting from activity in adjoining nerve cells or from changes in the chemical composition of the body fluids.

Oxygen and Energy Needed

The sensitivity of nerve cells to changes in their environmental conditions depends upon the unstable character of the cellular structure. For the maintenance of such a structure a continual expenditure of energy is necessary and this requires an abundant supply of oxygen. For the reorganization of the resting state following the passage of an impulse, still more energy and oxygen are needed. The demand of the cells for oxygen is accordingly an important measure of the processes going on within them and of the modifications of the cellular state. Because of the inaccessible location of nerve cells within the body, it has been difficult even in experimental animals to obtain direct measurements of their oxygen supply and oxygen consumption, but this has recently become possible

through the development of a method which involves the insertion of a microscopic metallic electrode into various regions of the nervous system with relatively little damage. By measuring the electrolysis of oxygen under a potential applied across the surface of the electrode, the oxygen tension in the surroundings of a nerve cell can be determined directly. It is thus possible to observe the varying demands of nerve for oxygen with which to maintain its structural organization as that structure tends to be modified by changes in the surroundings. It is also possible by this method to study the extensive mechanisms whereby the cells of the brain are provided with the necessary oxygen for maintenance. Upon the action of these mechanisms depends the survival of the organism as it encounters widely different environmental conditions.

Airplane Helps Science

No machine has done more to extend the range of man's natural powers to adjust himself to new environmental conditions than the airplane. Especially in military aircraft he has a device which has greatly increased his capacity for action. By altering his relation to gravitational forces and relatively freeing him from their restrictions, these aerial machines have vastly increased man's speed of movement and extended the range of his senses. In doing so, however, they have placed new stresses upon the living organism and especially upon the nervous system. If this powerful new weapon is to be used most effectively and fully, there must be a close integration of engineering developments with the physiological characteristics of the air crews.

This physiological limitation on utilization of aircraft appeared early in the history of flight. The restriction was the demand of the brain cells for oxygen, a demand which can now be studied by the precise methods just described. As man leaves the ground with the aid of an aerial machine, he gains new powers, but loses natural powers as the oxygen concentration in the surrounding air decreases and the amount delivered to the nerve cells falls below what is necessary for the maintenance of their normal structure and function.

To make possible the utilization of the machine it has accordingly become necessary to devise a secondary machine which bridges the gap between the limitations of the human body and the excessive performance of the primary machine devised by man's ingenuity. In this instance the secondary machine is a device for supplying oxygen to the crew of the airplane in amounts necessary to compensate for the decreased oxygen in the atmosphere as the plane ascends to greater altitudes. As flying man has succeeded in taking himself into atmospheres to which his nervous system is not able to adapt, he has found the means for recreating the conditions necessary for the continued life of his nerve cells.

Another power we have gained from military aircraft is great speed and rapid maneuverability. The whole strategy and tactics of warfare have thus been changed. This new performance is, however, not without limitations, and here again the necessity for maintaining an adequate environment for the brain cells is the ultimate restriction. Normally the heart delivers to the brain a flow of blood from which the cells derive the oxygen necessary for the maintenance of their delicately organized structure. Recent measurements show, however, that the demand is so great that the oxygen tension at the surface of the cells of the cerebral cortex is below that of even the venous blood. This essential flow is maintained against the gravitational force acting on the column of blood in the vessels of the body. In aerial maneuvers the situation is altered. As the pilot turns at high speeds or pulls out from a power dive, the column of blood above and below the heart is under a force greater than gravity and accordingly less blood reaches the brain. The delicate balance of physiological demand and supply is disturbed under the influence of man's machine-aided movements, and the brain cells are no longer able to function in their normal manner. "Blackout" results.

Sense of Position Affected

Man's posture and sense of position in the surrounding world is maintained by the trains of nerve impulses that come to the brain from the sense organs for equilibrium

'Relax and Live' Dr. Peale Says

If we relax physically and put our minds in harmony with God, any one of us can live victoriously and radiantly in a time like this. This is the message Dr. Norman Vincent Peale, minister of the Marble Collegiate church in New York City, presented at a University of Minnesota convocation Nov. 19.

"The first element in living in the world today is to build up an optimism in your mind," he said. "This is the dark hour before the dawn. We must believe we are coming into the most magnificent era in American history."

The "magnificent era" Dr. Peale referred to is the time when all the mechanical genius creating war implements will be turned to peace time devices. This and the ideal social system that he believes will come gives us something to look forward to.

"You ought to be glad you are going to live in a world like that," he went on. "However, mechanical civilization is no good without a soul. You have to put a little of that basic spiritualism in it."

A second element in living in a time like this, and in times to come, is to learn the art of inner peace—as Dr. Peale put it, "the orientation of your mind."

"The great American disease today is tension," Dr. Peale continued. "The American people are all wound up. I can see tension in this audience. That is one reason you should read the Bible."

Dr. Peale's formula for relaxation is: "Stretch out; let yourself become limp; let your mind drift into pleasant surroundings; and lift your soul into heaven and keep it fixed there."

"If you learn the art of relaxation of your body, mind and soul, there is not an examination in this University that you cannot pass," he said.

"There is a unity between the earth and the spiritual world. Find that unity and you can live in a time like this."

Night Air Called Healthful

Night air is more healthful than day air because it is heavier, cleaner and contains more radioactive matter.

librium in the middle ear and from the nerve endings in the limbs that are sensitive to tension. By the waves of action in the nerve cells the brain is informed of the movement of the body and the gravitational forces to which it is subjected. There are furthermore the trains of nerve impulses from the visual receptors in the eye. During flight, the receptors of the middle ear and of the limbs are acted upon by forces that combine with or act in an opposite sense to the gravitational force. Thus in a loop the resultant force is opposite to that of gravity, and only the visual nerve impulses can correct the nervous reports from the gravity receptors which indicate that the earth is above rather than below the body. When visibility is lost, as at night, or when flying through clouds, only the receptors influenced by accelerational forces send their reports to the brain concerning the relation of the body to the earth, and these messages are in part determined by the movement of the plane. The normal relation of the pilot to his environment is thus destroyed by the use of the very machine which is designed to extend the range of his actions. In order to reestablish the correct relationships between the pilot and his environment, it has become necessary to devise instruments for blind flying. These "secondary machines" extend the range of his normal nervous mechanisms and thus make possible operations under a wider range of conditions.

It is the function of the nervous system to maintain a highly organized and delicately balanced living organism in a changing environment, and to control the continual adjustments of the bodily functions we describe as life. This it does through the spread of structural changes along nerve cells, initiated by changes in the surroundings of those cells. It is the function of a machine to enable man to alter these normal relations to his natural surroundings. In a machine age, and especially in a machine war, our survival and effectiveness will depend more and more upon a partnership between the engineer and the biologist in devising machines that conform to the physiological requirements of man.

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New Type of Rare Sugar Made By 'U' of Minnesota Scientists

'Heavy' Product a Laboratory Item; Can Be Traced Through Body

How the first "heavy sugar" ever made in a laboratory has been produced at the University of Minnesota was told recently in a national story by Howard W. Blakeslee, science editor of The Associated Press. Mr. Blakeslee visited a number of University of Minnesota laboratories when he was in the Twin Cities recently to cover meetings in St. Paul of the American College of Physicians.

His story was as follows:

Medical science has a new aid, heavy sugar—so called because, grain for grain, it weighs more.

All sugar is partly carbon, and heavy sugar is rich in a recently isolated form known as heavy carbon, or C-13. This sugar won't be available on your ration card.

But the new sweet promises to be invaluable for investigating sugar puzzles in diabetes and probably for other digestive and medical questions.

At the University of Minnesota department of physiological chemistry, the world's first heavy sugar has been made. Only a trace, but sufficient to prove that it's feasible.

Plants use the heavy carbon exactly like ordinary carbon to form sugars. Taste, quality and effects of the sugar are unchanged. But wherever this sugar goes, it can be traced.

At Minnesota, heavy carbon is obtained in a glass tower so tall it occupies an unused elevator shaft. The tower contains two glass cylinders, one inside the other; the inside one hot, the outer one cold. The tower is filled with methane, or marsh gas.

One part in 100 of methane is heavy carbon. That proportion is the same for all carbon, and methane is used merely because of convenience. The heavy methane which concentrates at the bottom of the tower is 10 per cent heavy carbon.

This heavy methane is burned. It becomes carbon dioxide, also is heavy because it retains the extra-weight carbon. Plants will make heavy sugar by growing them under a bell jar in an atmosphere enriched by heavy carbon dioxide.

The heavy sugars then can be used to synthesize heavy carbon products.

The scientific and medical purpose of these heavy carbon materials is use as tracers. The heavy carbon will trace the course of

British "Angel" Gives Millions

Britain's No. 1 philanthropist, Viscount Nuffield, 65, complained some five years ago that his good works had caused him five times as much trouble as his business, says "Time." Having given away some \$60,000,000 he swore he would give no more. But last week he headed into more trouble: for scientific and medical research, public health, social studies, and "the care and comfort of aged people" he created a \$40,000,000 trust fund. Peace-time automaker (Morris, Wolseley), Lord Nuffield is now one of Britain's main armors, also one of her most unreconstructed individualists. Chief financial angel of Oxford University, he was once so moved by Oxonians' eloquent thanks to him at a platform ceremony that he abruptly rose to his feet and promised another \$3,750,000. In announcing his charitable trust last week the Viscount took pains to point out that private enterprise had made it possible; perhaps pondering the socially planned future, he further observed that such "spontaneous contributions . . . are, and must always remain, a vital factor in the life of the nation."

food or drugs through the body, not merely in digestion, but afterward, into blood, tissues and vital organs.

Tracing is possible after the original foods or drugs have been converted into something entirely different. Even if the food or drug combines to form poisons, the heavy carbon shows the steps.

This clue to chemical changes is the new knowledge sought. Carbon surpasses all other elements for this purpose.

Hydrogen or nitrogen, the other two important parts of organic molecules, have the shifty ability to exchange, to pass from one molecule to another, without trace.

Not so carbon. The chemist knows where carbon has been by the company in which he finds it.

Heavy carbon already has been used as tracer material at the university. The methods were described to the American Society of Biological Chemists by Doctors Alan Hemingway, Merian Swensid and A. O. Nier. The bit of heavy sugar was made by Dr. G. O. Burr. More heavy sugar is planned.

To date the Minnesota experimenters have placed this heavy carbon in acetic acid, or vinegar, to feed animals. This heavy vinegar is specially suited for following fats through the body.

Most of the carbon reactions that interest dieticians and the medical profession take hours or days. Heavy carbon will stay put for years.

Alfalfa Shows Best Yield, Lowest Cost

Alfalfa has the largest yield per acre and lowest cost as pasture crop for cows and the next highest yield and still lowest cost as a harvest crop, according to a recent bulletin of the University of Minnesota's Agricultural Extension Service. As a pasture crop it yields 2,815 pounds of digestible feed per acre, as against 2,187 for sweet clover, 1,835 for sudan grass and 1,468 for blue grass. This bulletin shows. Relative cost is 25 cents for alfalfa, 32 cents for sweet clover, 41 cents for blue grass and 67 cents for sudan grass. As a harvest crop corn silage yields most, or 2,784 pounds per acre, alfalfa, 2,515 pounds of hay, corn, 2,212 pounds and oats, 1,144 pounds. Relative costs are for alfalfa hay, 60 cents, corn 87 cents, corn silage 90 cents and oats, \$1.33.

A chart accompanying the bulletin shows that permanent grass pasture and pasture mixtures of alfalfa and brome grass "let down" in yield during much of July and nearly all of August. Planting of sudan grass and utilization of second growth alfalfa for pasturage in that period is recommended.

The bulletin warns farmers to keep up pasture for their cows, for, once the milk flow has dropped, feeding can not bring it back. Don't, on the other hand, waste feed by undergrazing, it says. If cows cannot keep the pasture down, a part of the field should be fenced off and allowed to grow to cutting height.

Will Study Home Economics Course

Miss Clara M. Brown, professor of home economics education, recently conferred with officials of the North Central Association of Colleges and Secondary Schools concerning a study which she is to conduct next year for the association. It will be a critical investigation of the work in home economics being given in the various colleges holding membership in the association. From Chicago, Professor Brown went to Buffalo, New York, for a three-day meeting of the Research Committee of the American Vocational Association.

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Summer Terms Will Be Large Teeter Believes

Accelerated Courses Have Put Most Colleges of University on Year Around Basis

Even without its growing enrollment of Army and Navy men in uniform taking special training, the University of Minnesota may have one of the largest summer sessions in its history this year. Sessions will run from June 15 to July 25 and from July 26 to Aug. 27.

'Round the year programs of instruction, also called acceleration, will be responsible. As was true last summer, the Medical School, School of Dentistry, School of Nursing, College of Pharmacy, Institute of Technology and the Law School will all keep going at practically full speed, and for the first time the College of Science, Literature and the Arts will admit freshmen as the summer quarter opens. Pharmacy will not admit freshmen, but will run a full program for other classes. The School of Nursing will admit a class of young women who are college graduates and for whom a "streamlined" course of two and a half years rather than the usual three will be offered. It will also conduct workshop type short courses of two, four or six weeks for graduate nurses who wish to be brought up to date.

Heavy programs of instruction in the sciences will be conducted in the College of Science, Literature and the Arts and in the Institute of Technology, including mathematics, physics and chemistry, and the engineering schools in the Institute of Technology will be on a fully accelerated basis.

Only one casualty up to date has been announced among the usual special activities of the summer session. The Biological Station in Itasca Park has been closed for the period of the war. Transportation problems, rationing and probable scarcity of advanced students have made this step wise, T. A. H. Teeter, summer session director, announced.

The Arts College will repeat the Institute of Spanish-American Studies (Instituto de Estudios Hispano-Americanos) which it conducted so successfully a year ago. Sanford Hall has been turned over to the Army Engineers, but quarters for resident students of the Institute during the first term of the Summer Session probably will be established in one of the sorority houses. Professor James Cuneo of the Department of Romance Languages will again be in charge, and special teachers of Latin-American background will be engaged as was done a year ago.

The College of Science, Literature and the Arts also will present to 1943 summer students an unusual offering of courses in the creative arts, covering several fields.

Limited course offerings are being scheduled by the College of Agriculture, Forestry and Home Economics, including work for high school teachers of agriculture supplementary to courses offered by the department of agricultural education.

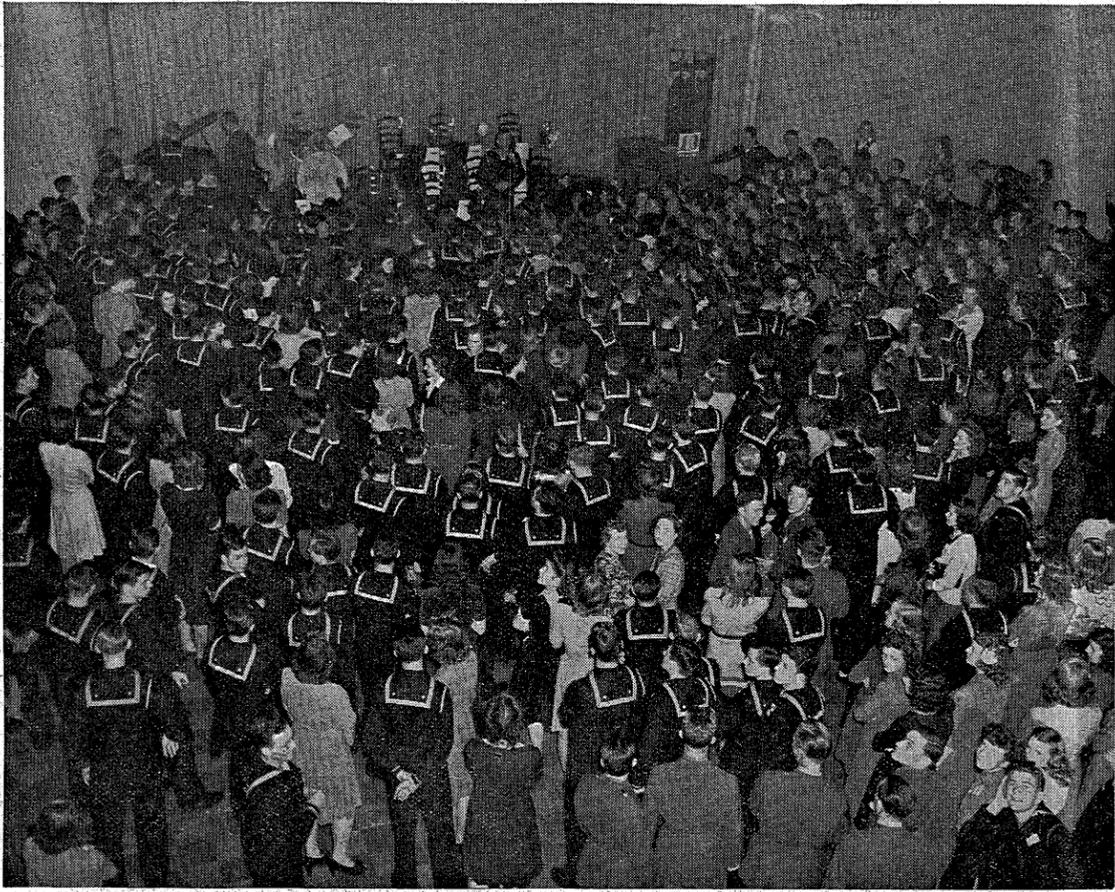
The usual opportunities for advanced instruction will be offered by the Graduate School in fields for which members of the graduate faculty are in residence during the summer terms.

Following action taken last winter, the Arts College will admit as freshmen a limited number of advanced high school students, not yet graduates, whose tests and recommendations indicate that they will succeed in college work without final completion of the requirements for high school graduation.

Special Courses in Education

Elementary teachers, supervisors, and administrators will find an exceptionally broad program in their fields. Core courses required for the elementary major will be given in both terms of the Summer Session. Problems of supervision and of diagnostic and remedial instruction in the social stud-

University Girls Help Entertain Navy Trainees



'U' Post-War Enrolments To Be Huge

Rush to College Expected at Least to Equal That After Last War

CAMPUS MUST BE READY

Loss of Staff or Support Would Have Grave Consequences

An accurate prediction of post-war demands on institutions of higher education in terms of numbers of young men and women who will then be seeking admission is extremely important. The needs of the armed services, industry, and the home front have caused a succession of enrolment decreases which began following the establishment of Selective Service. This subject has recently been studied by Dr. Tracy F. Tyler, who prepared the statement here printed.

It seems clear that the recent decreases are only temporary. Actually, educational opportunities for many individuals of college age are only being postponed during the emergency. With the cessation of hostilities tens of thousands of young men, and young women too, will flock to the colleges and universities to take up their educational careers where they were broken off. It is highly probable that plans will be made by the federal and state governments to finance, at least in part, this training.

Money alone, however, will not solve all of the educational problems which will arise following the war. A key question, the answer to which will help in post-war planning, is: How many students will the University of Minnesota have to provide for following the war? Some reasonable estimates must be made of this figure now. It cannot wait until the war is over. The number of students who will actually enroll determines the size of the faculty required. Tomorrow will be too late to insure an adequate staff for the post-war period.

All institutions have been losing staff members since the war began—to the armed services, to government agencies, to industry. Some have taken leaves of absence; some have resigned. Many of these will not come back to their former positions. But how will they be replaced?

The demands of the armed services have decimated the usual source of staff replacements—the scholarly younger men who would normally be completing their graduate work during the war period. If the present decreasing enrolments are to continue following the war, there is no need for concern. But if student enrolments after the war are to resume the pre-war yearly increases or if the post-war period brings about accelerated increases, higher educational institutions will be unable to discharge their responsibilities to the returning soldiers unless further staff depletions are terminated. With respect to these questions the following figures should be illuminating.

Table I gives the net total enrolment of collegiate students at the University of Minnesota for an eleven-year period before, during, and after World War I. It will be seen that the largest enrolment of men students before the war was in 1916-17, the number totaling 3,859. The first year following the close of the war (1919-20) showed a male enrolment of 5,889, an increase over the previous high point of almost exactly 50 per cent.

Year	Men	Women	Total
1913-14	2,629	1,526	4,155
1914-15	3,022	1,730	4,752
1915-16	3,547	2,178	5,725
1916-17	3,859	2,462	6,311
1917-18	3,060	2,507	5,567
1918-19	4,684	2,695	7,379
1919-20	5,889	3,138	9,027
1920-21	6,375	3,479	9,854
1921-22	6,636	3,789	10,425
1922-23	7,330	4,480	11,810
1923-24	6,773	4,858	11,631

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Production Maximum-Land Minimum Basic Problem of Victory Garden

Home Gardener Will Try to Get Best Results from Expenditure of Seeds and Fertilizer

A. E. Hutchins, assistant professor of horticulture at University Farm, has been kind enough to prepare the following article on home gardening for "Minnesota Chats." Much the same article has appeared in the "Minnesota Horticulturist." The information is not only timely just now, with planting time approaching, but should be of great value to those who want to help the national food effort by carefully planting and cultivating a Victory vegetable garden.

The article follows:

Food and munitions are of equal importance in winning the war. With increasing demands for food supplies for military and lend-lease purposes, it becomes increasingly important, perhaps one might say vital, that everyone who has a suitable plot of ground, grow a vegetable garden if he can possibly do so. Every vegetable raised in the home garden releases that much more food for the war effort and brings victory closer. Vegetables, either fresh or canned, won't be as plentiful at the corner grocer's this year as in the past. Vegetables are rich in many vitamins and minerals necessary in the diet. Therefore, assure your family of a plentiful supply by growing at least a part of their requirements. The large and farm garden should be planned to produce enough for consumption during the summer and for preservation by canning, freezing, drying, and storage for winter use. The small garden should be so planned as to supply as much of the summer needs as possible. If there are any vegetables left over in the small garden, preserve them for winter use and, in addition, purchase additional items for preserving for winter use when supplies on the market are at a maximum.

While the home vegetable garden is admittedly of great value in our war economy, its value may be greatly limited unless it is given the best of care and attention. Mother Nature is a bountiful provider, but she won't fill our larders unless we flatter her a little and prod her frequently to make her put forth her best efforts. There are several things that the gardener can do to aid her in the

production of a plentiful supply of vegetables.

Condition Soil Carefully

First, get the soil in as good condition as possible. A productive garden soil needs to be fertile, well supplied with organic matter, and well drained. Fertility can be supplied in the form of barnyard manure at the rate of 15 to 20 tons per acre or 3 to 4 bushels for each 100 square feet 10 x 10) or in the form of commercial fertilizer. Home gardeners will be limited this year to one kind of commercial fertilizer called the "Victory Garden Fertilizer." It is suggested that this be applied at the rate of 1,200 pounds per acre or about 3 pounds for each 100 square feet.

Where commercial fertilizers are used, it is necessary to add organic matter in some form. Organic matter aids in making a sandy soil water retaining and in improving the cultural qualities and drainage of heavy soils. On the farm, green manures can be plowed under to provide organic matter, but this usually isn't practical in the small home garden. Here leaves, lawn clippings, peat, and even the tops of the vegetables themselves may be used. These may be used as a mulch about many of the vegetables during the summer and then spaded under in the fall or spring. If vegetable refuse is used, remove as thoroughly as possible diseased material and material infested with injurious insects. Composted material gives better results. If possible, start a compost pile this summer for use next year.

Different vegetables grow best under different climatic conditions. Plant the cool season vegetables such as lettuce, garden cress, spinach, radish, turnips, kohlrabi, peas, cabbage, cauliflower, broccoli, and celery early so that they can take full advantage of the cool spring weather. Some of these can be grown as a fall crop also. Beets, carrots, parsnips, salsify, chard, kale, parsley, endive, onions, and potatoes should also be planted early for the best production. Warm season crops such as beans, sweet corn, melons, cucumbers, squash, pumpkins, tomatoes, egg plants, and peppers should be planted so that they will miss the spring frosts.

Mother Nature very often lets the gardener down on the water supply. Vegetables are of the best quality when they are produced with a steady, uniform supply of

'U' Pine Forest At Cloquet Grows

Standing timber on the property of the University of Minnesota's Forest Experiment Station at Cloquet increased by 1,164,000 board feet between 1929 and 1939 according to a report forwarded to President W. C. Coffey by Dr. T. Schantz-Hansen, director of the station. Jack pine stands increased from 1,930,000 board feet to 2,856,000; Norway pine from 1,100,000 feet to 1,311,000, and white pine from 120,000 to 147,000. These made the total stand as of 1939 4,314,000 board feet. Besides the timber for which this footage is computed there is a scenic forest at the station from which no cropping is to be done. It has a stumpage of more than 800,000 board feet, much the larger part of it in Norway, or red, pine. Figures for gains showed that the jack pine grew at the rate of almost 50 per cent in ten years, while the red or Norway grew at the rate of about 20 per cent in the same period. White increased at the rate of about 10 per cent.

Stillwater Pictured By Water Colorist

An exhibition of historic landmarks of old Stillwater by Josephine Lutz of the University of Minnesota faculty was exhibited recently in that city and will be shown later this spring in the University Gallery. A catalog of 25 numbers described Miss Lutz's work, to which Professor Laurence Schmeckebier of the department of fine arts wrote the introduction. "These watercolors," he said, "were not simply painted on a tour of the city. They represent well over a year's work by an artist whose home is in Stillwater and whose artistic activity has contributed much to the cultural life of the community. She has chosen each subject primarily for its artistic value. The historical facts are often hard to verify, but what information she could gather from a study of local history and from conversations with old-timers has been used in the descriptions of her paintings given in the catalog."

Stillwater, as many know, is reputed to be the oldest continuous settlement in Minnesota. It is also one of the most picturesque and beautiful.

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Continued on page 2, column 3

"War and the Farmer" Lecture Topic Of O. B. Jesness, Farm Economist

Factors in Shortages, Rationing and Price Trends Analyzed

"Minnesota Chats" reprints herewith a considerable part of a recent address on "War and the Farmer" by Dr. O. B. Jesness, head of the division of agricultural economics, University Farm. It was one of a series of talks on "Learning in Wartime" being given over WLB under auspices of the University of Minnesota's Key Center for War Information.

Dr. Jesness said in part:

Not long ago Secretary Wickard and Elmer Davis went on the air to tell the American people what is ahead in food supplies and distribution. This presentation must have brought home to every American the vital part which food plays in this war effort and consequently the very important responsibility which rests upon the American farmer not only for feeding our civilian population but also for supplying our armed forces and the peoples of our allied countries.

Americans have heard so much about agricultural surpluses in the past two decades that they have come to take an ample food supply for granted. When they have heard about food shortages and rationing in other countries they have felt that this "can't happen here." But it is happening. First it was sugar, which was explainable by the loss of the Philippine supply and by the need of ships for other uses. Then, it was coffee, which again was recognized as a shipping shortage. But now, we are hearing that we must become familiar with a point system of rationing, that this will begin with canned goods, dried and frozen fruits and vegetables, but that it may be expected to extend to meats, dairy products, fats and oils and perhaps other foods. This sudden change from surplus to shortage comes as a decided shock to many consumers. They say, "How come? What has happened anyway? We have heard of large production of farm products. How can there suddenly be shortages?"

These questions are perfectly natural. However, the answers are not hard to find. War activities have increased employment and payrolls. Consumers have more money to spend than ever before. War needs are curtailing the supply of many civilian goods, thus making available still more dollars for buying food. The demand of civilians for food has increased very materially.

The rapid enlargement of our armed forces also affects demand in various ways. Our men in the service are well fed, as they deserve to be and as we all want them to be. All of you, no doubt, have seen figures showing how the average consumption of meats per man in the army compares with the consumption of civilians. Though these comparisons exaggerate the increase, they do indicate that our soldiers, sailors and marines have good appetites. Because of problems of transportation, storage and handling, the armed forces have special claims on canned and dried products.

The increase in demand in the domestic market and for lend-lease purposes has affected in the main the same farm products. Demand is particularly strong for meats, dairy products, certain fruits and vegetables, and fats and oils. Cotton, particularly of shorter staple, and wheat remain a surplus problem. The wheat situation presents a striking contrast with that of 1917. Then wheat was a major need; now it presents a storage problem. Our carryover of old wheat last summer was nearly as large as our total supply of both old and new wheat in 1917, and the new crop last year was decidedly larger than in 1917. We had wheatless days and barley bread last time but nothing of that sort is now in sight.

In the main, the increased demand this time calls for more intensive production on existing farms rather than vast expansion on new land. We need more livestock and heavier feedings. We need to shift from certain crops such as cotton and wheat, to corn, soybeans, peanuts, and flaxseed. The changes are made on existing farms rather than by establishing more farms on new land.

Farm prices and agricultural income have risen in the present war much as they did in the last war; but, of course, they started from a lower level, relatively, than in 1914. However, farm prices in recent months have been well over parity, and income has been still higher, relatively, because of the

'U' Intramural Program Strong

"The status of intercollegiate athletics may be somewhat in doubt but intramural sports at the University of Minnesota will be continued as long as we have even two men who want to compete in some activity," W. R. Smith, intramural director at Minnesota, declares.

Team sports, as usual, are the most popular in intramural, with basketball leading the way. Over 1,000 men participated in the annual winter tournament which preceded the All-University finals and championship on March 4.

Individual sports such as boxing, wrestling, table tennis, fencing and swimming also have a big following at Minnesota.

Besides physically developing its own men to aid the war effort, Minnesota, like a number of other universities and colleges, has loaned its athletic facilities to the Army and Navy. Conditioning classes for the armed service men, who are on the campus for technical training, meet at every hour of the day.

Basketball, boxing and swimming seem to be the most popular sports among the army and navy men.

Sports like volleyball, squash, handball, badminton and bowling have also attracted many of Minnesota's athletically minded students. Since the University built its new Union, with 16 well-kept alleys, bowling has boomed.

increase in volume sold as well as in prices received. The gross cash income of farmers for 1942 has been estimated at 15.6 billion dollars, compared with 8.5 billion for 1935 to 1939. The net farm income in 1942 was more than double that of 1935 to 1939, and about 45 per cent higher than the previous year.

The favorable income situation does not mean that it is all clear sailing for the American farmer. There unfortunately are some dark storm clouds in the picture. The shortages of manpower and equipment are the most serious. The drain of farm manpower to industry and to the armed forces has changed the farm labor picture very greatly. Shortages of steel and other materials and of plant capacity limit the amount of new farm equipment which can be made available. The farmer's skill and ingenuity will need to be used to the fullest if production requirements are to be met in spite of these shortages.

The rapid increase in hog numbers and the need for more output of dairy products make ample feed supplies essential. Fortunately, we had large stocks of corn and other feed grains on hand when the war broke out and recent years have produced large corn crops. Decided inroads are being made on accumulated stocks and farmers should make plans for adequate supply for the future. In view of the importance of livestock production, it will be sheerest folly to adopt policies which will make it impossible to draw freely upon stocks of wheat for feed purposes as need arises. We cannot afford the luxury of using resources for producing things for which we do not have any use.

Dr. Jesness then went at some length into the farm labor and farm equipment problems, which have been widely discussed.

Price occupies an important place in the war picture, and our discussion would not be complete unless it included some reference to prices. Mention has already been made of the rise in farm prices and income caused by the war. Not all groups are satisfied with their gains to date and many think someone else has fared better. We are, therefore, witnessing efforts to increase prices in various lines.

Normally, price is an important director of production. Higher prices invite more output. Arguments are presented to show that prices should be permitted to rise in order to meet war demands. However, higher prices encourage expansion only as long as there is unused capacity. Agricultural and other production now is at a high level. Higher prices will no longer be fully effective in expanding output. This is one of the major reasons why price controls are applied in war times. Let nature take its course and the excess spending power available will soon

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Heads American Philologists Group



Dr. Marbury G. Ogle

Marbury B. Ogle, professor and head of the department of classics, University of Minnesota, has been elected head of the American Philological Association by ballot of the membership. The mail balloting was substituted for personal voting when the association abandoned its midwinter meeting at Cincinnati because of transportation considerations. Instead, the board of directors met in Philadelphia. Professor Ogle, formerly at Ohio State and the University of Vermont, came to Minnesota nine years ago after being professor in charge of the Classical School of the American Academy in Rome.

Summer Terms Will Be Large

Continued from page 1, column 1

ies, in reading, in science, and in arithmetic. Laboratory practice and observation will be available through the use of the Institute of Child Welfare and the Tuttle Demonstration School.

High school teachers, also, will find an expanded offering in the 1943 Summer Session, in the provision both of advanced academic courses and of professional courses for the discussion of current problems of teaching secondary school subjects. University High School will provide demonstrations of practical applications in this field.

Increased attention is being given in Minnesota to the training of school administrators with emphasis on their current problems and on their needs for state certification. Graduate advisers will be available for consultation concerning basic and advanced courses for principals and superintendents, and special provision has been made for advisory work in connection with graduate study.

Training courses for personnel workers will be given in both terms. The University of Minnesota program in this field includes training in the use of tests and other diagnostic materials, the psychology of personality, the procedures of counseling, clinical practice, and the planning of group programs. Basic guidance courses will be offered for administrators and teachers, as well as for prospective personnel workers.

Courses in philosophy of education and history of education will provide background for the consideration of current educational problems. Courses of interest to many groups also have been arranged on the use of radio in education, in the use of visual aids in teaching, and in health education.

In the special fields of art education, music education, and physical education both undergraduate and graduate courses will be available, with work leading either to the bachelor of science or master of education degree. Courses will be offered in the first term in agricultural education, home economics, and industrial education.

The College of Education program will meet the needs of teachers who wish to take work this summer for renewal of teaching certificates. Under emergency conditions a serious teacher shortage has developed, and the College of Education advisers will plan a combination of academic and professional courses for people who are willing to return to teaching to fill the present need.

For the war and postwar periods, the problems of the schools will be particularly acute. A comprehensive program of the usual courses for undergraduate and

School of Mines Metallurgists Perfect Solder Without Tin

graduate students will be presented, but one of the main purposes of the 1943 Summer Session in the College of Education will be to give educational workers as much help as possible in meeting these urgent problems. High school and college programs must be accelerated; more teachers must be provided to meet marked shortages in many areas; the training of school administrators must be advanced; changes in course content and curricula must provide pre-aviation instruction, pre-induction training for high school boys, and new emphasis in all subjects from social studies to nutrition; better guidance programs must assist in the selection of needed workers for the war. Aid to the war effort and to postwar planning, the primary concern of all citizens, must be central in our current educational plans.

Workshop in War Topics

In order to assist high school teachers and administrators in meeting particular problems in secondary education under war conditions a workshop on war-related activities in the secondary school will be given in the first Summer Session.

Elementary school teachers will be particularly interested in the two workshops in the elementary field to be offered in the first Summer Session. The Institute of Child Welfare has scheduled a workshop in child development and a second workshop for elementary teachers will be concerned with curriculum materials in the two fields of health and English. These workshops also are described in more detail below under "Special Courses."

In the first term of the Summer Session, also, a special course on Basic Issues in Education in the War and Postwar Periods will be given. The conduct of the war and the progress of postwar planning are interrelated, and many students will want to register for this course and work at the same time on special units in the Workshop on War Activities.

Teachers and administrators who wish to work in the Summer Session on other problems of particular importance to their own schools may register in problems courses in the main areas of education. All staff members will schedule office hours for individual conferences and the Curriculum Laboratory will be open in both sessions.

Workshop in Public Health Nursing Supervision

The Department of Preventive Medicine and Public Health has planned a Workshop in Public Health Nursing Supervision for the first two weeks of the Summer Session (June 15-30). The course will carry three credits. The prerequisite is experience in public health nursing and permission of instructor. After a brief orientation the class will be organized into small discussion groups under the direction of discussion leaders. These small groups will study their particular supervisory problems, and report periodically to the entire group. Special library and guidance facilities will be available. Anyone interested should make reservation for the course at least a month in advance of registration by writing to Miss Ruth Freeman, Director of the Course in Public Health Nursing, 121 Millard Hall, University of Minnesota, Minneapolis. (See PM&PH 172su.)

Special Course on the Conservation of Hearing

The Departments of Ophthalmology and Otolaryngology and Preventive Medicine and Public Health are offering a one-credit course on the conservation of hearing for public health nurses. This course, available during the first term, will be of special value to school and industrial nurses. (See Ophthalmology and Otolaryngology 135su.)

Author Dedicates Book to Ziebarth

E. W. Ziebarth, instructor in speech and WLB program director, is one of five persons in the United States to whom the book "Broadcasting to the Classroom by Universities and Colleges" is dedicated. Dr. Carroll Atkinson, Ph.D., former faculty member at New Jersey state college, is the author of the book. In a recent letter to Mr. Ziebarth, he said he believed Minnesota's School of the Air, under the direction of Mr. Ziebarth, is one of the outstanding developments of its kind in America.

Student Working Under Prof. Dowdell Wins National Award for Work

Workers in the division of metallurgy, School of Mines and Metallurgy, University of Minnesota, directed by Professor Ralph L. Dowdell, have developed a new, tinless solder which may be considered the best of various new solders developed since tin became a rare and highly difficult element to obtain. Standard lead-tin solder was a 50-50 mixture of the two metals, but today even an 85-15 mixture would be hard to produce because of tin scarcity. The Minnesota product, described in the January issue of "Metal Progress" is composed of 87.5 percent of lead, 0.5 percent arsenic and 12 percent antimony.

Working under Professor Dowdell were M. E. Fine, J. E. Elliott and I. C. Mattson, and Ensign Elliott, now in the navy, received for his share in the work the annual undergraduate research award of the American Institute of Mining and Metallurgical Engineers. Award was made at a meeting in New York on Feb. 15, in the amount of \$100. Ensign Elliott, son of Mr. and Mrs. Stowe E. Elliott, 1148 Churchill street, St. Paul, is stationed at Jacksonville, Fla.

Conclusions stated in the joint article by the four men named, in "Metal Progress" are the following:

The best tin-less substitute solder developed so far is an alloy of 0.5 percent arsenic, 12 percent antimony and 87.5 percent lead.

The cost will be about 10 cents per pound, lower than other solders.

Its melting point is 478 F, which is close to 30-70 solder, which melts at 496 F.

The joint strength of six lapped joints averages 8300 psi, which is stronger than 50-50 solder (8100 psi.) or lead silver alloys.

Its solderability is good on tin-plate and bare steel, but not good on copper or brass.

With special technique a speed of soldering can be had on tin plate which equals that obtained with 30-70 solder.

Lead-silver alloys are unsatisfactory primarily because their high melting-point causes an undue amount of oxidation and, therefore, inferior soldering properties.

Ensign Elliott was graduated from Minnesota in June 1942 with a degree of Bachelor of Metallurgical Engineering, with High Distinction.

Dr. Eddy Lectures On Fish and Lore

If transportation troubles may keep you from going fishing next summer, you at least can talk about it and think about it, says Dr. Samuel Eddy, University of Minnesota zoologist and fish expert, who began a series of ten evening lessons March 3 on "Fish and Fishing in Minnesota." It is a repetition of a course first offered a year ago which was largely attended. Dr. Eddy's class is under the General Extension Division of the University of Minnesota and meets Wednesdays at 7:30 p. m. in Room 313 Zoology building. Special attention is being given this year to utilization of fish in the emergency. The possibility of sport fishing in waters nearby the twin cities also will be discussed, together with the names and habits of various Minnesota fishes and the problems involved in maintaining good fishing.

Inductee Came Really Prepared

Pvt. Julius Bronson always has remembered his Boy Scout motto—"Be Prepared!"

When he reported for training at a post in Indiana, he wasn't taking any chances. He brought with him: An alarm clock, in case the bugler oversleeps; candle, flashlight, quill toothpicks, collapsible drinking cup, oilcloth to cover the ground beneath his pup tent on overnight bivouac, shower brush, pumice stone, scouring powder, tweezers, lime water salt, liniment, mustard plaster and rubber gloves.

Private Bronson is from New York and he wasn't certain what Indiana climate was like. So he brought: sheepskin vest, earmuffs, polarized sun glasses and shoe cleats for marching on icy roads.

Pvt. Bronson believes he is now prepared—for anything!

Campus Role In Army, Navy Training Grows

Three More Units Recently Have Begun Army Programs Here

OTHERS SURE TO COME

Sanford Hall Girls Removed to Provide Space for Soldier-Students

Military units in training at the University of Minnesota under contractual relations with the United States Army and United States Navy are being increased by three sizeable contingents, each from the Army.

These are the Air Crew unit, prospective arrival of which was reported in the last issue of "Chats," a contingent of Army Engineers, and a Pre-Meteorology contingent. The university has arranged living quarters for the Air Crew men in the enclosed part of the Stadium, for the Engineers in Sanford Hall, which has been vacated by the girls who lived there during fall and winter quarters, and for the Pre-Meteorology group in Pioneer Hall.

The courses will be of varying lengths, but it is assumed that for the duration of the war each unit will be kept filled with trainees, new groups being sent to the campus as those in training complete their courses and depart.

Under agreements with both the Navy and the Army, number of personnel in the units is not reported. The total number in training on the campus, however, will be considerable and will go a good ways toward offsetting declining university population as more and more men are called to the Armed services.

During recent weeks the Navy has announced that university and college men in its deferred categories will be grouped in a new classification to be known as V-12. Freshmen entering the university at the beginning of the summer quarter will become V-12 if they apply for it and are accepted.

Army trainees sent to the University of Minnesota as members of the Army Specialized Training Program will work sixty hours a week in activities running from 6:30 a. m. to 10:30 p. m., will be required to maintain academic standards such as would be credited towards graduation from college, and will be judged also on leadership, intelligence, responsibility, cooperation, demonstrated skills and physical stamina. The men are to be trained as officer material.

These are among the points made in a long statement sent to President Walter C. Coffey of Minnesota by Col. Herman Beukema, director of the Specialized Training Division, U.S.A.

"The purpose of the program," wrote Col. Beukema, "is to meet the need of the Army for specialized technical training of soldiers on active duty for certain Army tasks for which its own training facilities are insufficient in extent or character.—The program will go far toward providing the skilled men needed to prosecute the war. A maximum of one hundred fifty thousand men—future engineers, doctors, dentists, veterinary surgeons, chemists, psychologists, linguists, etc., will be brought into training."

Students will be under instruction for from 24 to 25 "contact" hours a week, in classroom and laboratory, and will study under supervision for a like period weekly. Military instruction will occupy five hours and physical instruction, six. Reveille will be at 6:30 a. m. and taps at 10:30 p. m.

Teachers, all drawn from the university faculty, will select their own text books and teach their subjects with freedom, but the procedures must meet the terms of the contract with the government, which specify subjects to be taught and the level of instruction. Textbooks will be paid for from government funds, but within the amounts specified in the contracts. Students will have access to the guidance and social facilities of the institution. They, as members of the Army, are subject to military discipline, except that the instructor will be expected to maintain the usual classroom discipline during class hours.

The Army assumes, Col. Beukema wrote, that ample church facilities for the various denominations and religions will be found near the campus of a large uni-

Coffee, Ho! Tars' Tongues Hanging Out

It's not a case of long days in an open boat with no water; rather, it's a story of long mornings in a hot office with no coffee.

A few good swigs of the old Java almost any time in the day is an old Navy tradition, says Lt. Comm. Joseph A. Flynn of the University of Minnesota ROTC, and both the commissioned officers and the chiefs in the establishment on the third floor of the Armory used to go to town with an electric plate and percolator until—you know what—came along.

Folks who think the Army and Navy can get just anything they want are wrong, says Comm. Flynn. If his outfit were officially a "mess" coffee could be had, but it isn't a mess; they have been eating here, there and everywhere.

Result? Coffee shortage; and how.

Are your protectors in Uncle Sam's Navy too proud to call for help? Not a bit of it. Say, Mr. and Mrs. Coffee Teetotaler, if by any chance you don't know what to do with some of the coffee to which you are entitled, well, one guess.

They hate to tell you, but if you called Ma. 8177 and asked for Extension 829 everybody would be surprised.

versity, which is true at Minnesota for most denominations.

The five hours of military training will not be the usual elementary military drill but "work designed to give to the trainee knowledge over and above that which he acquires during basic training."

At Minnesota the physical training periods will be conducted by members of the staff of the Department of Physical Education and Athletics, who are already carrying on such training of the Navy men on the Minnesota campus and of Army trainees who have already arrived.

A group of Army men to take engineering arrived last week, together with another group to take pre-meteorology, and the Minnesota program is expected eventually to cover several other fields. Negotiations between the Army and university authorities regarding some of these are already under way.

60 Colleges Affected By Navy Sports Rule

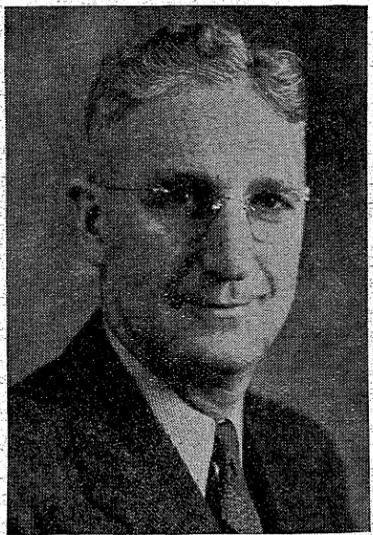
Almost sixty colleges, thus far, are affected by the Navy's decision to permit its specialists to participate in intercollegiate athletics. The following institutions were listed by the Navy earlier this month as having been approved for the training of engineers:

- California—California Tech, California and Southern California.
- Colorado—Colorado University.
- Connecticut—Yale.
- Georgia—Georgia Tech.
- Illinois—Illinois Tech, Northwestern and Illinois.
- Indiana—Purdue.
- Iowa—Iowa State.
- Kansas—Kansas.
- Kentucky—Louisville.
- Louisiana—Tulane.
- Massachusetts—M. I. T., Tufts and Worcester Poly.
- Michigan—U. of Michigan.
- Minnesota—U. of Minnesota.
- Missouri—Missouri.
- Montana—Montana Mines.
- New Hampshire—Dartmouth.
- New Jersey—Stevens Tech.
- New York—Columbia, Cornell, R. P. I., Union, Rochester and Webb Institute.
- North Carolina—Duke.
- Ohio—Case.
- Oklahoma—Oklahoma U.
- Pennsylvania—Bucknell, Carnegie Tech, Penn State, Swarthmore and U. of Pennsylvania.
- Rhode Island—Brown.
- South Carolina—U. of South Carolina.
- South Dakota—South Dakota Mines.
- Texas—Rice, Southern Methodist and Texas.
- Virginia—U. of Virginia.
- Washington—U. of Washington.
- Wisconsin—Marquette and Wisconsin U.

Siberian Wallflower Showy

The Siberian wallflower (*Cheiranthus cheiri*) is one of the most showy biennial plants. Its rich golden-orange flowers have the same blooming season as the May-flowering tulips with which they often are combined. If seed is sown indoors now, or even outdoors at the earliest opportunity, the plants will give a magnificent display in late May and June.

Miller to Head State Manpower Unit



Paul E. Miller

Paul E. Miller, chief of the Agricultural Extension Service at University Farm, has been named by Gov. Harold E. Stassen to head the Minnesota Emergency Manpower Agency. Use of all possible manpower in the effort to hoist Minnesota food production to the top is the agency's purpose. Rapid approach of plowing and seeding time makes it imperative that the program be started immediately, the governor told Miller.

'B' Honor Roll Posted at Farm

The fall quarter honor roll of students in the College of Agriculture, Forestry and Home Economics has been announced by Dean Edward M. Freeman. Students who maintain an average of "B" throughout the quarter are entitled to have their names on the list, which follows:

Agriculture
SENIORS: John Appelget, Calumet; Walter Bjoraker, Claremont; Myron Brakke, Rochester; H. Mead Cavert, St. Paul; William Kehr, Blue Earth; Urban Lees, North Branch; Keith McFarland, Austin; Mervin Milsten, Mahanomen; David Molander, Iron; Harold C. Olson, Hector; Robert E. Parker, Minneapolis; Ray Rose, St. Paul; Edward Sletton, Little Falls; Robert Snow, St. Paul; Virgil Tiedeman, Douglas; Peter Wasche, Perham.

JUNIORS: Glenn Bergan, Williams; Gladden Edman, Alvarado; Wesley Gray, Minneapolis; James Guy, Rochester; Alfred Halvorson, Milan; Reuben Jacobson, Chokio; Harold Lang, Benson; Joseph Malinsky, Cleveland; Paul Menge, Halstad; Wilfred Neumann, Wattertown; Russell Stenberg, Cass Lake.

SOPHOMORES: Henrik Aune, Starbuck; Bohn Engell, St. Louis Park; Le Roy Hanson, Hallock; Herbert Opp, Appleton; Joseph Reger, Minneapolis; Donald J. Swanson, Ortonville; Howard Thoele, St. Paul; Herbert Thompson, Minneapolis.

FRESHMEN: Raymond Carlson, Northome; Owen Hallberg, Spooner; Clark L. Hanson, La Porte; Virginia Koorn, Minneapolis; Lawrence E. Nelson, Mora; Robert Ober, Barnum; Vern Olson, South Haven; Wayne Smith, Atwater; Alan Stevermer, Easton.

Forestry
SENIORS: Robert E. Clark, St. Paul; Harvey Djerf, Minneapolis; David French, Niagara Falls, N. Y.; William Hannay, Minneapolis; Lowell Nelson, Minneapolis.

JUNIORS: Vilhjalmur Bjarnar, Iceland; Le Roy Hanson, Hallock; Richard Marden, St. Paul; Gordon Maxson, Minneapolis; Donald Pierce, St. Paul.

SOPHOMORE: Joe Chern, St. Paul.

Home Economics

SENIORS: Marjorie Andrews, St. Paul; Bernice Andrick, Virginia; Constance Berkholtz, Hazelton, N. D.; Doris Blazier, Minneapolis; Doris Bornkamp, St. Paul; Josephine Crawford, Faribault; Vera Deterling, Granite Falls; Barbara Dewey, Campbell; Edith Johnson Ek, Virginia; Dorothea Elsner, St. Paul; Frances Folsom, Littlefork; Katherine Reiersen Freeman, Warren; Frances Fruth, Grand Meadow; Iris Gudim, Hayward, Wis.; Ethel Haga, St. Paul; Marybelle Hickner, Baudette; Birdie Hinitz, Minneapolis; Betty Hirsch, Minneapolis; Ruth Hodgson, Dawson; Marjorie Holtby, Minneapolis; Marjorie Ironside, St. Paul; Jean Johnson, Red Wing; Kathleen Dunn Kaye, St. Paul; Jeanne Killmer, St. Paul; Dayna

Continued on page 4, column 3

Regents Adopt Patent Policy

Dr. H. O. Halvorson Appointed Acting-Director of New Hormel Foundation

Meeting on February 19, the Board of Regents, among other actions in the transaction of the month's business, approved a general patent policy for the University of Minnesota in its management of patents that result from researches conducted in whole or in part by members of the staff. Proceeds returned to the institution as a result of such patents are employed for the support of further researches. The plan was recommended by the patent committee, composed of Professor E. W. Davis, W. T. Middlebrook, comptroller, and Dean Everett Fraser of the Law School, chairman.

President Walter C. Coffey informed the Board that Dr. H. O. Halvorson of the department of bacteriology had been named acting-director of the board of the Hormel Institute, a research unit created last winter in the Graduate School, based on gifts from and agreements with the Hormel Foundation of Austin, Minn. Dr. Halvorson, whose methods of destroying waste by bacterial action have attracted international attention, has done work along that and other lines for the Hormel Packing Company. Others named to the board are Dean Theodore C. Blegen of the Graduate School, in which the institute exists, Dean Clyde H. Bailey of the Department of Agriculture, Ralph P. Crane, Austin, Minn., business man, and Dr. F. C. Mann, director of the animal institute and other research projects of The Mayo Foundation at Rochester, Minn., a part of the University of Minnesota operating under the Graduate School. The Board of Regents approved Professor Halvorson's appointment.

Train to Meet Farm Shortage

A program under which about 50 boys and young men will be trained for farm work in a one month's short course at the West Central School of Agriculture, Morris, with a view to making them available for farm work in Minnesota areas where the farm labor supply is inadequate was reported to the Regents by President Coffey. The program is being conducted under a memorandum of understanding between the Farm Security Administration of the Department of Agriculture and the university. It parallels similar programs at several other universities, including one at Ohio State in which men from remote Kentucky areas were sent there for specialized farm training.

Dean Charles H. Rogers of the College of Pharmacy sent word to the Board that at the request of the Defense Supplies Corporation, which is soliciting supplies of quinine and its salts, he had found that the College of Pharmacy possessed 29 1/2 ounces of quinine alkaloids, valued at \$21.62. At his request the Regents gave him permission to present this to the U. S. Defense Supplies Corporation. The biggest source of quinine in the world was cut off from western powers when the Japanese overran the Dutch East Indies. Like rubber, quinine was originally gathered from bark of the wild cinchona tree in South America, but its cultivation was later transferred in large part to the East Indies, to the present loss of the United States.

The name of the Committee on Classification of Non-Academic Personnel was changed on recommendation of Comptroller Middlebrook to "Civil Service Committee." Its functions are those of civil service within the university organization and it has been strengthened recently by addition of the post of director of non-academic personnel, to which Hedwin Anderson was appointed.

Ask Interest in Turkeys

Communications urging that larger money support and more facilities be placed by the University of Minnesota at the disposal of its poultry division, with special reference to turkey investigations, were received by the Board of Regents from the Minnesota Turkey Growers Association and the Northwest Retail Feed Dealers Association. The communication from the latter organizations pointed out that the poultry industry and its allied activities represented from 10 to 12 percent of the agricultural production of the state in 1942, with a product value of more than \$100,000,000. Of this amount, said the Turkey Growers association, turkeys represented \$15,000,000 and Minne-

Postwar Rush To Be Huge

Continued from page 1, column 5

The largest total enrolment (men and women) before World War I was also in the year 1916-17 when the figure was 6,311. As in the case of men students, there was an immediate and marked increase in enrolment following the close of the war, and the year 1919-20 showed a total collegiate enrolment (men and women) of 9,027, an increase over the 1916-17 pre-war high point of approximately 43 per cent.

The post-war rise in enrolment of both men and women continued through the year 1922-23, the male enrolment in that year having reached 7,330 or about 90 per cent above the highest pre-war figure. In that same year the total enrolment reached 11,810, an increase of 87.1 per cent over the 1916-17 figure.

Later Enrolment Trend

The next year (1923-24) the total enrolment showed the first drop of the post-war period, when the figure became 11,631, due entirely to a decrease of men students, from 7,330 to 6,773. The year following showed an increase over the 1922-23 high, and, with the exception of the depression years, 1932 to 1935, enrolment increased year by year until the effect of the present conflict was felt.

One significant fact should not be overlooked in studying the enrolment trends during World War I. The enrolment of women increased steadily year by year without exception. Furthermore, the percentage of women to total enrolment increased during the 11-year period from 36.7 in 1913-14 to 41.8 in 1923-24.

The first post-war year (1919-20) should yield some valuable suggestions for the future. What did that 43 per cent enrolment increase mean to the University administration?

Staff members of that period who are still on the campus remember that the institution was overtaxed in both space and staff. Off-campus rooms in the University area had to be rented to accommodate classes. Class after class of the subjects normally taken by freshmen became filled and had to be closed to additional enrolments. In fact, students who would not otherwise have done so, were registering for subjects which ordinarily experienced a very limited demand. Students enrolled in these classes in order to fill their programs and stay in school in the hope that the next quarter or the next they could take the specific subjects they wanted. It was so difficult at that time to find teachers that many had to be employed temporarily who failed to meet the high standards the university normally required.

What of the Future?

What conclusions can be drawn from these World War I data? It seems conservative to predict that enrolment figures following the present war will exceed those of any previous year in the history of the university. How much they will surpass the largest pre-war year can only be guessed. Is there any reason to suppose that the demand for higher education will be any less, proportionately, after World War I than it was after the previous war? On this assumption, an increase of approximately 40 per cent over the previous high point can be predicted for the first full year following the close of the present conflict. Table II shows enrolment figures comparable to those given in Table I but for the six-year period beginning in 1936-37. The highest figure for men was reached in 1940-41 when 13,023 enrolled. Women reached the highest pre-war figure in 1938-39 with 9,440. The year 1938-39 was also the one when the total cumulative enrolment was highest, 22,

Continued on page 4, column 1

sota produced one-tenth of the nation's turkeys. As is well known, the university, chiefly through the efforts of Professor W. A. Billings of the poultry division, University Farm has been the main instrumentality in bringing about the recent very large increase in the volume and success of the state's turkey business.

A campus landmark was doomed when, in accordance with the recommendation of the Department of Buildings and Grounds, the Board voted to permit the wrecking of a large part of the old Botany Greenhouse on University Avenue near Thirteenth Ave. S. E. It was pointed out that severe storms of the winter had partially demolished one end of the old structure, which was called not worth repairing.

War and the Farmer Discussed by Dr. O. B. Jesness

Continued from page 2, column 2

produce a disastrous inflation. That is, we can get very much higher prices without getting more products. Farmers have much to lose from a runaway inflation and consequently have a strong interest in controlling prices to avoid inflation.

Some farm spokesmen argue that farm income represents only a minor part of the national income, so that farm prices can be permitted to rise without any serious inflationary results. The trouble with this reasoning is that it can be applied equally well to other segments of our economy. Railway labor can say the same thing. Retailers may say the same about their charges. Construction workers, public utilities, teachers, and other groups may do likewise. Furthermore, food costs are important in cost of living figures. Rightly or wrongly, organized labor has been given grounds for believing that wages should rise if living costs rise. In short, if farmers succeed in getting special consideration for a general rise in farm products they are likely to pay dearly for it in terms of higher costs and inflation. Efforts are being made to clear the way for increasing farm prices still more. Before farmers applaud these efforts they will do well to weigh the consequences to themselves and to the nation.

Other groups in our economy need to recognize that this applies to them as well. If they insist upon improving their income situation during the war, then they cannot deny the farmer the right to try to do likewise. Every group and each individual must consider the effects of his demands. All of us have a direct responsibility in this war effort. This responsibility is not only in production of food and war materials but also in avoiding a runaway price situation which in the end can lead to only one thing—disaster.

While an increase in prices generally will not under present circumstances add much, if anything, to production, changes in price relationships may be useful in directing production from less essential to more vital needs. Thus, for instance, if we want more of the milk to go into cheese and less into butter, an increase in the price of one and a decrease in the other may be useful. Wheat production should not be made too attractive in view of the surplus of wheat and the need of other things. We may be justified in lowering wheat prices as well as raising prices of alternative crops to bring about shifts.

What are the prospects for meeting agricultural war needs? There are too many unknowns to make any final answer to this question possible at this time. We do not know whether we will continue to be favored with good weather. We cannot foresee the progress of the war nor how long it will last. We do not know how

fast our shipping shortage will be overcome and consequently do not know how large an armed force or how much lend-lease demand we will supply. We have, however, shifted from a condition of surpluses to one of an increasing number of shortages. We are going to have to hold down and perhaps ration the use of various products such as meats, dairy products, and fats and oils. The armed forces are going to take a large share of canned goods and certain dried fruits. Our people will not have all the choices to which they have become accustomed, but serious deprivation is not on the horizon at present. Widespread crop failure in 1943, of course, could change the picture very decidedly.

May I make a suggestion to consumers in this connection? If you are in a theater or public building and a fire breaks loose, the impulse may be to become panicky and rush pell mell for the exit. But common sense tells you that this is not the road to safety. Safety lies in orderly procedure, in recognizing the right of others, so that your own may be recognized in turn. When you hear that certain items of food may become short, please overcome that panicky instinct to lay in a supply. Yielding to such an impulse creates the very shortage that is feared. Hoarding may change a moderate shortage into a calamity. If the hoarder has ample supply, it is at the expense of his fellow men. Let's be enlightened in our selfishness. Let's be good soldiers. Let's do our part for the safety and welfare of others. Let's make hoarding so unpopular that the hoarder will be so uncomfort-

able in his selfishness that he will decide to play ball and take his chances with the rest of us. The farmer is doing his job in expanding production in spite of obstacles. Let the consumer, and that means all of us, do his part in seeing that the results are distributed as fairly as possible and that they are made to go as far as possible.

It must become clearer to everyone that the sacrifices of war are inescapable. We are still in the frame of mind of looking for gains from war. We still suffer from the delusion that war is a creator of prosperity and that we must make sure that we get our full share. War is not a creator of prosperity. War is a demander of sacrifice. We need to ask what our share in the sacrifices is rather than to present claims for our share in the illusory gains. In war times, national welfare must take first place. Instead of asking for special privilege we must insist that the needs of the nation as a whole receive first consideration. Instead of seeking special privilege we should demand its elimination. After all, the fact that we may be farmers, or workers, or industrialists is secondary. The important thing is that all of us are Americans. It is in this spirit we must work and win this war and the peace which is to follow.

Farm Honor Roll Posted

Continued from page 3, column 3

Klisurich, Chisholm; Althea La Raut, Wilburg, Ore.; Mary Macklin, Litchfield; Ethel Marmorine, Gonvick; Ruth Norelius, Luverne; Corine Proehl, Minneapolis; Mary Puzak, Minneapolis; Shirley Rafn, Two Harbors; Jean Richardson, Waupun, Wis.; Irene Roberts, Minneapolis; Lorraine Schwaner, Chippewa Falls, Wis.; June Sederstrom, Litchfield; Marjorie Shelley, Minneapolis; Grace Shepherd, St. Paul; Wilma Sim, Pelican Rapids; June Simmons, Minneapolis; Guinevere Smythe, Fergus Falls; Alice Snyder, Minneapolis; Maxine Stevens, Becker; Muriel Tews, Hutchinson; Margaret Turnquist, Minneapolis; Verna Wemmering, Goodwin, S. D.; Betty Williams, Minneapolis.

JUNIORS: Nancy Adams, St. Paul; Louise Andersland, Emmons; Doris Angier, Litchfield; Dolores Berdan, Tracy; Janet Bury, Minneapolis; Mary E. Carlson, Willmar; K. Louise Carter, Walnut Grove; Eleanor Christinson, Paynesville; Clarice Epland, St. James; Joan Gordon, Pine Island; Vita Harris, Minneapolis; Alie Hurley, Kokato; Imogene Iverson, Devils Lake, N. D.; Ruth Klonoski, Virginia; Karolynn Knauf, Jamestown, N. D.; Louise Kranstover, St. Paul; Jean Longtin, Cloquet; Helen Melander, St. Paul; Agatha Nelson, Breckenridge; Shirley Peternell, Tracy; Dorothy Peterson, Maynard; Ellen Powell, Minneapolis; Natalie Saari, Soudan; Elizabeth Thurston Schmidt, Anoka; Dorothy Timberg, Minneapolis; Helen Utne, St. Paul; Virginia Wildung, Luverne.

SOPHOMORES: Frances Adlis, Newfolden; Beatrice Baker, Bird Island; Evelynne Cederlund, Claremont; Eleanor Cutler, Mora; Carol Engbretson, Watford City, S. D.; Alice Fawcett, Minneapolis; Alice Gunn, Pine City; Maryann McIntosh Hanson, St. Paul; Constance Hilton, Anoka; Lila Hinze, Pine City; M. Elizabeth Johnson, Minneapolis; Marjorie Jones, St. Paul; Edith Klammer, Mankato; Eileen Kotval, Vesta; Yvonne Lowe, Minneapolis; Margaret Maland, Minneapolis; Dorothy Nelson, Gaylord; Betty A. Oleson, Hutchinson; Borghild Onstad, Spring Grove; Virginia Peyton, Minneapolis; Ann Reichard, Minneapolis; Patricia Roth, Brainerd; Phyllis Sam, Faribault; Margaret Skaar, Hayward; Phyllis Slette, St. Paul; Marie Sterner, New Germany; Helen Truog, Swanville; Kathryn Weesner, Graceville; Theresa Yutzenka, Warren.

FRESHMEN: Kathleen Alexander, Cannon Falls; S. Jean Anderson, Starbuck; Edna Burrill, Minneapolis; Mary De Field, Minneapolis; Mary Engelbart, Cannon Falls; Rita Kaufman, Minneapolis; Jean Keys, St. Paul; Audrey Kraus, Garden City; Jean Legler, Minneapolis; Agnes Luehmann, Lewiston; Jean Morkassel, Warren; Marilyn Nelson, Renville; Frances Nicklay, Barnesville; Lorraine Omholt, Minneapolis; Janet Owen, Springfield; Virginia Paulson, Minneapolis; Lois Todnem, Marshall; Shirley Trovatten, St. Paul.

Athletic Staff Has Nineteen In Armed Forces

Nineteen members of the University of Minnesota athletic staff are serving the armed forces. The complete list is as follows: Dave Bartelma, wrestling, lieutenant in the navy; Bert Baston, football, lieutenant colonel in the army; Bernie Bierman, football, lieutenant colonel in the marines; Lloyd Boyce, trainer, private first class in the army; Ed Burke, baseball, lieutenant in the navy; Mike Cielusak, basketball, lieutenant in the navy; Ed Haislet, boxing, lieutenant in the navy; Wallace Johnson, wrestling, ensign in the navy; Vernal LeVoor, football, lieutenant in the navy; Frank McCormick, athletic director, major in the army; Maurice Ostrander, swimming, lieutenant in the navy; George Otterness, track, lieutenant in the navy; John Roning, football, lieutenant in the navy; Manfred Schrupp, athletic director University High, ensign in the navy; Leslie Schroeder, ticket manager, lieutenant colonel in the civilian air patrol; Lloyd Stein, trainer, lieutenant in the navy; Dallas Ward, football, lieutenant in the navy; Verl Young, basketball, lieutenant in the navy. Charles Wilkinson, assistant in football, naval aviation ground forces.

Evening Class Studies Gardens

Because of the increasing interest in vegetable gardening, the General Extension Division of the University of Minnesota is giving an eight-weeks' night school course designed to meet the needs of those who wish to grow these crops, and to act as leaders in the Victory garden program. The following topics will be discussed:

Introduction; General conduct of the course; importance of the vegetable crops in American agriculture; seeding; transplanting; starting early plants; controlling light, moisture, and temperature in forcing structures; soil and soil fertility in vegetable gardening; classification of vegetables by production; growing asparagus, rhubarb, lettuce and other early spring vegetables; growing warm season crops: tomatoes, melons, eggplant, beans, etc.; growing vegetables adapted to storage: squash, pumpkin, cabbage, carrots, beets, etc.; storage, preservation, marketing, and shipping of vegetables.

Because of wartime conditions emphasis will be given to efficient use of fertilizer, seed, tools, spray material, and labor. The opening meeting was held on Tuesday, March 9, in room 102 Horticultural Building, University Farm Campus.

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T. E. Steward, Editor, 14 Administration Building University of Minnesota, Minneapolis

Victory Garden Needs Planning

Continued from page 1, column 3

water. Therefore, it will be necessary to water them when nature does not provide a sufficient supply. Water only when the plants actually need it. Do not permit the plants to wilt. When watering, soak the soil thoroughly and water less frequently. Too frequent watering, either light or heavy, may do more harm than good. Apply water as an overhead spray, as a slow stream in furrows between the rows, or directly to the individual plants by hose, bucket, or sprinkling can.

Mother Nature doesn't distinguish between weeds and economic plants and smiles or frowns on both alike. Weeds battle with the vegetables for nutritive elements and the right to survive and often win if the gardener doesn't aid the vegetables in the fight. Start cultivation just before planting. The smaller the weeds are the easier they are killed. Keep the garden free of weeds throughout the season. Cultivate shallowly, particularly after the vegetable plants have passed the seedling stage. Cultivate after each rain or irrigation but not before the soil has dried out enough to work well.

Pests will be another problem. Often it's a struggle to see who will harvest the vegetables, the insects or the gardener. "An ounce of prevention is worth a pound of cure." Watch the garden carefully, and soon as a disease or an injurious insect is noted get busy with the sprayer or duster. A day or two later may be too late.

As previously stated, the farm garden should produce enough vegetables for immediate consumption and for a winter supply but what should be planted in the small home garden and how, in addition to the preceding suggestions, can maximum production be attained?

In general, the small gardener should see that his garden contains a supply of leafy, green, and yellow vegetables, and tomatoes. Such crops as spinach or chard, lettuce, green beans, carrots, beets (for greens particularly) and onions should be included. If more space is available, increase the quantity and variety of crops according to the tastes and desires of the gardener's family, continuing a sufficient supply of the green and yellow vegetables and tomatoes, until with sufficient space the garden serves the same function as previously given for the large or farm garden.

May Have to Prod Nature

In getting the maximum production from the small garden, the gardener may have to fudge on Mother Nature a little to make her produce more than she normally would on a given piece of land by use of some of the following methods:

First, crops such as tomatoes and pole beans can be trained to grow on stakes. By making the plants grow up in the air, they can be planted somewhat closer together, and thus more plants can be grown on a given area. Similarly, such crops as melons, squash, pumpkins, or cucumbers might be grown on a fence or trellis at the back or side of the garden and thus take up comparatively little space.

Succession cropping also aids in obtaining maximum production. Certain crops reach the edible stage rapidly and often can be harvested so that another crop can be planted in the same place. An early crop of radishes or lettuce might be followed by another planting of the same crop or by a late crop of beets. A crop of spring turnips might be followed by a fall crop of carrots or rutabagas. Planting these quick maturing crops together in the garden facilitates succession planting. Many other combinations could be worked out according to the wishes of the individual gardener.

Certain small, quick growing plants, such as radishes, lettuce,

or cross may be planted between larger, slower growing crops such as cabbage or tomatoes. The small, quick maturing crop will be harvested and used before the slower maturing crop needs the land. Several rows of such crops as radishes, lettuce, or peas might be planted between the widely spaced rows of the vine crops. Here again, many other combinations may be worked out which will give satisfactory results.

In a few cases, two crops can be sowed in the same row at the same time. Beets, chard, parsley, parsnips, salsify, New Zealand spinach and a few other crops are very slow in germinating. Lettuce, radish, and spinach germinate quickly and can be sown thinly in the rows with these other crops. In addition, this practice will aid in keeping down the weeds, since the quick germinating crops will come up quickly, marking the rows and thus permitting earlier cultivation.

By proper thinning, quite a lot of beet greens, green onions, small carrots, turnips, rutabagas, and some other crops can be obtained for immediate table use without subtracting anything from the mature yield. Crowded plants do not grow well. At the first thinning, done when the plants are rather small, thin them to stand 1/2 to 1 inch apart. At subsequent thinnings, made until the plants are properly spaced in the row, many of the plants removed should be ready for consumption.

To add variety to the diet, certain crops might be planted in the garden of which only a few plants are needed to supply the needs of the average family. Among these crops are rhubarb, perennial onions, horse radish, peppers, chives, sage, mint, dill, caraway, and others.

A successful vegetable garden requires a lot of time and work. Don't plan in March more than you can care for in July. A neglected garden wastes seeds, fertilizers, and spray materials, and it is important that all of these be conserved this year. Don't plant more of any vegetable than you can utilize in the fresh and preserved state. Careful planning, constant attention and plenty of elbow grease will make the Victory Garden a success and a very valuable contribution to the war effort.

Miss Baker Plans Physical Ed. Meet

Miss Gertrude M. Baker, acting-director of the department of physical education for women, University of Minnesota, and president of the Central District, American Association for Health, Physical Education and Recreation, will preside April 2 and 3 over the convention of that body in Kansas City. Miss Baker has prepared the convention program. "Fitness Problems of 1943" will be the general subject of the meetings. Among Minnesota faculty members who will attend, besides Miss Baker, are Miss Helen Starr of her department, Dr. Carl L. Nordly of the department of physical education and athletics, who is Minnesota state director of physical fitness and recreation, and Dr. L. F. Keller, acting director of athletics at Minnesota. Dr. Nordly is president-elect of the Central District organization for next year.

Short on Examining Board

Dr. Lloyd M. Short, director of the university's Public Administration Training Center, is serving as chairman of a special committee to conduct an open, competitive examination of candidates for the newly-created position of civil service director for St. Louis County, Minnesota. Professor C. C. Ludwig, head of the Municipal Reference Bureau, is also on the committee. During the past year Professor Short completed service as a member of the government's Committee on Wartime Requirements for Specialized and Professional Personnel.

Postwar Rush To Be Huge

Continued from page 3, column 5

402. Allowing for a predicted 40 per cent post-war increase, the University of Minnesota administration should not be surprised if instruction has to be provided for more than 30,000 collegiate students during the first full year following the war.

Table II. Net Total Collegiate Students, World War II

Year	Men	Women	Total
1936-37	11,578	8,446	20,024
1937-38	12,351	8,110	20,461
1938-39	12,962	9,440	22,402
1939-40	12,989	8,823	21,812
1940-41	13,023	8,665	21,688
1941-42	11,045	8,333	19,378

For fear some may think this estimate a little optimistic, it might be pointed out that a great many people predict increases ranging from 50 to 60 per cent. They point out that the longer the war lasts, the more individuals there will be whose education has been interrupted and who will all want to resume their studies at the earliest opportunity. Furthermore, at present rates of Army and Navy pay, those who save will be in a position to attend college if they wish. They also remind us that the present war seems certain to result in many more casualties than World War I, and that the number will be greater the longer hostilities last. Thus the need for rehabilitation—a great deal of which will be provided by such institutions as the University of Minnesota—will be correspondingly much greater than it was 25 years ago.

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PBK Speaker Offers "Defense Of Thinking"

Too Little of Teaching Seeks Sound Thought Development, Her Theme

PRINCIPLE AT STAKE

Sound Democracy Calls for Higher Mental Process Than Rote Learning

"A Defense of Thinking" was the title of the Phi Beta Kappa address delivered at the annual meeting of the Minnesota Chapter of that national honor society by Professor Elizabeth Jackson of the Department of English.

Except for minor elisions of anecdotal material, Miss Jackson's paper is here reproduced in full.

It may strike you that I have chosen a strange subject—a Defense of Thinking. You may say that a meeting of Phi Beta Kappa is the one place of all others where thinking needs no defence. I hasten to assure you that I am thinking of you as the defenders. Thinking is being attacked on various fronts, and I should like to point out two lines of defense in which members of Phi Beta Kappa have a special interest and responsibility.

For decades now, as you doubtless realize, there has been a concerted attack on thinking in education. I sometimes think that we shall appear in future histories of education as the Age of the Abolition of Intellect. You are aware of the tendency to strike out of the curriculum all the subjects like grammar and arithmetic that require the semblance of a mental process. You know how much energy is devoted to keeping the bright child from knowing that he is bright and the stupid child from knowing that he is stupid. You are most of you parents or teachers, and you know more about these things than I do.

But, you may say, these strictures apply only to primary and secondary schools. The colleges are free from these tendencies. I can only assure you that you are mistaken. Not two years ago a speaker at a commencement convocation, himself a college president, warned us passionately against the dangers of too much thinking. He said that for the past hundred years American education had been following a false god. "The name of that god is intellectualism, and his doctrine is that the function of education is to train the minds of students." Looking forward to the war which he saw ahead of us, the speaker said that if it killed off intellectualism, the price would not be too great. For a hundred years, according to this man, we have been too intellectual; we have done too good a job training the minds of our students; we have flooded the country with people who think too well.

The first question that rises in my mind is this: "Where are these people?" Some of them, I suppose, are writing the detective stories, but this would hardly account for the entire annual output of all the colleges. These too brilliant minds—we ought to run across them constantly. In politics, in church, over the radio. And do we? How often, I wonder, do we turn off the radio because the intellectual tension has become too great? How often do we come home from church saying, "Good sermon today. Brilliant. Too brilliant." How often in a political campaign do we say to each other, "I should never dare vote for that man. He thinks too clearly."

Where are the people who think too well? It sounds like the refrain of a ballade. You might ask that more famous question, where are the snows of yester year, and get very much the same answer. I can give you my own answer in two syllables . . . "They aren't."

There is a popular superstition that our colleges are full of active young minds, vibrant with original thinking, and that these brilliant intelligences are bullied into stupidity by dry-as-dust professors

Wartime Brings Biggest Winter Graduate Group



Winter quarter graduation exercises in Northrop Memorial Auditorium were photographed for Minnesota Chats by V. P. Hollis of the Photo Laboratory. Nearly 700 graduated as a result of year-round operation, under which many worked through last summer. Shown halting as he receives his diploma from President Walter C. Coffey is Robert Stewart of Dubuque, Iowa, who was first in the group of those receiving reserve commissions after completing the Army ROTC course.

Predicting Speed of Chemical Reaction Described in Talk Before Scientists

Dr. Henry Eyring Speaks to Sigma Xi and Chemists

Improved methods by which the speed of a chemical reaction can be predicted when the conditions are sufficiently known, have been developed by Dr. Henry Eyring, professor of chemistry at Princeton University, and were presented at a joint meeting of the Minnesota chapters of Sigma Xi and the American Chemical Society at the University of Minnesota.

The new formulas, he pointed out, can be of great service in such problems of physics and biology as the plastic flow of solids, the viscosity of liquids, the velocity of sound in air and in water, the velocity of a nerve impulse, the light emitted by luminous bacteria, the action of sulfa drugs, and the behavior of biological enzymes in general.

Chemical reactions take place when the molecules of the reacting substances bump into each other. Since the molecules are incessantly moving about, bumps are frequent. But the reaction does not necessarily occur at each bump. The collisions must be sufficiently strong, and not all the molecules at any one time will have the required energy.

Increase of pressure brings the molecules nearer together, increases the number of bumps per second and speeds the reaction. A rise in temperature makes the molecules move faster and again speeds the reaction. But a rise in temperature also causes expansion, diminishes the concentration of the reacting substances, so that beyond a certain point further rise in temperature slows the reaction.

The most effective way of speeding a reaction is by the use of a catalyst, a substance that activates but does not take part in a reaction and is not changed by it.

Dr. Eyring developed his formulas by use of thermo-dynamics, statistical mechanics and the quantum theory.

The slow plastic flow of a solid under great and prolonged stress, and the easy rapid flow of a liquid, can both be calculated from the formulas for reaction rates, Dr. Eyring showed. Thus we arrive,

he said, at a picture of the flow of liquids as arising from individual molecules jumping from one equilibrium position to an adjacent empty one. Pressure applied to the liquid squeezes out some of the holes, and the flow becomes more difficult. The liquid becomes thick—viscous.

A sound wave traveling through air must be passed on from molecule to molecule. Its speed is the average speed with which the molecules are moving about. In water, the speed of the molecules is the same but they are closer together, and the speed of sound in water is about eight times what it is in air.

A nerve impulse travels at a rate about one-fifteenth as fast as sound in water. This, Dr. Eyring interprets as meaning that each molecule must make about fifteen tries to get the message over to the next molecule.

The light emitted by luminous bacteria is due to the catalytic action of an enzyme. The catalyzing molecule, after bringing about the oxidation of the luciferin molecule, finds itself in an excited state and emits a quantum of blue light. Pressure and temperature affect the intensity of the light in the same way that they affect reaction rates.

Sulfanilamide reduces the light intensity, and so do urethane and similar substances. But the two together reduce the light less than does sulfanilamide alone, indicating that these two drugs are antagonistic and form a combination with each other.

Dr. Eyring concludes that the application of the theory of reaction rates to the study of luminescence leads to a more detailed understanding of the action of drugs on the protein enzyme and opens a much wider field of enzyme chemistry.

Professor Yoder On Duty at Capital

Dr. Dale Yoder, professor of economics and industrial relations in the University of Minnesota, is spending part of the spring quarter in Washington as chief of the planning division in the bureau of program planning and review,

'U' Women Plan Unique Institute

An institute by which it hopes to throw the spotlight on educational and cultural problems of the day which stand in some danger of being obscured by the clouds of world conflict will be held by the University of Minnesota Saturday, May 8, under auspices of the Minnesota Alumnae Club, organization of women graduates of the university.

Six leading members of the university staff and administration will be speakers, namely, President W. C. Coffey, Regent Albert J. Lobb of Rochester, Deans Theodore C. Blegen of the Graduate School, T. R. McConnell of the College of Science, Literature and the Arts, and Wesley E. Peik of the College of Education, and Dr. Richard R. Price, director of the General Extension Division.

Mrs. Frank M. Warren, former regent, and Mrs. C. A. McKinlay, president of the Minnesota Alumnae Club, are among those who planned the meeting, Mrs. Warren being chairman of the Institute Committee. Also on the committee are Mrs. Royal N. Chapman, President Coffey, J. M. Nolte, director of the Center for Continuation Study, Miss Rewey Belle Inglis, Miss Emily Kneubuhl, Mrs. McKinlay, Mrs. Gunnar H. Nordbye and E. B. Pierce, secretary of the General Alumni Association.

Subjects of the six lectures will be: "What are the vital issues in education today?", Dean Peik; "What is the substance and function of general and liberal education?", Dean McConnell; "How shall we test our educational purposes and processes?", Dean Blegen; "What are the dangers of opportunism in educational policies?", Regent Lobb; "From what established and accepted principles of American education shall we proceed?", Dr. Price, and "What is the role of the university in educational leadership?", President Coffey.

A nominal fee of \$1 will be charged each student.

War Manpower Commission. His work will have much to do with plans for using available manpower once the armed forces have obtained the personnel they require. Professor Yoder's appointment was recently confirmed by the Senate.

'U' President Lauds Stassen Saying Farewell

Retiring Minnesota Governor Called Symbol of Education and Leadership

HUNDREDS AT DINNER

Dr. Coffey Says Alumnus Has Imaginative Insight That World Needs

Governor Harold E. Stassen of Minnesota, retiring by resignation to enter the United States Navy as a lieutenant commander, and guest of honor here tonight at a banquet on the campus of the University of Minnesota was called "A symbol of the truth that upon education and good leadership our future as a nation depends." The statement was that of President Walter C. Coffey, principal speaker. Representatives of 48 statewide organizations took part in the farewell, which was sponsored in the first instance by the Minnesota Junior Chamber of Commerce.

President Coffey opened his address by viewing the world at four separate dates, that on which Governor Stassen was born, 1907; that on which he entered the University of Minnesota, 1923; that on which he took his first degree, 1927, and that on which he was first elected governor, 1938.

"The problems of 1943 cannot be resolved successfully by minds steeped in the attitudes of 1907 any more than 1907 automobiles can meet the automotive transportation requirements of 1943," Dr. Coffey said. "Unless men as individuals are sensitive and alert to the transformations that have created the new environment in which they live, they will fail in their attempts to live successfully. Unless groups of men, especially those groups we call nations, likewise recognize that new conditions necessitate new ways of cooperation, we shall be doomed to endless years of bitter struggle and chaos. Nations today can be great only as their collective attitudes are tolerant, only as their outlook is inclusive, and only as they are characterized by co-operative mindedness. It was the failure to recognize and act on these simple, but now fundamental premises that led to the failures after the last world war.

"These observations are not irrelevant to our purposes this evening," President Coffey went on, "for it has always seemed to me that among the qualities that characterize the man we are honoring are the understanding and sensitivity of mind that prevail because he possesses a perspective that enables him to see the problems of today in the light of the past, and hence in the light of the probable future. He possesses what might be termed an imaginative insight into our course of history.

The two great problems now facing the United States, President Coffey said, are that of reconciling the tendency toward centralization of control over human life with the traditional freedom that democracy assumed for the individual and, secondly, the counterpart of this problem on an international scale, namely, how is the world to reconcile the incompatibilities inherent in the two ideologies now struggling for domination? How can the kind of world free men want be achieved when half the world is not free?

"Two things are indispensable," he said, "if we are to surmount the difficulties now confronting us. First, there must be knowledge, there must be facts, there must be understanding, there must be comprehension of the nature of the problems. If you but know the truth, the truth shall make you free. There is no substitute for knowledge of the truth. Forever, it must be the blood and breath of freedom itself."

To this, he said, the answer is education.

"And," he said, "our second need is for enlightened leadership, for from what sources do leaders

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Minnesota Alumni Weekly Changes To Monthly, The Minnesota Alumnus

Was Last Published by a State 'U' to Appear Each Week

The last weekly alumni paper published by a state university, the Minnesota Alumni Weekly, became a monthly with the April issue and will be known hereafter as The Minnesota Alumnus.

Word of the change was made known by E. B. Pierce, secretary of the General Alumni Association. The new policy was recommended by a special committee of alumni composed of Carroll K. Michener, editor of The Northwestern Miller, Arnulf Ueland, president, Midland National bank, and William S. Gibson, editor of The Alumni Weekly.

Larger issues and a more detailed news coverage of alumni activities, as well as more illustrations will be parts of the new editorial policy.

Minnesota Alumni Weekly was founded in 1901 with the late E. Burd Johnson as its editor until 1920. For the subsequent three years Vincent Johnson, now a Minneapolis attorney, edited it, and was followed by Leland F. Leland, who served until Mr. Gibson took over in 1929.

The Minnesota Alumnus will take over a circulation of approximately 11,000 from its predecessor. Under an arrangement with the Board of Regents the university pays for a year's subscription to the magazine for all new graduates, after which they must keep up their own subscriptions.

Offers Defense Of Thinking

Continued from page 1, column 1

who discourage everything except the memorizing of lecture notes. I wonder why these students never take my courses. In my experience, students are infinitely docile. They will memorize anything you give them, no matter how dull or how palpably false. If you ask them to consider a question instead of memorizing a statement, they look at you with open resentment. In spite of your most passionate pleadings, they will fill their final examinations with rehashings of the quarter's lectures.

Unlimited memorizing; next to no thinking. Take the simple matter of dates. I have never made a fetish of dates myself. In my undergraduate days a course in survey was taught by a man named Hart, and we had a song in the dormitories:

The hours I spend with thee,
dear Hart,
Are as a string of dates to me.

That represents an extreme which I have always wished to avoid. Yet a date now and then, by way of a guidepost, I find useful. It helps a student to remember whether he is considering the influence of Chaucer on Keats or Keats on Chaucer. You smile as though I was saying something preposterous. Believe me, I have known students to discuss the influence of Milton on Virgil. Truly, as one of my colleagues says, a thousand years are but as a day in their sight. Speaking less scripturally, there is something verging on the sublime in their complete unthinkingness. Students in general do not think about facts. They do not go through the kind of mental exercise which sees why a given group of facts must be arranged in one way rather than another. Incredibly few students ever discover the usefulness of thinking. Still fewer ever discover the delight of thinking. And some people say that our education is too intellectual.

Traditionally, the University has two functions—the discovery of truth and the transmission of truth. In the discovery of truth, we do well, though as I study the President's report of publications, I doubt if even here we soar too perilously into the intellectual ether. In the transmission of truth we do far less well.

An answer sometimes given is that we have the wrong students. They haven't learned anything in high school. It is said that they have no brains and no training and they don't belong in a university. I know a man who says with perfect sincerity and some truth, "If a student can't get my lectures, he doesn't belong in college."

I wonder. My own mind—of which I think highly—is full of great open spaces. Economics—I know nothing about economics.

—That was made clear to me years ago by Professor Gras, once with us and now at Harvard. I had just come back from my first trip to France, and he was just going. He wanted to know about my experiences with foreign currency. What was my reaction, he asked, when they told me the price of a thing in francs. I said that my reaction was the same in any language: Have I got that much? No, he said, he wished I would take the question seriously. It would throw a great light on the psychology of primitive peoples. In spite of which, I still think that I could be taught economics. I think that most of our students could be taught. Except for a few splendid specimens of solid ivory, almost all of them have the apparatus for thinking if they could be taught to use it.

We have all heard of the ideal college—Mark Hopkins on one end of a log and a student on the other. That is expensive. Mark Hopkins are scarce, and they come high. We save money by putting ten students on the other end of the log, and then twenty, and fifty, and a hundred. Then we buy the man a microphone and let him lecture to five hundred students at once, and by that time he doesn't know whether the boys in the back row are taking notes or shooting craps. There are studies that purport to prove that large classes can be taught as well as small. I know what I think of those studies. I have no doubt that certain things can be taught in large classes—the things that can be taught by books or phonographs or loud speakers without any classes at all. The things that can be taught in large classes are the things that can be taught in large classes; and thinking is not one of them.

Moreover, our discoverers of truth are not necessarily good transmitters of truth. Our professors are chosen for their scholarship, and it is a plain fact of human nature that the men who love research are not as a rule the men who love teaching. Only occasionally a great scholar is also a great teacher. I count it one of the great good fortunes of my life that I took "English 2" with George Lyman Kittredge. He taught us, he bullied us, he terrified us into thinking. No one dared not know why Hamlet spared the king in the third act. No one ever forgot that thunderous question, "What is a play?" "Something to be acted," we would squeak, being female and young. "Something to be WHAT?" "ACTED!" No one got through "English 2" without knowing that—and an awful lot more.

I don't mean that our professors don't give good lectures. Generally that is what they do do. A man presents his material in clear and orderly fashion and thinks that he has done all that should be asked of a teacher in a college course. I often think that it is lucky that these men don't see what becomes of their perfectly ordered lectures as they disappear into the notebooks. It is wonderful what can be done to an argument by a casual dropping out of negatives. It is wonderful what can be accomplished merely by phonetic spelling. You mention an Oedipus complex, and it comes back to you an adipose complex. Only last month I told the story of Isolt of the White Hands and met her the next week with white hens.

These things happen. Perhaps it is inevitable that they should. I am not framing an indictment or offering a remedy. I only say that Kittredges and Mark Hopkins are rare. I say that there is a great discrepancy between the things that we think we teach and the things that our students learn. There is a great gulf between the things that they might learn and the things that they actually do learn. With that gulf yawning wide before us we should be very shy of saying that our education is too intellectual.

A Defense of Thinking

Let me go back to my title, a Defense of Thinking. I have in mind a second and very different line of attack. This again, is a kind of theory to which members of Phi Beta Kappa are particularly exposed. It belongs to the high-brows, the intelligentsia. You will find it in the Atlantic, the New Republic, and the Nation; never, I think, in the movie magazines or True Confessions. I have in mind our tendency to depreciate the intellectual faculties of man wherever they are found. We pride ourselves on the modern discovery that man is not a rational

Certificate Shows Entry in Service

THE REGENTS OF

THE UNIVERSITY OF MINNESOTA

CERTIFY THAT

A STUDENT IN GOOD STANDING LEFT THE UNIVERSITY ON TO ENTER THE ARMED FORCES OF THE UNITED STATES OR ITS ALLIES IN RECOGNITION OF THIS SERVICE TO THE NATION THE REGENTS THE PRESIDENT AND THE FACULTIES OF THE UNIVERSITY OF MINNESOTA HAVE CAUSED THIS CERTIFICATE TO BE PREPARED

W. Coffey
PRESIDENT



DEAN

An individually engrossed certificate is being given to every University student to enter the armed services. The artistically designed certificates are embossed on all-rag parchment paper and include the student's name and the date he left the University.

The granting of these service certificates conforms in general to the plan established at the time of the First World War. Formal approval of the present plan was made by the Regents on June 13, 1942, when that body approved the report of a special faculty committee.

On each certificate appear the signatures of President W. C. Coffey, Secretary W. T. Middlebrook, and the dean of the college in which the student was enrolled, together with a reproduction of the Official University seal. The text which appears on each certificate reads as follows: "The Regents of the University of Minnesota certify that (name of student) a student in good standing, left the University on (date of leaving) to enter the armed forces of the United States and its allies. In recognition of this service to the Nation the Regents, the President, and the Faculties of the University of Minnesota have caused this certificate to be prepared."

In the future a certificate will be issued to each eligible student at the time he leaves the University. An attempt is being made to provide a certificate for every student who, since the proclamation of the emergency, left the University to enter the armed forces. All students are eligible whether they entered by enlistment or through Selective Service. Such students or their nearest relatives are urged to make application immediately for the certificates to the Recorder's Office, University of Minnesota, Minneapolis.

Beauty and Valor Give Blood to R.C. In 'U' Gunshed

One hundred and thirty pints of fighting blood and one pint of the lovely feminine blood of the unit's sweetheart were contributed by members of the University of Minnesota's Naval ROTC on a recent day. The Red Cross sent its mobile unit to the campus and the rugged sailors, disdaining the shelter of a hospital, went through the operation in the gun shed behind the Armory. Miss Kay Markham, daughter of editor James (Jim) Markham of the Hennepin County Review, and, by election, sweetheart of the unit, stood womanfully by and bled with her mates. Arrangements for the donation were made with Lt. Comm. J. A. Flynn, professor of naval science and tactics and head of the naval unit on the Minnesota campus.

animal. He is not guided by his reason, we say, but by far more powerful physical and emotional expulsions. His mind is only the shiny tip of an iceberg, with the great determining bulk submerged and invisible.

I have never understood why this should be regarded as a modern discovery. It would have been no surprise to Jonathan Swift, who refused to call man a reasonable animal, though he granted him capable of reason. It would not have astonished the Apostle Paul, who set it down himself: "The good that I would I do not, but the evil which I would not, that I do." It must have been in the mind of Plato when he made his image of the charioteer with the two horses of unlike breed. The modernness, I take it, lies in the notion that this is the way things ought to be. Because man often fails to act wisely in the light of his intelligence, let him abandon intelligence entirely. Let him chip off the tip of the iceberg, and—specific gravity permitting—keep the whole iceberg under water.

If I followed the late Irving Babbit—another of the great teachers of my youth—I should trace this idea back to that fountainhead of all evil, Jean-Jacques Rousseau. Avoiding any such problematical ascriptions, I shall merely summarize certain facts as I have observed them myself. In English literature, for a considerable number of centuries, man's reason was regarded as his greatest glory, the quality in which he most nearly approached God. Its symbol was light. "The first creature of God, in the works of the days, was the light of the sense; and the last was the light of reason; and his sabbath work ever since, is the illumination of his spirit." In the seventeenth century reason was right reason, as though the noun and the adjective formed a single concept. Milton could put

reason and Christ together in successive pentameters, as the two entities to which the angels owed allegiance.

Right reason for their law,
and for their king
Messiah, who by right of merit reigns.

The eighteenth century made reason something far narrower than the "Right Reason" of Bacon and Milton, and yet talked about it a great deal and made great claims for its universal validity. In that same century Rousseau appeared as the apostle of the emotions. From then on, as Babbitt loved to point out, the poets are aligned against reason. They distrust those false secondary powers by which we multiply distinctions. Their faith is in the primary strength of instinct and intuition.

For our own day I shall take my illustrations from Yeats and D. H. Lawrence. Yeats, most people will agree, is one of the great poetic voices of our age. I realize that Lawrence has gone out of fashion. You can ask, Who now reads Lawrence? and expect no answer. On the other hand, if you change your tense and ask, Who has read Lawrence, the answer is, practically every one over thirty. There are pages in "For Whom the Bell Tolls" that are more like Lawrence than Lawrence himself. Most of our moderns unite in distrusting intellect. "The brain, the brain" cried a Russian poet. "It is not an organ to be relied upon—it is monstrously developed. It is swelling like a goitre." Lawrence has a poem called "Climb Down, O Lordly Mind!" It might be taken as the epigraph for an encyclopedia of the literature of our time.

From the beginning Yeats put his trust in the intuitive wisdom of the Fool. In "The Hour Glass," when the Wise Man comes to die, he turns to his disciples and they have no help for him. Only Teague the Fool can see the angel and the Wise Man's soul like a butterfly. The fool, the jester, the lunatic, repeat themselves in poem after poem down to "A Prayer for Old Age."

God guard me from those thoughts men think
In the mind alone,
He that sings a lasting song
Thinks in a marrow-bone.

Lawrence's creed is even more explicit. "My great religion is a belief in the blood, the flesh, as being wiser than the intellect. We can go wrong in our minds. But what our blood feels and believes and says is always true."

The blood knows in darkness and forever dark,
In touch, by intuition, instinctively.

I lift up mine eyes unto the hills
And there they are, but no strength comes from them to me.

Only from darkness
And ceasing to see
Strength comes.

Light against darkness, intelli-

'U' High Sends Many to Service

University high school sent its seventeenth faculty member into service recently when James E. Curtis, teacher and assistant athletic director, left for Columbia University for two months of naval indoctrination training. He has been commissioned lieutenant, j.g. and will have duties in connection with the new V-12 program to start July 1. Mrs. Curtis and the family will remain in Minneapolis. Curtis was to have been principal of the demonstration high school during the forthcoming summer session, but resigned to take the commission. Fourteen former staff members of the school are in uniform, three are in closely related war work and an eighteenth is soon to go, according to Dr. G. Lester Anderson, principal.

gence against intuition. I can clinch my point with a couplet from Pope and a modern addendum. You remember Pope's epitaph for Sir Isaac Newton.

Nature and Nature's laws lay hid in Night;
God said, Let Newton be! and all was light.

Punch brought the couplet up to date.

It could not last. The Devil shouting, "HO!
Let Einstein be!" restored the status quo.

Knowing even less about physics than about economics I am willing to believe that Einstein has brought not darkness but a deeper light. There are plenty of other thinkers, however, from whom we get no light but rather darkness visible. And if your light be darkness, how great is that darkness!

It is worth pointing out that these men that I have been discussing are almost to a man enemies of democracy and the middle classes. They have a lyric faith in a peasantry—powerful—close to the soil—wise in the procession of the equinoxes and the everlasting cycles of procreation and birth and death—uncontaminated by schools and books. It is hard, I think, to find many such peasants in this country. They have also a great faith in an aristocracy, gifted, tolerant, courageous, wise in the arts of life and government, a miraculous synthesis of Pericles and Lord Peter Wimsey, Sir Philip Sidney and the Scarlet Pimpernel. I believe that these aristocrats would be even harder to find than the peasants. But for the middle classes these people, the Yeates and Lawrences, have only contempt and distrust; nothing but scorn for the people like us who go to college and make Phi Beta Kappa and work for a living and think and vote and make the wheels go round in a modern democracy.

There is a remarkable correspondence between these attitudes and the philosophy of the Nazi. It is not a chance coincidence. The ideas grow naturally out of each other and belong together. Put your faith in intuition; distrust intellect; hate democracy. The great symbolic act of the Nazi is the burning of the books. We had a characteristic pronouncement from the professor of ancient history of Gottingen. "We reject international science. We reject the international republic of learning. We reject research for its own sake." In fact, we reject all disinterested thinking. In the Reich there is no longer Truth; only German Truth. And from Hitler himself we have a line that might have come from D. H. Lawrence. "We Nordics think with our blood."

Think with your blood, and let the blood-stream drown

Those old absurdities of verb and noun,
Premise, conclusion, logic, cause, effect,
And that Hebraic thing called intellect.

Make an arithmetic of blood and add
New horrors to the totals of deSade;

Write a geometry of blood and scrawl
"Quod erat demonstrandum, Blood is all."

Think with your blood and lay Europe waste. Think with your blood and give the democracies a *reductio ad absurdum*,—*reductio ad horrendum*, if you like—of the doctrine that the blood and the flesh are safer guides than the reason.

The whole notion of democracy, we need to remind ourselves, centres round the conception of man as a thinking animal. That is true in war as well as peace. I have read of a French army officer who

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'U' Must Preserve Strength for Task To Follow War

Machinery Will Be Kept Oiled for Demands to Come

POSTWAR RUSH SURE

President Coffey States Case in Winter Graduation Address

Speaking to the largest winter-quarter graduating class in the history of the University of Minnesota, President W. C. Coffey pledged the students, many of whom are soon to depart for war service, that the university will do everything in its power to retain its ability and fitness to serve once the battle flags have again been furled. Furthermore, said he, universities like Minnesota must be prepared at war's end for an even larger rush back to campuses than the one that was experienced at the close of the first world war. Nor, he said, can the institutions of higher learning allow themselves to become merely practical while they are in the process of meeting war's demands. The cultural tradition in education must be upheld; the higher values, a major aim of all educational processes, must be kept ever in mind and the means of spreading these values must be retained and protected.

Janus, the ancient Italian god, is to my mind one of the most interesting characters from the pages of mythology. This may seem a strange observation with which to begin an address to the graduating class of the winter quarter, 1943. Yet consider the matter for a moment: Janus was the god under whose care fell all the gates of Rome, and especially under his protection was the monumental archway out from which the armies passed on their way to war, and inwardly through which they returned to the city once the battles were over. In later years, the books tell us, the archway became the temple of Janus, and the symbolism of the gates was perpetuated in the doors of the temple, which were always open in time of war, and closed in time of peace. And then it came to be, by one of those psychological transfers in which we all engage, that the god of the gate which opened both ways, himself came to be represented by an image with a double head that looked both ways.

We, today, in the midst of a war, are looking to the future; and yet he who would look to the future must also look to the past. Tonight I wish to consider one specific problem that involves the years that lie ahead of this institution from which you are graduating; and to do so I must turn backward to learn what lessons history has to tell. Is it not clear, therefore, why my thoughts should be filled with associations of Janus, who presumably could see in both directions at once?

Those of you who have been on the campus since the fateful day of Pearl Harbor are fully aware of the uncertainties, the doubts, and even the fears that the war has brought to all of us. At first the changes came slowly—so slowly that they were scarcely perceptible, and that very fact fretted us because we doubted that we were doing all that we might or could do to help in the prosecution of the war. Then gradually the full impact of the world's dislocations began to intrude upon our consciousness.

By the first weeks of this academic year it was apparent that the campus was being transformed from the ways of peace to the ways of war. One by one, and then in numbers, we saw uniforms come onto the campus to supplement our own student reserves: first the sailors, and then the soldiers. The number of enlisted men is increasing every day, and the time is not far distant when more of the men students here will be in uniform than in civilian clothes. Others of our students accepted the responsibilities that are inherent in Selective Service deferment, and quickened the pace of their studies to the end that they might sooner take their places in positions where technically trained man power is urgently needed. And then—and hardest of all to accept—we saw our friends and associates start to leave us—some to enter the armed services; others to work in the indispensable jobs behind the fighting lines. The stars on our service flag multiplied, and the

Three Will Study on Guggenheim Fellowships



John T. Flanagan



David H. Willson



Helge Kokeritz

Mrs. Hazel Nohavec Heads Music Group

Prof. Hazel B. Nohavec of the Music department has been elected president of the North Central division, Educators National Conference. This division includes the states of Illinois, Indiana, Iowa, Michigan, Minnesota, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin. Membership on the executive board of the Music Educators National Conference goes with the office.

Mrs. Nohavec is also serving a six year term as a member of the Research Council for this national organization and is executive secretary-treasurer of the Minnesota Public School Music League.

field of white became almost solid blue. Some of those stars turned to gold.

I shall not review all the changes that have occurred in recent months. A summary of them has been given on several occasions, and you are familiar with it. But it is necessary to repeat that these manifold changes have made of this University a war institution, devoting its abilities, its energies, its facilities to activities that will contribute to the victory we are determined to win.

War and Post-war Problems

All of this, of course, has brought many problems, to you as students, to the faculty, and to me and my administrative colleagues. But it is not of these problems of today that I wish to speak; they are on the way to solution. It is to one of the University's most important post-war problems that I would direct attention. While most of you and your classmates are thinking today of the hardships that are involved in withdrawing from the University, I would jump ahead to the time when the war is over, and many of you are returning to the campus to resume your interrupted studies. For you and they will return. College and university enrollments are like a river, which, if it is dammed, dwindles in size—only to rise to flood proportions when the dam is broken.

Let us, like Janus, look backward for a moment to the year 1916-17. For nearly a quarter of a century American higher education had been growing steadily. The United States Bureau of Education in its survey of 1916 could state: "It is clear, then that although the number of higher institutions has not increased very much, there has been a large increase in the amount of higher education provided."

This was the era in which the democratic faith in education came into full flowering. As the Bureau of Education pointed out in the report to which I have referred, "This increase in the amount of higher education corresponds, of course, to an increasing demand for it. Indeed, one of the most potent tendencies of the last quarter of a century (I am still quoting from the 1916 report) has been the democratization of college education. . . . The combined pressures of State institutions, large philanthropic enterprises, and the propaganda of leading educational writers led to the general spread of the belief that not only should college education be open to everybody, but that nearly everybody should have it."

It was this new faith that motivated the striking growth in college registrations in the decades just preceding our entrance into World War I. I stress this, be-

Lauds Stassen In Farewell

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come? We can personalize the answer to this question. We are talking primarily tonight of Harold Stassen. His was a fine endowment by birth, but the abilities, the capacities and the potentialities that came to him by inheritance required discipline and training. In the home, in the church, a part of that process was carried forward. But it was in the schools of this state that the foundations of knowledge were laid that have made his distinguished career possible. There is nothing in which a democratic people should take more pride and satisfaction than in the fact that through their support of public education the quality of leadership has been nurtured and developed in such a man as Harold Stassen.

"We do not know what the future will be; nor can we foretell what part Harold Stassen will play in fashioning it. From the pages of the past I have quoted newspaper headlines that have told of the world as it has been thus far during Harold Stassen's lifetime. I will now leave it to your imagination to write the headlines as they are to be from this time forward. But of this we can be certain—that wherever the future may find Harold Stassen, the imprint of his personality, his training, and his experience will be felt. The University of Minnesota is proud to number him among its graduates. The people of Minnesota are proud to regard him as one of them. We can admire him for all that he has accomplished thus far in life and for the decision he has now made to enter the service of his country in time of war. And as he enters the Navy and leaves the state he has served so well, we can join in saying, Good luck and Godspeed!"

cause to my mind it is important—important in that this faith in education that is so characteristic of the American people has never diminished. It is stronger today than ever before. And this fact has fundamental implications for the post-war years, for if any prophecy is safe today, it is that the urge toward a college and university education will be as strong after this war as it was after the war that ended in 1918.

And what happened then? I shall not attempt to introduce the wealth of statistical material that could be marshaled to tell

Continued on page 4, column 1

Offers Defense Of Thinking

Continued from page 2, column 5 said that the most remarkable thing he saw in the last war was a company of Americans at Chateau Thierry, advancing under fire and changing the sights of their rifles as they went, without any word of command. I didn't read it in a book on democracy; I read it in a book on rifle shooting. We have all heard that Waterloo was won on the playing fields of Eton. We don't always realize what that implies; that Waterloo was won by its officers, sons of gentlemen. If Waterloo was won on the playing fields of Eton, Chateau Thierry was won potting rabbits Sunday afternoons. I know that you don't shoot rabbits with a rifle, but you shoot them with an individual intelli-

Three members of the faculty in the University of Minnesota's College of Science, Literature and the Arts have been awarded Guggenheim fellowships on which to spend all or part of the next year in scholarly researches. They are Professors Helge Kokeritz, teacher of English and Scandinavian; John T. Flanagan, English teacher, and David H. Willson, history teacher.

Dr. Willson will employ his time in completing a study of James I of England, a subject on which he spent the period allowed him by an earlier Guggenheim fellowship. Much of his work will be done at the famous Huntington Library in California where, strange though it seems, there is one of the finest collections of research material on James I to be found anywhere.

Dr. Kokeritz' work will be a study of Shakespearean pronunciation, which will be based on recent new work in early English phonology. Of Swedish birth, Professor Kokeritz was for ten years a member of the faculty of the University of Uppsala, perhaps Sweden's best known institution of learning.

Professor Flanagan is known for volumes he has edited dealing with early days in Minnesota and the west. His project will be a book on the literature of the Middle West from about 1820 up to the present. All three are prominent members of the University of Minnesota teaching staff.

gence—which afternoon, which woods, which rabbit. A very different thing from Hitler Jugend.

Of course democracies make mistakes. Often enough they pick the wrong rabbit. They follow bad leaders, poor policies, false doctrines. But it is also in the nature of democracy that it can change its mind. It can see its mistakes and rectify them, because the mind of a democracy is made up of individual minds, thinking.

I have a vision of a democracy thinking. It comes partly from Milton, who, in the first years of a civil war, could write a passionate defence of freedom of the press. He saw London at war as a mighty arsenal; not only hammers and anvils but pens and heads, lovers of truth, "sitting by their studious lamps, musing, searching, revolving new notions and ideas—reading, trying all things, assenting to the voice of reason and conviction." In my visionary democracy there are all sorts of minds—good, mediocre, dull—but each according to its own capacity moves of its own accord and asks questions and thinks.

I have sense enough to know that this is only a far-off divine event, too far off, and too divine. In another mood I see the world much more as Shelley saw it:

The good want power, but to weep barren tears.
The powerful goodness want; worse need for them.
The wise want love; and those who want wisdom;
And all best things are thus confused to ill.
Or as Yeats saw it:
Things fall apart; the centre cannot hold;
Mere anarchy is loosed upon the world—
The best lack all conviction, while the worst
Are full of passionate intensity.
And yet. And yet. A democracy, from its very nature, is never static; it is always in process of becoming. Always the good are getting more power—or less; more wisdom—or less; more love—or more hate. Wise and good men are growing momentarily stronger or weaker in conviction. More than

Dean Willey Intermediary With Services

The casual visitor to the campus these days is inevitably impressed by the number of uniformed men in evidence. He would, if he knew the facts, also be impressed by the large number of reserve students who are not yet on active duty, but soon will be called and placed in uniform. The army has developed its Army Specialized Training Program, and the Navy its various V programs. In addition the Marine Corps and Coast Guard have their special college training plans. Each passing week finds more students being called to active service under these training projects and being reassigned to colleges for special types of instruction. The University of Minnesota has already been designated for inspection and possible contract for armed service training programs as follows:

- By the War Department
- 1—For training Engineers
 - 2—For training Army Aviation Cadets
 - 3—For Basic training
 - 4—For training in Personnel Psychology
 - 5—For Area and Language training
 - 6—For Pre-medical training
 - 7—For training in Meteorology for the Army Air Forces
 - 8—For Medical training
 - 9—For Dental training
- By the Navy Department
- 1—For training Engineers
 - 2—For Pre-medical training
 - 3—For Medical training
 - 4—For Dental training

Contracts at the University have already been negotiated and student-soldiers are in residence in pre-meteorology, in advanced engineering, and in Army Air Forces Pre-flight.

Obviously all of these programs involved innumerable contacts at every stage with the War and Navy Departments. The contacts began in the early days when students were being recruited for these programs; they continue in new and varied forms as the programs develop and the soldiers and sailors return to the campus. In order that there may be uniform channels through which all matters relating to these programs will flow, and to avoid confusion and overlapping of responsibilities, the Joint Army and Navy Personnel Board, under which the programs are developed, requested President Coffey to designate some member of the staff to serve as Armed Services Representative on the campus. President Coffey named his assistant, Dean Malcolm M. Willey, thus centralizing the general administration of these student programs in the President's office. Dean Willey is thus the link between the University, the students, and the Armed Services, and has been duly appointed as such in a letter from Rear Admiral Randall Jacobs, Chairman of the Joint Army and Navy Personnel Board.

All matters of policy involving the program are transmitted to the services through Dean Willey. Similarly, all announcements concerning the training programs as they involve either the institution or the students, are received by him from the Army, the Navy, the Marine Corps, and the Coast Guard. Problems of individual students are transmitted to the proper service groups through his office, and questions involving students, raised by the Services, are sent to him for answer.

Obviously, the work involved has to be shared. Much responsibility falls upon Dean Edmund G. Williamson, Dean of Students, and upon the Testing Bureau which serves as armed service adviser to students. In this counseling work, the leadership has been taken by Mr. Ralph F. Berdie, Assistant to the Director of the Testing Bureau.

The reporting of grades for all reservist students is a function of the Recorder, and Acting Director of Admissions, True E. Pettengill has been unusually busy in providing the date requested by the War and Navy Departments.

any other kind of government, a democracy takes its color from the quality of its thinking. Only as power goes hand in hand with good will and right reason can a democracy thrive. It is for all thinking men in a democracy to be watchful to see that each time the balance sways, it sways to the better side. To see to it that democracy shall have its thinkers and that those thinkers shall be good—that is one of the functions, surely the chief function, of Phi Beta Kappa.

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University of Minnesota, Minneapolis

Who Was It Knocked Rationing?

IF THERE is any state in the Union that should not object to food rationing, that state is Minnesota. This may seem paradoxical if one considers only the vast amounts of rationed food produced in Minnesota, with its packing plants, canning factories, its creameries, its cheese factories, its dairies, yes, even its sugar beet production. But we should all remember one or two great facts, among them, not only that Minnesota is a food producing state but that rationing, more than anything that ever happened before or is likely soon to happen again, will give the American people a comprehension of the preciousness of an abundance of good food. Rationing is giving to foods produced in Minnesota an "institutional" type of advertising that is worth many millions of dollars, probably untold millions. Think of the cartoons showing a pound of butter in a glass case, carefully watched by a guard. Think of the rationing jokes, which should do for pork chops what the vaudeville mania for "flivver" jokes once did for the Ford car. Think of the desire created for cheese, human nature being what it is, by a government edict saying that one may buy and eat only so much. Haw! Pretty valuable stuff, what? Minnesota is no goat in the rationing business, but an eventual great gainer. The real goat is the old goat of the funny papers who was always eating tin cans. Minnesota Chats wonders how that old guy will take to waxed paper containers.

Must Retain Postwar Strength

Continued from page 3, column 3

the story of what occurred to college registrations just before and just after the last war. But perhaps I can describe them to you. Imagine, if you will, one of those charts the statisticians are so fond of—charts that look somewhat like a cross between the profile of a ski jump and a cartoonist's impression of lightning. We start with a heavy black line down in the lower left-hand corner. That is 1890. Our heavy line represents college enrollments. It starts upward to its first peak in 1896—a rise of some 35 per cent. Then a minor ski jump, and another upward push to 1902. From here our line continues mounting (with a slant that represents an increase twice as rapid as that of the general population growth) until we come to the point that is 1910. Our college population is now almost double our starting date. But this is only a good beginning. The black line continues upward with the persistence of a July thermometer, until in 1916 the increase is approximately 194 per cent over the starting year down in the lower left-hand corner. Then America entered the war. It was a short war for this country, but even so, college enrollments fell—they fell in absolute numbers for the first time in three decades. They fell, just as we have been seeing them fall during these recent months. Accordingly, our black line heads downward, and precipitously.

The Bureau of Education made a study of these enrollment losses by academic fields. I looked them up the other day, and they present a most familiar pattern:

In the last war students in agriculture declined 35 per cent; in engineering, 18 per cent; in education, 9 per cent; in law, 42 per cent; in dentistry, 20 per cent; in pharmacy, 12 per cent; in business, 11 per cent; and in the liberal arts, 11 per cent (which is the combined figure representing a loss of 21 per cent for men in liberal arts, and a gain of nearly 2 per cent for women). Only in medicine were there college gains, of 3 per cent.

These figures are interesting as historical items; but they take on a new and living significance when we follow them through to the post-war years.

Growth after Last War

The declining war registrations reached their low point in 1918. Then came the peace and the return of the soldiers to civil life. Those who had never started college because of the war, and those whose college careers had been broken by service, surged back to the campuses. In 1920 this

country had the largest college registration in its entire educational history up to that date, and that growth continued to new heights in 1922. You cannot be expected to remember figures, but do try to make that black line I have been drawing, stick in your memory. And with your mind's eye look especially at the right-hand upper end of that line, for it says, graphically, that American college registrations doubled between the war year of 1918 and the post-war year of 1922.

There is hope and encouragement in those figures, for they show that educational institutions, in spite of all the worries and dire predictions, survived the last war, bad as it was, and then had a resurgence of life that was just short of astonishing, once the war had ended. Turning once more with Janus to look toward the future there is every reason to believe that in this matter of post-war college enrollments, history will repeat itself once this present war has ended.

The World War I figures that I have sketched for the country as a whole had their counterpart at the University of Minnesota. This institution had reached an enrollment of 6,300 students in 1916-17—the largest in its history. A decrease came abruptly in the following academic year. But by 1920 the registration had achieved a new high of just over 9,000 students, an increase of approximately 43 per cent over the war year. As with the national figures, this was the beginning of an upward movement that carried on into the 1920's, and was finally brought into reverse only by the depression.

Interesting and comforting though these earlier post-war figures may be, they are likewise a challenge as indicators of the shape of things to come. They present a problem that affects every one of you who may be even now planning to return to the University once your war service has been rendered. What is more important, there are many like you, who have left classes to fight the war. Many had to leave before acquiring a diploma—in that respect you here tonight are doubly fortunate, even though the war makes it impossible to go on into further professional study that some of you may have been planning. There are also many students who have completed high school but who have been unwilling to start their college courses. Regardless of whether their choice was right or wrong, I can fully understand and admire their decision to serve their country before beginning college work. The longer this war goes on, the larger will become the body of young men, and young women, who—to use my earlier figure—are dammed up in the reservoir of potential college students, and who will

flood back to the campus once the peace and demobilization blast the dam.

Will the University Be Ready?

Are we going to be ready to serve them when that happy day of release arrives?

The answer to that question involves one of the most important and fundamental questions that this University faces today. It is my solemn judgment that this state will do an irreparable injustice to the Minnesota men and women who are fighting this war, if it fails to make adequate provision at this University for their proper instruction at the time they will return to its campus.

I am not speaking of direct financial aid to the returning soldiers—aid designed to make it easier for them to begin or to resume their higher studies. I believe some aid is to be expected, and that there is perhaps more of a federal than a state responsibility to provide it. But whether there is a governmental subsidy to the students or not, they will return in vast numbers, and we must be ready for them. It is provision to meet this responsibility institutionally that I am concerned about. Will there be an adequate faculty here to provide the instruction? Will the financial resources of the University be sufficient to make available the kind of training these returned soldier-students will be clamoring for? Or will we make the mistakes that were made by many colleges and universities in 1918 and 1919, when they let their faculties slip away, and their facilities go into disuse, and in consequence were totally unprepared to meet the onrush of students?

To me the answer is perfectly clear. The University must maintain the nucleus of its faculty in every department in order to build its instructional staff quickly and soundly when the time for building comes. The University must have, even in war years—yes, because they are war years—the financial support that will insure that it does not lose its momentum, and become slowed down at the very time when it must be preparing to go suddenly into high activity. Once a university loses its staff, once it retrenches to a point that is restrictive, once it has sapped the vitality that gives it life, once it has been denied the resources that are its lifeblood—when any of these things happen, a university is injured, just as a body is injured by lack of proper nourishment. And the recovery process is long, slow, and painful. The much publicized concept of "keeping fit" is just as applicable to institutions as it is to persons.

It is against any weakening of this University that we must be on guard, for only by continuous strength—by continuous "fitness"—can we be ready to do the big job that we shall be called upon to do. Only by being ready shall we be able to give the sons and daughters of Minnesota the education that they rightfully expect to receive at their university. They are now making the biggest sacrifice human beings can be called upon to make—to die for one's country if need be. Ours is the parallel obligation to make certain that when peace comes these same sons and daughters have every opportunity we of the state can give them to prepare themselves for living in the world of peace they will have helped achieve.

And that is why I have on this occasion called to your attention as students, and to the citizens of this state who may directly or indirectly hear what I am saying, the all important matter of keeping this University functioning effectively during the difficult months of war. If we fail in this, our failure will be deep and tragic, for we shall have failed the youth of Minnesota.

And now a more personal word, to you of the graduating class. This is a momentous evening, for you are the first group of accelerated students to graduate; in a real sense, you are the first war class. Your graduation marks the point at which we may truthfully say that the University of Minnesota has fully achieved its transformation from a peace-time to a war-time institution. You are the trained men and women of whom we have been reading and hearing so much. You are to be congratulated in that you have been able to finish a course of study, and receive a diploma. In that very fact, however, lies your great responsibility, for now that your time to serve has come, you must serve well. The University has a double interest in you now. It is interested in you as graduates—as its most recent alumni; but it is also interested in you as

Mrs. Christian Presents Books

Mrs. George C. Christian has presented the University Library about twenty books and some correspondence relating to archeological researches of the expedition of Dr. Albert E. Jenks. Mrs. Christian was one of the patrons of the expedition. The books include two important historical treatises on aviation, Turner's "Astra Castra" and J. Glaisher's "Travels in the Air."

students who have been trained during war time. Through that training you can give service, and thus through you the University makes its contribution.

Basic Values Must Endure

War, of course, tends to shift our values. On the one hand, war makes us much more practical; it focuses attention on jobs that must be done immediately, for survival is at stake. And yet I would hope that even though the range of our intellectual activity is somewhat restricted by the necessities induced by war, we do not forget that the values of a world at war are not the values to which normally we deeply aspire. In time of war only one thing matters—winning; but in time of peace, many and varied things matter. The only excuse for war is that it may help us to achieve and preserve the kind of life men truly want to live.

An education, although it is acquired during war years, is no education at all if it goes no further in application than the fighting of a war. We as a faculty and as a university must never forget that. A true education, the kind of education that the University of Minnesota aims to make possible, and the kind of education I hope you have in some measure achieved, although on an accelerated basis, is an education calculated to make for satisfied living in a world at peace. Unless even your war-time education has made it possible for you to see beyond war and into the world that lies on the other side of strife and battle, you as students, and we as an institution have failed.

But I do not think there is any reason to believe either of us has failed.

Scientists Met At 'U' April 24

Representatives of science from the University of Minnesota, most of the state colleges and teachers colleges, the Mayo Foundation and industry as represented by General Mills, Inc., conducted an all-day session on the campus of the University of Minnesota Saturday, April 24, when the Minnesota Academy of Science held its annual conference.

General sessions will occupy the morning, with meetings in the auditorium of the Minnesota Museum of Natural History, starting with a report by Prof. A. N. Wilcox for the academy's committee on preservation of natural conditions. After lunch the biological science section will meet in the Natural History auditorium, the physical science section in the Center for Continuation Study, the Junior Academy of Science in the auditorium of the Zoology building, the social science section in the auditorium of Murphy Hall and the science education section in the Museum of Natural History.

Sessions have been shortened from the usual two days to one. Topics will be oriented to the war for the most part.

Addresses at the general section Saturday morning will be, "Nutrition in the emergency," by Dr. George O. Burr and "Modern plastics," by Dr. Charles A. Mann, both of the University of Minnesota, "Processing of fats and oils," by Dr. J. Jakobsen of General Mills Research Laboratories, and "Night Vision," by Dr. Charles Sheard of the Mayo Foundation, Rochester.

Minnesota fishes, Itasca Park deer population, a heredity study reported by the Dight Foundation and results of several studies of hybrid maize will be among the topics in the biological section. Weather, stars, scientific equipment and body skin temperatures will be among the physical science topics. Before the section on social science "Our postwar domestic economy" will be described by Dr. Arthur R. Uppgren, vice-president and economist of the Minneapolis Federal Reserve bank and "The future of the British Empire" will be discussed by Professor Herbert Heaton. J. O. Christianson, director of agricultural extension will speak on, "The Roots of Civilization."

Sees Brilliant Aviation Place For Our State

The midwest, especially Minnesota, has a chance to regain many of the economic advantages it held when the twin cities were a principal point of transshipment of goods to the great wheat, cattle and lumber producing regions if aviation is given enough encouragement in the postwar world. Dr. L. M. Gould told a University of Minnesota audience this week.

In a subsequent issue "Minnesota Chats" will present a more detailed account of his fine address.

No place on earth will be more than 40 or 42 hours from Minnesota by airplane, said Dr. Gould, who is chief of the Arctic section, Army Air Forces Arctic, Tropic and Desert Information Center and is stationed at Minnesota. The Twin Cities should take high rank as an air center.

Isolationism will be wholly incompatible with world-wide transportation service by air, and those Americans who still believe we can live to ourselves must learn better if we are to follow the mighty developments of air communication, he declared.

Too many people think of the Arctic as an inhospitable and unlivable place, Dr. Gould said, pointing out that there is no record of such a calamity in the far north as the loss of life here in the Armistice Day blizzard of 1940.

"Every kind of important food fish that is now caught off the New England Coasts and the Grand Bank of Newfoundland is found in abundance in Arctic waters," he went on. "Davis Straits and Baffin Bay have proved to be especially rich fishing grounds for halibut. The Arctic is still the world's chief source for seal skins and seal oil. It has, of course, been of even greater importance for its whale fisheries. It is estimated that not less than one billion dollars worth of whale oil was brought out of the Arctic regions during the twentieth century. The potential meat supply that could be derived from grazing of caribou or reindeer alone, to say nothing of the polar cattle or musk oxen, is almost unbelievable. There would be no meat shortages now if we had listened a few years ago to some of the prophets of the north. It has been conservatively estimated that the Arctic tundra of Canada alone could supply the rest of the continent with 10,000,000 caribou carcasses per year.

"Coal is known on three-fourths of the Canadian islands; it has long been mined in Greenland. Spitzbergen is one of the few places in the world where coal and iron occur together. One of our great oil reserves includes the very northernmost tip of Alaska, and the great oil reserves to be found in the delta of the Mackenzie have long been known."

The lecturer, who was second in command to Byrd in the 1928-'29 Antarctic expedition, said that the mineral resources of Siberia are so vast that it tries human powers of belief to have them enumerated.

Former Student Wins Promotion

Major Albert Whipple Morse, Jr. '39UC, of Minneapolis, has been promoted to lieutenant colonel in recognition of his work with the United States Fifth Army in North Africa. Colonel Morse, a cavalry officer, is the son of Mrs. Edwin Henry Scott, 1706 James Avenue, Minneapolis. He is a graduate of Culver Military Academy, the U. S. Cavalry School, and the Command and General Staff School, Fort Leavenworth, Kansas. While a student on the campus he was on the staff of the Minnesota Daily. He went on active duty on October 26, 1940, at Fort Riley, Kansas, and was with the first troops that landed in North Africa.

Pea Soup Drought Threatens Nation

Next probable victim of war-born shortages: split pea soup, say reports from Spokane, Wash. County agents W. J. Green and Troy Lindley, speaking for a region that produces 80 per cent of the dry edible peas consumed in the nation, said they looked for a 25 per cent reduction in the crop if 200 tractor drivers aren't found immediately.

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New 'U' Year Moved Ahead, Starts in June

Arts College, Institute of Technology Among Those Bidding Freshmen Come

It will be September in June this year at the University of Minnesota with most of the major colleges of the university admitting their freshman classes at the beginning of summer session, directly after the closing of the present college year. Graduation will be June 12, Saturday; summer term registration will begin Monday, the 14th, and last two days, and summer classes will start Wednesday, June 16. The rose and peony rather than the autumn leaf will mark the beginning of college life for the newcomer, just one more change from the traditional academic routine that has been brought about by the stress of war.

The College of Science, Literature and the Arts, the Institute of Technology, including all the engineering departments, the College of Education, Dental School, School of Nursing and School of Business Administration are among the units that will begin the year three months early for some or all students.

With the expected arrival of a considerable number of freshman men for the Navy V-12 program and the probable assignment of Navy engineers for training at Minnesota this program will cause a large increase in the summer enrollment.

Dean Samuel C. Lind of the Institute of Technology asks that it be made clear that freshmen will be admitted to the institute's classes only in June and that there will be no freshman classes in the fall. Students already enrolled also must continue through the summer, as the work will be run in sequence and they could not get back into step if they took a summer vacation.

Certainty of deferment is held out only to members of engineering courses who will get their degrees by June 1945 but, as Dean Lind points out, unless engineering students are in college they have no possibility of technical deferment.

While the School of Business Administration does not admit freshmen as such, it will admit new classes in the special nine months courses training women for places in business, such as accountancy, office management and secretarial work, industrial production (factory supervision) and assistance in industrial and personnel relations. There will also be the usual summer program of business subjects.

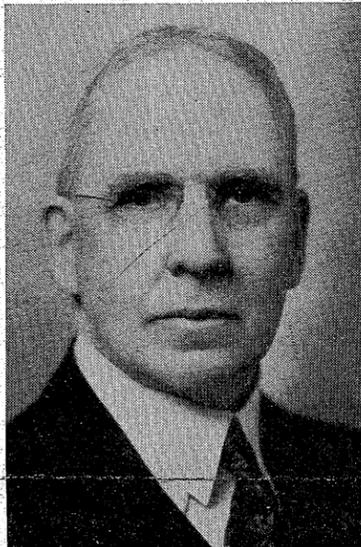
University officials are especially eager to have students who would have entered in September start their programs in June for several reasons, among them the need of speeding up training of many types of workers for war purposes and the fact that the university is now operating on practically a year around basis and is prepared to go ahead with its teaching throughout the summer.

The College of Education stresses the growing teacher shortage as a reason why students should go to college as soon as possible if training as teachers is their goal. The Medical School admitted a class last December and will not admit another until nine months from that time. Dentistry, which is admitting a class of freshmen now, will admit its next entering class nine months from now. Pharmacy will not admit freshmen until fall.

The School of Nursing is not admitting this year's high school graduates until fall, but is taking college graduates for a two and a half year war curriculum, graduate nurses who wish to prepare for nursing administration, teaching and supervision, and postgraduates who wish to take the year's course in the clinical (operating room) procedure. Refresher and nurse aid courses would be offered if enough students applied.

The same full counselling program that would be available in

Five Who Leave Major Posts in 'U' Faculty



Left to right, above, are shown Dr. Richard R. Price, Dean E. M. Freeman, Professor Frederic Bass, F. K. Walter and Dr. P. J. Brekus. Also retiring, and to be referred to later, are Professor A. G. Ruggles, entomologist, and Algernon H. Speer, head of the correspondence study department in the General Extension Division.

Careers of Retiring Faculty Members Exemplify Modern Education's Story

Science, Public Service, Health, Librarianship Served Over Fifty Year Period

The University of Minnesota will lose by retirement this June another group of faculty members who have been here "from the first," at least in the sense of the development of the modern university we know today. Dean Edward M. Freeman has been on the campus most of the time for 49 years since he entered as a freshman in the fall of 1894. Professor Frederic Bass, head of the department of Civil Engineering, came to Minnesota in 1901 with a fresh degree in civil engineering from Massachusetts Institute of Technology; Dr. Richard R. Price came in 1913 from the University of Kansas, where a few years earlier he had established the second General Extension Division in the country, and at the behest of President George Edgar Vincent established the General Extension Division here. Frank K. Walter, librarian, is not, of course, the first University of Minnesota librarian, which post the late Dr. William Watts Folwell held along with the presidency when the university was opened in 1869, but Mr. Walter came in 1921 when the "new" or present library was still on paper and has been librarian throughout the years of the institution's greatest growth, also the lifetime of the present library. Dr. P. J. Brekus has spent a life-

time here in dental teaching and research. Each of these men typifies an era in the educational field to which he has given his life—Freeman, the development of plant pathology and especially the great battle of science against destructive wheat rust; Price, the development of the extension services whereby universities nowadays carry enlightenment to thousands who can not get down from the treadmill of economic life to go to college on a regular basis; Bass, the development and in large part victory of man's efforts for good public and municipal sanitation and water supply, and Walter, most of the development of the public and educational library as known today. During his life as a librarian most of the spread of the Carnegie free public libraries took place and educational libraries increased their scope and services many, many fold. Brekus's work

Dean C. H. Rogers Heads State Group

Dr. Charles H. Rogers, dean of the College of Pharmacy, University of Minnesota, has been elected to the presidency of the Minnesota State Pharmaceutical Society. Professor Charles V. Netz of the same college was re-elected secretary. Announcement has also been made that Dr. Guy Stanton Ford, formerly president of the University of Minnesota, will be a member of a five man board set up by the American Foundation for Pharmaceutical Education to allocate funds for scholarships, research fellowships and support of education in pharmacy. George V. Doerr of Minneapolis, regional vice-president of McKesson & Robbins, heads the Foundation for Pharmaceutical Education.

Regents Vote Longer Term For 'U' Head

Dr. Walter C. Coffey will continue as president of the University of Minnesota for at least two more years, Fred B. Snyder, first vice-president and chairman of the Board of Regents, announced following the board's meeting Friday. The regents voted to extend President Coffey's term to June 30, 1945. Under the age limit regulations of the board he would be retired June 30, 1944, inasmuch as he will reach the age of 68 before that time. The regents feel that it would be unwise to make a change under present conditions. Dr. Coffey became acting-president of the university in July, 1941, and was elected to the presidency early that fall. He formerly had been dean of the university department of agriculture for twenty years.

has made him a recognized leader in dental research.

Edward M. Freeman

Dean Freeman has taught botany or plant pathology in four different colleges of the University of Minnesota and has been dean of the College of Agriculture, Forestry and Home Economics from the time that post was created as such in 1917.

Born in St. Paul, Feb. 12, 1875, he was graduated from St. Paul Central high school and since entering the university in the fall of 1894 has spent his entire active life here except for a year when he studied at Cambridge, England, and two years, 1905-1907, when he was with the Department of Agriculture, Washington, D. C., helping Willett M. Hays, former Minnesota professor, start the battle against wheat rust.

Freeman was immediately attracted to botany, and so fell under the influence of the famous Conway MacMillan, one of the most individualistic and successful of early professors at Minnesota. He recalls MacMillan as an eccentric person who concentrated his efforts almost wholly on his students of high ability and in so doing developed probably at least a score of men who have gone on to distinction in scholarship in botany, plant pathology and related fields.

Botany was not taught on any considerable scale at University Farm in those days, for in fact the School of Agriculture was then dominant over such collegiate work in agriculture as was offered, Dean Freeman said, so he took his work in the Arts College, being graduated in 1898 and going on to a master's degree and, in 1905, a doctorate of philosophy. Meanwhile, after getting his master's degree, he spent the year in England. Before going abroad, he had been teaching botany in the College of Pharmacy, but on his re-

Graduation, Alumni Day, Year End Events

Class of 1918, Twenty-five Years Out to Hold Spotlight

PRINT RAIN TICKETS

Famous Alumnus of '93 Will Deliver Baccalaureate Sermon

With the "twenty-five year class" of 1918 as bell-wether, Minnesota Alumni are planning their usual big festivities for Alumni Day, which will come on Friday, June 11, the day before the June Commencement on the 12th.

Following custom, classes spaced at five year intervals, which will mean this year classes in years ending with "3" and "8," will conduct reunions of one type or another, many of them luncheon gatherings.

Representatives of all classes will join in the annual Alumni Dinner at 6 p. m., which will be served cafeteria style in the Coffman Memorial Union cafeteria, in deference to wartime difficulty of serving large numbers at a regular banquet.

Ralph B. Beal is chairman of the general 1918 class committee.

The Baccalaureate service, in Northrop Memorial Auditorium on the preceding Sunday, June 6, will be preached by a distinguished member of the fifty-year class, the Rev. Albert C. Knudson, '93, who for 37 years was professor of Hebrew and Old Testament Exegesis in Boston University's School of Theology, one of the leading teachers in any American divinity school.

Commencement exercises will follow the established plan and will be conducted at 8 p. m. Saturday, June 12, in Memorial Stadium. Each graduating senior will receive ten regular tickets and also three special tickets for use in case bad weather forces the exercises into Northrop Auditorium, which can accommodate only 5,000 by comparison with the over 20,000 who ordinarily attend graduation ceremonies outdoors in the Stadium. President W. C. Coffey will speak.

Among alumni activities already specifically planned for June 11, and chairmen named are the following: Class of 1888, Albert Graber named chairman; Class of 1893, John W. Powell, chairman of arts group; Sen. John C. Sweet, chairman of law group. Reunions will have dinner at the Sweet home, 1912 Girard Ave. S., Minneapolis, Thursday, June 10, at 7 p. m.; 1898, Perley A. Davis, chairman; 1903, Mrs. H. S. Lambertson, chairman; reunion to be the afternoon of June 11 in Coffman Union; 1908, with Rewey Belle Inglis and Arthur E. Larkin as chairmen, is planning a dinner on Alumni Day; 1913, has appointed William Anderson, chairman of the department of political science, as its chairman.

The annual luncheon for early grads, served by the University of Minnesota Alumnae Club, will be in the Union cafeteria at 12:30 p. m. Annual meeting of the Alumni Advisory committee has been given up on account of wartime travel restrictions.

The big reunion, that of 1918, will start when members gather at 2:30 p. m. in the main lounge. At 3:30 a coffee hour has been planned at the Farm Campus Union for graduates of that college. A tea and get-together for 'eighteeners will come at 4 p. m. in the Fine Arts room of Coffman Union. Nineteen-eighteen also will be in charge of the meeting and entertainment that will follow the General Alumni dinner in the evening.

Address on Patriotism To Appear Next Time

Minnesota Chats intended to run President Coffey's address on history and patriotism in this issue, but the length of the stories about retiring faculty people left no space. The Cap and Gown Day address will appear in the next issue.

(Continued on page 2, column 1)

Retiring Faculty Typify Period In Education

(Continued from page 1, column 4)

turn he was assigned to the College of Science, Literature and the Arts, and taught there during the years when he was completing his doctor's work.

Meanwhile, the year 1904 had seen an exceptionally disastrous epidemic of wheat rust and when Willett M. Hays left University Farm to become an assistant secretary of agriculture, he persuaded Freeman to go with him, the latter serving there two years. But before he left Minnesota Dr. Freeman had introduced in the Arts College the first Minnesota course in plant pathology and had also begun to teach a course called industrial botany.

While he was on an inspection trip in the west for the Department of Agriculture in 1907 Dr. Freeman got a telegram from the governing committee of the College of Agriculture, as it was then known, informing him that the institution had received funds under what was known as the Nelson Act, to provide for more teaching, and asking him to come home and become head of a new department of "vegetable pathology." He accepted. This, he declares, was the first such department on the North American continent, although Wisconsin established one like it the following January. He was thus the pioneer in plant pathology.

Dean Freeman has been involved in so many activities at Minnesota that it is a little difficult, offhand, to keep the chronology of his activities clear, but he tells how, after going to University Farm, he assisted Samuel D. Green, who first headed horticulture and then developed forestry, with publications and the like. Professor Green was a go-getter and he had influence enough to have forestry established as a separate college, which it was, on paper, and one bulletin of that college was issued. One of Green's enterprises was the establishment of the forest station in Itasca Park, and in the summer after forestry had been separated, he went to the park to see how things were coming on, became ill, and died. No one else effectively took up the cudgels for a separate forestry college. Home economics students had been in the College of Agriculture right along and eventually, after Dean A. F. Woods took charge of the Department of Agriculture in 1910, approximately the present organization was worked out, with a College of Agriculture, Agricultural Experiment Station, Agricultural Extension Division, and the Schools of Agriculture.

As has been suggested, when Dr. Freeman returned to Minnesota in 1907 the lines between educational divisions at the Farm were vague. Students in the School of Agriculture and students of college rating were in the same classes. Some of them got credit in both the school and the college for attending the same class. A committee of the top men ran things and there were no faculty meetings. Freeman took these matters up with Woods soon after the latter's arrival and faculty meetings were begun, where more views had a chance to reach the light. Dean Freeman himself drew up the general plan of organization, which has been followed, though of course, with amendments, to this day. He was active on the curriculum and students' work committees, and when in 1917 the college had grown to the point where a separate deanship was desirable, he was appointed to the post, having been assistant dean since 1913. In 1917, also, the modern name, Agriculture, Forestry and Home Economics, was formally given to the college.

During a few months between the departure of Dean Woods, later president of the University of Maryland, and the coming of Dr. M. W. Thatcher to head the department of Agriculture, Dean Freeman was acting dean of the department. Upon Thatcher's appointment, Freeman asked to be permitted to go back to teaching, but Dean Thatcher urged him to continue in an administrative post and Freeman said that if the position were made a deanship, he would accept. That was how the position he has since held came into being. Until two years ago, when he asked to be relieved and sought the appointment to that post of Dr. E. C. Stakman, Dr. Freeman also was head of the de-

partment of plant pathology and botany at University Farm.

Was a "Barn-Burner" of a Dean

"Of course our biggest barn had to burn down during the brief period when I was dean of the department," Ed. Freeman exclaimed. "I guess I was a barn-burner of a dean. We had some distinguished guests on the campus and started out for a tour of the farm. When we got back, the barn, which stood about where the inter-campus trolley line now ends, was a ruin."

When the Department of Vegetable Pathology was created in 1907 its budget consisted of the \$2,400 a year salary of its head and an \$800 annual supply budget, the dean explained.

The Wheat Rust Problem

The early efforts of Willett M. Hays and his associates to gain control of wheat rust failed because scientists had not yet developed enough knowledge of genetics to understand the parasite that causes rust, he said. There are over 100 races of these parasites. It is possible that man may never catch up with this destructive pest, because of the difficulty of breeding resistant strains of wheat that will withstand the attacks of all these races. How many know, for example, that Dr. Stakman goes down into Chihuahua and other parts of northern Mexico each spring to see which races of rust are active? The creatures are so light that high winds blow them into the upper atmosphere and waft them into the wheat fields of the south and central west. Stakman is a scout in this capacity and warns which tribes of these fierce invaders must be guarded against.

Basic to the problem of battling rust is that fact that rust organisms pass their period of sexual activity on the bush known as high bush barberry. This has led to the long-continued efforts to eradicate that shrub, once sold as a decorative plant, which escaped from cultivation into the fields and woods. And it is not only the fact that the parasite breeds on the barberry, but the further fact that many races breed there at the same time, with resultant interbreeding and the development of new and hitherto unknown races, that makes the plant so dangerous. Plant breeders form one flank of the pincers movement, science drives toward the wheat rust problem, with plant pathologists, studying the organism, as the other pincers and the eradicators of barberry as the sappers, who dig up the dangerous "mines" from which decillions of new organisms will presently explode into the picture.

Commenting on the likelihood that a new race of rust organisms will appear and attack each new "resistant" wheat, Dean Freeman instanced the experience of Kansas, where a wheat called Kanred was bred to resist many of the rust tribes. For several years Kanred was a bonanza and Kansas thought it had the problem licked. Others warned the state that it was probably only a matter of time until the race fatal to the new variety would appear—and sure enough it did. The same story may be told of other resistant types. As long ago as the days of Willett Hays botanists brought durum wheats from North Africa and Russia and they proved more rust-resistant than hard spring wheats, but — and here's the trouble—durum wheat is not hard spring wheat, which latter is the finest bread-flour milling wheat in the world. It is the wheat for whose sake principally the battle against rust is being fought.

Maintains "Disease Garden"

At University Farm, incidentally, the department of plant pathology maintains a "pathologicum" or disease garden, where varieties are planted in such a way as to subject them to the most virulent infections of plant diseases. Resistant indeed are the plants that come through a summer in that ground, whether wheat rust, flax wilt or what you will is the danger being studied. Those that survive are worthy of further consideration with respect to resistance.

Another accomplishment of Dean Freeman at Minnesota has been the writing of the first state seed law, requiring labeling of seeds offered for sale and also the rules for seed potato certification. Laboratories in connection with these projects are maintained at University Farm, but the regulatory functions reside in the State Department of Agriculture, not the University of Minnesota.

Dean Freeman, the late David F. Swenson and Lillian Marvin, who became Mrs. Swenson, all were members of the board of the 1898 Gopher. When "Prexy" Northrop called the future dean to his office and said that there

Weaving Class Largely Attended



A course in home weaving conducted by the Center for Continuation Study and the Weavers' Guild brought out evidence of the interest in this field and the skill of its devotees.

must be no deficit (there had been one the year before) Freeman promised, and sure enough, he had his bills paid before those for the Gopher of the preceding year had all been cleaned up. He and his associates also broke up the old system whereby there was a long procession of student speeches at commencement. The older system was the pet of the famous Maria Sanford, but Freeman et al decided they would have none of it. The students just got together and refused to speak.

"I guess commencement that year was an awful flop," he explained, "but the next year the university began the custom of bringing in an outside speaker and the students were saved from being valedictorians and all of that."

But he retained an admiration for Maria Sanford. When she offered a "sunrise" course in newspaper writing, starting at 7:30 a. m. he enrolled and got to the campus from Dayton's Bluff, near St. Paul, in time for that meeting.

Dean Freeman's first scientific writing was the volume, "Minnesota Plant Diseases" published in 1905 by the Minnesota Botanical Survey. It was the first comprehensive survey of the sort published in this country.

Frederic Bass

How an engineer can contribute to the health and wholesome living conditions of a state is well exemplified in the career of Professor Frederic Bass, head of the department of civil engineering, Institute of Technology, who will retire this June after being a member of the Minnesota faculty since the fall of 1901. Most people think of a civil engineer, perhaps, as someone who peers through a transit, laying out railroad lines in the rugged west but, while the civil engineering department certainly does teach that picturesque phase of the work, it does many other things, as Professor Bass's story will reveal.

Chief perhaps, among his many achievements, was the clearing up thirty-five years ago of a bad health situation in Minneapolis arising from a defective water supply, and it was on his initiative, more than on anyone else's, that the modern and pure water supply of the modern city was created.

Bass was born in 1875 in Hyde Park, Mass., now a part of Boston, but then some eight miles southeast of the city. In his boyhood baseball was the principal rage of the youngsters, and they used to save their money until they had twenty-five cents, whereupon they would walk to Boston and attend a ball game. There were teams of the National League and the Brotherhood, the latter a sort of rebel league from which the American League was later formed.

He went to Hyde Park High School and attended Massachusetts Institute of Technology, being graduated in 1901 with a B. S. in Civil Engineering. Meanwhile, however, he had spent about four years working to earn money for college, nearly two of which he spent on ships working for the United States Lighthouse service. Major Livermore of the Army Corps of Engineers was in charge of work they did off the coast of Maine testing the efficacy of various types of sirens during fogs, and endeavoring to set up a means of determining the direction from which siren blasts were coming. He also spent three years in the engineering department of the

Boston Metropolitan Water Works. Came in Fall of 1901

Professor Bass came to Minnesota in the fall of 1901, just after his graduation from college and became an instructor in civil engineering. There was at that time no clear-cut college organization in engineering. The faculties in engineering and in the arts college used to meet jointly in the large room outside President Northrop's office, the same room that was used for meetings of the Board of Regents. When young Mr. Bass reached the campus that part of the old Mechanical Engineering building that lies next the present Administration building was up, but they were still working on the section that lies next to Pillsbury Hall, and which for many years housed the department of electrical engineering. Also the old Physics building, now called Jones Hall, was just being completed or just had been finished. Bass had been on the campus about two years when Professor Fred S. Jones, head of the department of physics, was made dean of engineering, a position he held until he went to New Haven in 1909 to become dean of Yale University.

Professor Bass found his first big opportunity for public service when a serious epidemic of typhoid fever broke out in the city in 1904. At that time part of the city water supply was pumped into the mains at a station on Hennepin Island, where the University's Hydraulic Laboratory now stands. In fact, the water power given to the university by the city for experimental use in that laboratory was the same power used in those early days to operate the pumping station.

The epidemic was especially bad on the East side and in the university neighborhood, which was served by the Hennepin Island intake. Professor Bass visited Nicollet Island, upriver from the intake, and found that on it there were 36 sewer outlets into the river. He also found that the disease was especially prevalent along the big east side mains, showing that water was probably the source. With the backing of prominent citizens he went before the water committee of the city council and after stormy sessions got the intake closed. The water engineer protested, saying that the only other main to the East side ran across the Hennepin Avenue bridge and could not carry enough water to be effective in case of fire, but the better judgment prevailed and the offending main was closed. President Northrop of the university was among those who accompanied Bass to the council committee meeting, as was Dr. Bracken, for long chief physician of the state board of health.

It required, however, another outbreak of disease in the city to bring modern methods of water purification into existence. The city knew it had to fix up its water supply and had been searching in various places for a new supply. Professor Bass was engaged to canvass the possibilities of bringing down a main from Mille Lacs, but after a careful study reported against the idea. The water would be all right, he said, but even so big a lake as Mille Lacs could not supply Minneapolis with water. The inflow, he stated was less than the drain a Minneapolis water demand would place on the lake. This proposal has not been renewed since that report was made, in 1909.

The new outbreak came in 1909-

'U' Receives Subsidies for N. W. Writers

The Board of Regents at its May meeting accepted a grant of \$50,000 from the Rockefeller Foundation for the promotion of creative literary work in connection with the study of Minnesota and the Northwest, its history and present day life, its culture, its people and its problems. The grant is for a three-year period and will be employed by the university particularly to aid writers of books or shorter studies, histories, biographies which will offer interpretations of regional life past and present.

An Advisory University Committee will aid Dean Theodore C. Blegen of the Graduate School in passing upon applications for grants and in determining upon projects to be subsidized by the University under this grant.

"I see very rich possibilities in this gift for studies of many kinds that will add to our understanding of the Northwest region," Dean Blegen said. "The problem is to find the perfect combination of writer and subject and to make it possible for given projects to be carried through to completion. I have in mind sound and substantial studies of regional life so presented that the results can be brought before non-specialist readers both within and without the Northwest region."

"The University of Minnesota Press has already made large contributions to the interpretation of this region in many books and we have an excellent foundation to build upon. I know, however, that there are many excellent projects that have failed to materialize because authors have been prevented by financial difficulties from devoting the necessary time to their proposed research and writing. It is my hope that under this grant, with careful investigation of all projects by a faculty committee, we shall be able to offer a very effective stimulus to creative achievement in the Northwest field. I have in mind not only Minnesota but also neighboring states."

Secretary of the committee will be Miss Helen B. Clapesattle, editor of the University Press, to whom inquiries on projects and grants should be addressed.

1910 as Bass recalls it. On his recommendation the city had employed Rudolph Herring of New York, the nation's outstanding water supply engineer, to work out a plan for a satisfactory water system. It was decided to construct the water works on the Mississippi river above the city which still serve, and Professor Bass drew preliminary plans, from which the detailed plans were made up by Mr. Herring's firm, in 1910, and the establishment at Fridley was built. When the plans were finished Bass and Herring went to Europe and spent the summer together.

The question now was, how to purify the water. Different parties at interest proposed different methods, but Dr. F. F. Wesbrook, for whom Wesbrook Hall is named, told Professor Bass about experiments in New Jersey in which rather simple equipment for pouring hypochlorite of lime into the water had been successful. Wesbrook and Dr. Harold Whitaker, now an outstanding sanitary expert of the State Board of Health but then a young chemist for that organization, performed tests which confirmed the value of the method and it was decided that they must persuade the city to put in a hypochlorite plant. Art Jensen, then a draftsman, but who recently retired from the post of superintendent of the Minneapolis water works, drew the plans and Professor Bass, after convincing the water engineer that it was the right thing to do, took off his coat and constructed the unit in a week. No sooner did it go into operation than the typhoid epidemic ended.

"There may have been other reasons, too," he said, "but these are the facts."

One of his most exciting experiences had to do with a smaller city in Minnesota which will go unnamed, in which there was a serious typhoid outbreak in 1908. A big reservoir in the town had an outlet into the sewer in case of run-over, but a big cloudburst came along and the arrangement worked in reverse. Water from the sewer got into the water works. The epidemic was severe and deaths were many. Naturally there were meetings of officials and citizens, in which indignation ran high, and at one of these, Bass

(Continued on page 3, column 1)

(Continued from page 2, column 5) declares, a group of armed men with ropes came into the room swearing they were going to hang the city engineer. The man was smuggled out a back door and put aboard a train.

There is always a natural tendency in communities to cover up dangerous epidemics and Professor Bass says he learned about this one when on a picnic at Lake Minnetonka. He was reading the Sunday paper and saw a tiny one-paragraph story about it. He at once got in touch with the state board of health authorities and the investigation followed. There had been a circus in the town, creating ideal conditions for spread of the disease, through people from other towns who had come for the show and also through the circus employees. It was a good chance for a scientific follow-up job and the inquiries revealed that the infection in this medium-sized Minnesota city spread in some degree all over the nation.

Water Commission Member

Professor Bass was a member of the Minneapolis special water commission which a few years ago reported against the artesian well as a source of city water and recommended strengthening of the mains into southwest Minneapolis, where the pressure became dangerously low during the drouth years. He was engineer and director of the engineering division of the State Board of Health from 1907 to 1915, has been a member of that board since 1931, and from 1936 to 1939 was its president.

Some 40 municipal sewage reduction plants or water systems have been installed under his direction, many of them in Minnesota, including such cities as Rochester and Austin, and others outside the state. Professor Bass was also active in the program that led to the Minneapolis-St. Paul Sanitary system in which the big sewer was run under St. Paul to a reduction plant below the city. Interceptor sewers carry Minneapolis sewage into the main sewer. This project was blocked at first by South St. Paul for which assessment on the basis of sewage volume was very high because of the waste contributed by packing plants. Finally, on Bass' recommendation, South St. Paul was left out of the program upon its promise to build its own sewage reduction plant, which plan was carried out.

Within the university, apart from his teaching and department headship, Professor Bass has been active on committees and was for a number of years chairman of the committee on education of the University Senate. In that position he directed a comprehensive report based on a study of the freshman year at the university, the work done on that report leading to the creation of the present committee on educational research, which, under chairmanships of the late Dean Melvin E. Haggerty and now of Dean T. R. McConnell, has attracted national attention.

A philosopher about education and life, Professor Bass is a man who gives interested and careful thought to many phases of the passing show. But he would not indulge in much philosophy as he talked. What he had to say he compressed into the following sentence:

"In the post-war world there should be an emphasis on the education, as distinguished from the training, of engineers."

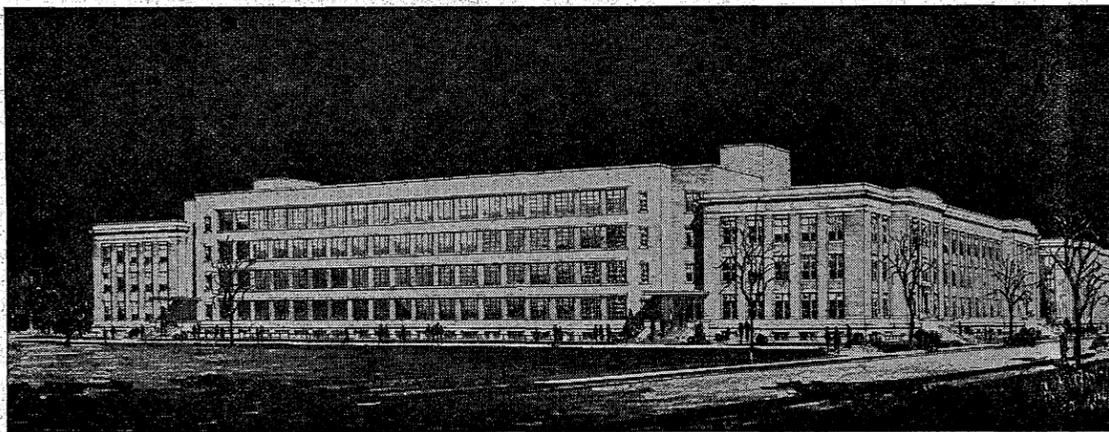
Frank K. Walter

Frank K. Walter, retiring University of Minnesota librarian, who has served in that capacity since the summer of 1921, entered college with the idea of becoming a professor of English. Born in Point Pleasant, Pa., in 1874, Mr. Walter was graduated from Haverford College in 1899 and took a master of arts degree there in 1900.

He recalls with considerable pride the professors he had at Haverford, such men as Frank Morley (father of Christopher Morley), Ernest William Brown, later prominent at Yale, Wilford O. Mustard, who became head of the department of Latin at Johns Hopkins, Francis B. Gummere, the outstanding English scholar, and Rufus M. Jones, a celebrated Quaker preacher. Jones is reported to have been called by "the gloomy" Dean Inge "one of the things he wanted to see when he came to America."

When his finances ran out before he could take his Ph.D. degree Mr. Walter spent six years teaching school, ranging from an upgraded country school to private schools, one of which was in Washington, D. C. He was at one time principal of the Unionville, Pa., high school where Maria Sanford

Funds Voted for Mechanical-Aeronautical Building



One of the long-time dreams of the Institute of Technology and its alumni came true in the closing days of the 1943 Legislature when it voted \$1,175,000 for construction of a new Mechanical-Aeronautical Engineering building. It was provided that construction may start only after the ending of hostilities in the present war. The picture above represents an architect's drawing, not necessarily final, of the building done by the firm of Clarence H. Johnston, St. Paul, university architects.

Wartime revelation of the vast importance of the machine tool industry and of aeronautical engineering contributed in considerable part to the conviction of the Legislature that such a building should be constructed. Neither department at present has facilities that could honestly be described as decent, while at the same time, over the past ten years, they have been the most rapidly expanding engineering departments.

Under the enthusiastic promotion of the Institute of Technology Alumni association, headed by Harry E. Gerrish of Minneapolis, many clubs and organizations, both in engineering and other fields, have gone on record as favoring erection of the new building. Active in working for the project, also, were Russell Backstrom and Donald Heng of the alumni committee; Dean Samuel C. Lind of the Institute of Technology, Professor Frank B. Rowley, head of mechanical engineering, and Professor John D. Akerman, head of the department of aeronautical engineering.

once taught and which Bayard Taylor had attended.

His idea of taking a Ph.D. in English having been dropped, Mr. Walter began to develop an interest in librarianship. He had been a student assistant in the library while at Haverford, and when he found himself teaching in Washington, D. C., he took night classes under William P. Cutter, head of the order department in the Library of Congress, so it was natural that in the fall of 1904 he should enter the New York State Library School at Albany, from which he received the degree, bachelor of library science, in 1906. This is the oldest true library school in the world, having been founded in 1887 at Columbia University, to which it was returned in 1926.

During a nine months leave from duties at the Albany school, Mr. Walter went with Mr. Cutter to the Forbes Library in Northampton, Mass., as special assistant, editing the Cutter Expansive Classification, famous in the library world.

Goes Back to Albany

Mr. Walter presently went to the Brooklyn Public Library for a year as a reference assistant, then returned to Albany as assistant to the director of the New York State Library, Edwin H. Anderson. It was in the fall of 1908, when he was made vice-director of the New York State Library School, that the future Minnesota librarian got into teaching, although he had done a little of it during his year at Brooklyn. In this position at Albany he remained until 1919.

All was not as peaceful as one might assume of so relatively quiet a situation as a large library, for in 1912 the New York State Library was destroyed by fire. In the school end, everything was lost but a set of examination papers recently written by the students. But these were not graded. The students were "excused." And the only day missed from classes was the actual day of the fire. Next day the school started over, from nothing, in the parish house of an Episcopal church.

Expansion of the library idea was going ahead very rapidly in those years. It was the period dur-

ing which Carnegie was building 1900 library buildings in the United States and Canada at a cost of \$56,336,430 and, said Mr. Walter, ninety-seven cents. Libraries associated with educational institutions also were growing rapidly and there was a tremendous increase in library training. A great many people became interested in librarianship through serving during the world war in the volunteer service of the American Library Association, which had nearly 1,000,000 volumes in its libraries for soldiers. Incidental to his duties at Albany Mr. Walter supervised the library station at the Watervliet (N. Y.) arsenal, a supply camp at Schenectady and the SATC at Albany Teachers College. At Watervliet he became friendly with Colonel Benet, father of Stephen and William Rose Benet, who were then still youths.

A venture into industrial librarianship took him to General Motors in Detroit in 1919 to organize an information and reference service, but the depression that set in in 1920 resulted in a big contraction of such special activities in industry and his department was closed down. Between then and the time of his coming to Minnesota in 1921 Mr. Walter taught in library science courses at the University of Illinois and the University of Michigan.

Minnesota's present library was still in the plan stage in 1921 and Mr. Walter had been shown the plans in Chicago before he ever thought of coming to Minneapolis. The plans were originally made by James T. Gerould, Mr. Walter's predecessor, with the aid of Professor James Forsyth, then university advisory architect. After he came to Minnesota Mr. Walter and Miss Ina Firkins, reference librarian for many years, made some modifications of the plans.

"I wanted more elevators," he explained, "but the architects wouldn't give them to me."

Forms Library Instruction Course

It was natural that a man with so long a teaching experience should be eager to form a school of library science, and in 1922 he and Miss Firkins organized a department of library methods. Summer courses also were offered. By 1928 enough progress had been made so that the Division of Library Instruction was created. Two thousand students from 40 states and countries have taken this work at Minnesota and between 800 and 900 persons have been graduated from the course.

Today the University of Minnesota Library has about 1,250,000 recorded volumes as against something between 310,000 and 330,000 when Mr. Walter came to the campus. During one period just after the world war some very fine acquisitions were obtained from Europe very cheaply, when Minnesota did as did other American libraries, and took advantage of the inflationary period abroad to purchase bargains with much sought after American gold exchange.

"We also got a great deal of good from our WPA assistants during the considerable period when they were helping us in the library," Mr. Walter explained. "They provided help in cataloguing thousands of gift and exchange volumes which we should never have managed to record otherwise."

Mr. Walter makes a point of the fact that at Minnesota books are bought for use, not as keepsakes. Even the rare books which the library possesses were obtained because of an existing use for them in campus scholarship.

In 1932 Mr. Walter visited England, Holland, France and Belgium, and again in 1936, England, the Scandinavian countries and France, both trips at his own expense, not only for the sake of

travel but to familiarize himself with the library materials available in the hands of booksellers. One result of these trips was the acquisition of an unusually complete collection of official documents. Minnesota also has one of the very finest collections of Scandinavian materials of scholarship. Supplemented by the collection of the Minnesota Historical Society in St. Paul, it makes this a major center for research requiring such materials.

In the collections of official documents in the library are thousands of volumes from countries now occupied by the Nazis, much of this material now irreplaceable because of the destruction attendant upon invasion.

Mr. Walter has been very active in the American Library Association and a member of many of its committees. He has been president of the Minnesota State Library association. He has been author of such books as "Bibliography, Enumerative and Historical" with Henry B. Van Hoesen; "Abbreviations and Technical Terms"; "The Library's Own Printing," "Periodicals for Small and Medium Sized Libraries," and many articles.

Richard R. Price

Dr. Richard Rees Price, organizer of the University of Minnesota's big General Extension Division and its director since 1913, when he was brought here by the late President George Edgar Vincent, is a Kansan who was born in Wales. He says that historically the name is Ap-Rhys, "Ap" in Welsh meaning "son of" just as do the pre-fixes "fitz" and "mac," in other tongues. Dr. Price, (Ap-Rhys that is) was born at Hafod which is in the famous Rhondda Valley coal mining district.

He was six when his father's drygoods store (drapery, that is) burned out and the elder Price came to America and took employment with a near relative who had a very considerable railroad contracting business out in the southwest, and after living for a while in Beacon, Iowa, the family settled down in Hutchinson, Kansas, while his father helped the uncle and contractor, John R. Price, construct the Kingsley branch of the Santa Fe railroad.

After finishing the Hutchinson, Kan., high school, young Price found it the natural thing to go on to the University of Kansas at Lawrence from which he graduated in 1897; and, while he was perfectly satisfied with Kansas he had a yearning for further education so he went to Harvard for two years and got another B. A. degree in 1900, followed in 1901 by a master of arts degree in classical philology, his major adviser being Goodwin of Greek Grammar fame. Many things were to happen before he again returned to Harvard and obtained his doctor of philosophy degree in 1923, not in classical philology, but in educational administration. And that, he declares, was just as well, for educational administration had long since become his field and he might as well know it from the theoretical side as well as from the practical.

Dr. Price got weaned away from the teaching of Latin and Greek, but never regretted having made them the basis of his formal education and there were occasions in his later life, he believes, when the fact that he had a classical education helped tip the scales in his favor.

Superintendent at Hutchinson

He became a superintendent of schools and served in that capacity from 1902 until 1909, much of the time in his home town of Hutchinson, and in the latter year he was asked to organize an extension division at the university in Lawrence. He was much pleased with this idea, one reason being that it was a form of pioneering, the only other such division in existence be-

Go to Study Navy V-12 Plan

Three members of the University of Minnesota staff recently visited New York for a conference at which colleges were familiarized with the new Navy College Training Program that is to start in July. The conference was called by Rear Admiral Randall Jacobs, chief of the Bureau of Naval Personnel. Dean Malcolm M. Willey, armed services representative of the university, Lt. Comm. J. A. Flynn, professor of naval science and tactics, and Laurence R. Lunden, assistant comptroller, were sent. Details of the further naval training program to be instituted at Minnesota July 1 probably will be available when they return.

ing that at the University of Wisconsin, which had been created two years before by its well-known director, Louis Reber. One of his first steps at Kansas U. was to create a League of Kansas Municipalities, similar to the League of Minnesota Municipalities that has worked so successfully in this state, and the young man he got to organize the Kansas League was named C. A. Dykstra. Dykstra is now president of the University of Wisconsin.

Dr. Price thinks the Chautauqua background of the late President Vincent prejudiced him in favor of the extension division idea, inasmuch as each is a venture into providing education for those who probably have missed a formal education. Anyway, Dr. Vincent (whose father, Bishop Vincent, established the famous Chautauquas) asked Price to come to Minneapolis to be considered for the directorship. He had Price spend three days in his home and talked with him and, no doubt, observed him. The results must have been favorable, for Dr. Price "got it." One month after he came he was setting up a League of Minnesota Municipalities, which organization has drawn some splendid men to the campus to be its secretary, such as Morris B. Lambie, now at Harvard, and the incumbent, C. C. Ludwig.

An extension division, of course, is an organization to carry education to the people. Here at Minnesota its largest phase is that of offering evening classes, but it also teaches by correspondence, maintains a community service department, with lecture and lyceum aspects, conducts special schools for firemen, policemen and the like; holds short courses for dentists and, away from the campus, short courses for physicians, the latter function, as far as the campus is concerned, having been taken over by the Center for Continuation Study. It also teaches the only special course for undertakers in existence. In years past the division's short courses for retail merchants, for women voters and the like, did great good. Through the late Irving Jones, whom Dr. Price brought to the campus, the Minnesota State Music Contest, now called festival, was organized and grew so that for two or three days each spring it used to practically over-run the place with musicians. This has since been divided into districts, so that only some of the "kids" come to the Minnesota campus.

Incidentally, the correspondence division today has its biggest enrollment, partly because the Army Institute uses many of its courses, which are being taken by soldiers in many camps. At its peak the General Extension Division has had in evening courses in a year about 9,000 individual students, who signed up for nearly 14,000 subjects.

Another venture of the Extension Division which ultimately was abandoned was its University Week, a Chautauqua-like arrangement under which a traveling group of faculty lecturers together with some entertainers visited about a dozen towns each year. Some development in rural life, probably the greater ease with which the rural resident could reach the city after the automobile became a commonplace, ended the usefulness of this project.

Invited to Arizona

When Dr. Price took a year's leave of absence in 1921 to go to Harvard and complete the work on his Ph.D., the venture had an unexpected outcome. Out of a clear sky soon after his return, he was informed that a group of three regents from the University of Arizona wanted to see him in Chicago, and when he got there they offered him the presidency of that institution. Now anyone who has spent many years around a university knows that everyone who is really eligible would love to be a university president, so to Price this temptation was very strong. On

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(Continued from page 3, column 5)
the other hand, he liked the work he was doing at Minnesota and—furthermore—there was one very real obstacle in the way. He had completed all of the work for his much desired Ph.D. degree except writing the thesis, and he felt within himself that if he went into a new and strenuous job he probably never would complete the thesis—never receive the degree. This decided him. He remained at Minnesota. He has not been sorry.

"If some good fairy had appeared and offered me the life I might choose, I could have done no better than to do what I have here at Minnesota," said Dr. Price, which, by the way, is what Dean E. M. Freeman, named earlier in this series, also said in practically the same words. "I have had reasonable security, have been associated with men of vision, and have done what I prefer, namely teach and help raise the cultural and educational standard of the people."

Foresees Postwar Rush

Dr. Price is one of those who believes with all his heart that the rush for higher education after the war will dwarf anything of that nature ever before seen, something that will make the college enrollments after the first world war, startling at the time, seem almost insignificant.

"Then we had two or three million soldiers; this time we shall have ten or eleven million," he said, "and human nature hasn't changed. You can figure it out for yourself. I certainly—and most heartily—second President Coffey's statement that the universities had better retain and maintain their staffs and prepare themselves in every reasonable and possible way for the flood of students that will descend upon them when the war is over."

Topping his career, in a sense, Dr. Price only last week received notice from the University of Kansas that he has been given the citation for distinguished service of the Alumni Association of his alma mater. This roll of honored alumni and alumnae was started by Kansas U. in 1941 on the occasion of its seventy-fifth anniversary.

"The citing of alumni for distinguished service in their respective fields of endeavor," said the announcement, "has been a gratifying means of showing the appreciation of the university for the leadership of its graduates in the world."

Peter J. Brekhus

Another aspect of the University of Minnesota's divergent contacts with life and science is revealed by the retirement this June of Professor Peter J. Brekhus of the School of Dentistry, a modest person despite the fact that he was the first winner of the William J. Gies prize for research awarded by the American College of Dentists, its top honor.

Dr. Brekhus' studies have had to do with many aspects of the teeth, but particularly with the causes of tooth decay, or, to dentists, "dental caries."

His book of two years ago, "Your Teeth, Their Past, Present, and Probable Future" attracted widespread attention.

Dr. Brekhus, a small, white-haired man with a bright twinkle in his China-blue eyes, was born in Norway and came to the United States at the age of 21. He had had only one year of the high school course in his home country. Reaching Minneapolis in 1896 he entered Augsburg Seminary, supporting himself by summer work, and took the academic degree in 1902. Intent on further education, he decided it would be better to give his full time to earning the money he needed rather than studying part time and working part time, a policy now approved by many of those best informed on education. He taught several years, then went to the University of Minnesota and was graduated in dentistry in 1910. He has been connected with the School of Dentistry since that time and has long held professional rank. He is chairman of the department of oral diagnosis, does some teaching, but

puts in his main efforts on researches on the teeth.

"Destruction of human teeth is the most prevalent disease in the world today, worse than any other known destruction of human tissues," Dr. Brekhus asserts. "This is not merely a matter of cleanliness and diet. If we contend that man gets too few minerals in his food, too little calcium, say, how does it happen that the rest of his body is so well nourished? Why do his other bones not suffer from calcium deficiency? The fact is that they don't, and that this matter of calcium deficiency is far over-rated."

Neither is it just a matter of eating soft foods instead of raw or unprepared foods, although this is important. Dr. Brekhus holds with Darwin, who first pointed out that an animal's teeth are not merely to eat with, but also to fight with. Long before he began restricting himself to cooked and specially prepared foods, man had stopped fighting with his teeth, and tooth deterioration had set in. In the animal kingdom teeth are differentiated according to the needs of the possessor, and animals have almost no tooth trouble.

On the other hand, there are well established instances among non-humans where animals that changed their food habits lost their teeth, although vestigial remains show clearly that they had teeth at one time. One example of this is the ant-eater; another, the duck-billed platypus of Australia, famed creature of childhood books and cross-word puzzles. But of course the duck-billed platypus is queer in many ways, what with having fur, laying eggs, and being able to sting like a snake.

Sub-human anthropoids have more and, of course, better teeth than man, and the pre-anthropoids, such as the fossilized lemurs found in South Dakota, had more teeth than anthropoid apes have. They had two laterals, three or four bicuspids, or pre-molars and more molars than their descendants have today.

Man originally had a splendid and effective set of teeth, but deterioration has gradually followed the artificial preparation of food and the taking away of the natural function of the teeth. Not only have teeth deteriorated, but Dr. Brekhus' researches show that the process is progressive and that man's jaws are growing smaller and his tooth loss from pyorrhea, dental caries and mal-occlusion are steadily increasing.

Women Needed In Technology

The vital need for women in technical fields was stressed by Melba Phillips, one of the few women physicists in the country, at a Women's forum at the University of Minnesota where she is a professor of physics.

"There is definitely a shortage of men and women in both the academic and research branches of technical fields—particularly in physics," she said.

"The manpower has been drained from these fields into the armed forces. The womanpower never existed. During the depression few women entered technical work because it was thought of as men's work. The few women who did prepare themselves were discriminated against," Miss Phillips explained.

"Now with the outbreak of the war, women technicians are badly needed and it is up to the educational institutions of the country to supply them."

She pointed out that women with only one academic year of physics can qualify in Civil Service and that women with two academic years of physics are needed in civilian radio and communications work, work for the signal corps, WAACS, WAVES and SPARS.

Then too there are positions open in industry, in meteorology and civil aviation and in education. Women to teach pre-induc-

Schmitz Named Successor to E. M. Freeman



Dr. Henry Schmitz

Dr. Henry Schmitz, professor and chief of the division of forestry, College of Agriculture, Forestry and Home Economics since 1925, has been elected dean of that college in the University of Minnesota to take office July 1 upon the retirement of Dean Edward M. Freeman. Dean Freeman has reached the retirement age.

A graduate of the University of Washington with a Ph.D. degree from Washington University, St. Louis, Dr. Schmitz is nationally known not only for his grasp of the practical and scientific aspects of forestry but as a sound research scholar in plant physiology and pathology.

He has been active in committees at University Farm having to do with student life as well as with education and is widely known in Minnesota, particularly in areas where forestry is of importance or where forest industries are situated.

The new dean is this year president of the Society of American Foresters, of whose journal he has been editor in chief for many years. He is also active in the American Wood Preservation Association, in which field he is an authority, frequently called upon as a specialist in that science.

During recent years Dr. Schmitz is understood to have received some outstandingly attractive offers to go to forestry schools elsewhere, but has remained loyal to Minnesota.

In recommending the appointment to President Coffey, Dr. C. H. Bailey, dean of the department of agriculture of which the college is a part, said Dr. Schmitz "has been effective in maintaining the high standards of scholarship in the field of forestry education for which the University of Minnesota has been distinguished, and in sustaining the high rank of this institution among the schools of forestry in this country."

tion technical courses in high schools are particularly in demand.

"Research aides who can keep notes and log books, do chores around a laboratory and assist research workers are almost unobtainable," Miss Phillips said. "Secretarial and clerical workers with background of scientific knowledge are also needed."

"So far the response of Minnesota coeds to the call for technicians has been very small," Miss Phillips added.

In conclusion, Miss Phillips said that there are several good things coming out of this war. Women will find a place in scientific, technical work, more people will have a better knowledge and understanding of scientific fields and an over-all planning of research work will be established.

What Do You Think of That?

It was an undine, one of the fabled water spirits who might receive human souls by marrying mortals, and who lived in the Armapherin brook, as the West branch of the Sprain was called by the Indians, who warned the American commander Colonel Sheldon during the Revolution, that "the British were coming," and so saved his command.

Miss McDowell Honored

Miss Dimmes Anne McDowell, daughter of Professor and Mrs. Tremaine McDowell, has been awarded a fellowship for graduate study by Radcliffe College. She has taken two degrees at the University of Minnesota: B.A. magna cum laude, 1941; and B.S. in Education, 1942.

'U' Mothers Day War Casualty

Mothers Day, traditional University of Minnesota festivity of the spring season, was a war casualty this year. Most of the food service facilities of Coffman Memorial Union, where the Mothers Day dinner has been served, is now used for feeding soldiers. Furthermore, said President W. C. Coffey, the transportation system would make it difficult for mothers to come from any distance and there is no wish to make the event a wholly twin city affair.

Instead of the "day" the president sent a personal greeting to the mothers of all students enrolled in the university.

Cap and Gown Day, when seniors first don the insignia of their rank, the gown and cap of the medaevial university, was retained, falling on Thursday, May 13. At that time elections to honor societies and award of prizes and scholarships were announced at exercises in Northrop Auditorium.

"On Your Own" New Press Book

"On Your Own: How to Take Care of Yourself in Wild Country" is the title of a new manual for outdoor and service men to be published by the University of Minnesota Press in June. Intended for use by campers, fishermen, hunters, and foresters, as well as for members of the armed forces serving at home or in foreign territory, the manual gives all the "do's" and "don't's" for living comfortably in strange country, and just in case—gives the remedies.

It covers temperature hazards, water and ice problems, use of dried foods, how to find plants and capture animals for food, and clearly distinguishes between useful, harmless, and harmful or poisonous animals, insects, and plant growths natural to all parts of the world.

Fifty line drawings including funnel-type fish trap, unbaited snare, deadfalls, poison ivy, sting ray, scorpion, rattlesnake, yellow fever mosquito, malaria mosquito, chigger, assassin bug, and screw worm fly.

New Meteorology Group Assigned

A new course in the Army Specialized Training Program will be begun at the University of Minnesota this month, when a contingent will arrive to enter a Pre-Meteorology "B" program. This is a program more advanced than the "C" type Pre-Meteorology program now being taught at Minnesota. Successful graduates of the "B" program will go into an advanced meteorology course at certain other universities, leading to a commission.

Although the course will not be begun until May 31 the students have begun to arrive and the intervening time will be spent in military instruction, orientation and refresher work.

Men in the new unit will be housed and fed at Pioneer Hall and will be under the immediate command of Lieutenant Lewis C. Rolantz.

Phi Beta Kappa Elects Forty-five

Election of 45 students to the University of Minnesota chapter of Phi Beta Kappa was announced at Cap and Gown Day exercises yesterday in addition to other honors awarded at exercises in Northrop Memorial Auditorium. Those elected were: Jean Marie Anderson, William J. Bailey, Barbara Bernstein, Edwin Brackney, Rosemary Campbell, Ruth L. Cole, Richard Cyert, Clarice Fagen, Samuel Feinberg, Shirley Garlock, Lavon Juliet Gerdes, William H. Gilbert, Suzanne Grant, Raymond R. Halverson, Glenn G. Hanson, Elizabeth Hobbs, Janet Holske, Ellen Horwitz, Donald T. Jarvis, Betty Lou Joseph, Leonard J. Keyes, Robert I. Levorsen, Ruth B. Lind, Bernard W. Lindgren, Sheldon Mandel, Miles W. McNally, Margaret McQuary, Mildred Nolte, Kathleen A. Payne, Marjorie Pomeroy, Christian Rondestvedt, Brice Rustad, Warren E. Schoon, Stuart R. Schrem, Esther Shuler, Jean Stewart, Cora E. Swiggum, Robert V. Tarbox, Irving Tillotson, Sandra Ueland, Roald Wangeness, Elizabeth Warburton, Edward W. Weidner, Howard A. Wilcox, Harriet Youssi.

Jobs for Women In Accountancy

Women with training in accountancy are in such demand that he could have filled 100 positions in a recent week if he had known of persons available, Dean Russell A. Stevenson of the School of Business Administration, University of Minnesota, declares. He announced that the school will continue the special nine months short courses in accounting that it has been starting at the beginning of each quarter, the next course to start with registration June 14, the opening of summer sessions.

In response to his hundred inquiries he had but six persons to recommend for jobs, Dean Stevenson said.

Three other of the special, brief training courses for women in business will be started at the same time. One is in office management and secretarial work, for which the demand is several times as great as the number being trained; one is in factory supervisory work (industrial production) and one is to train women as principal assistants in industrial and personnel relations.

The War Manpower Commission is swinging toward a decision to classify accounting as a cause for deferment, he said.

Regular classes in the School of Business Administration will be continued throughout the summer, Dean Stevenson said, after elimination of some of the less essential subjects. Because of the large numbers who kept on in college through last summer he expects an unusually large graduating class in June.

Many in ROTC Get Merit Bars

Merit bars have been presented to 61 first and second year basic students in the University of Minnesota's basic course, Army ROTC, by the Pershing rifles, organization of crack drill students.

Recipients are the following:

Coast Artillery Corps, first year basic: Truman B. Anderson, John G. Benjamin, Roland L. Blake, John B. Brainard, Harry S. Brenner, James C. Brown, Donald R. Bundlie, Patrick H. Carey, Jr., Walter Schenck Carpenter, Robert A. Christie, David A. De Wahl, John M. Duntley, Robert A. Dworsky, Robert B. Gangnath, Stanley T. Ginsberg, Joseph C. Gonnella, Richard F. Hadley, Charles Gladstone Heisig, Harry Hendrickson, Jack M. Joss, William Jubina, John W. Kreitz, Zenith S. Kremen, Walter S. Lewis, Keith M. Lysen, Philip M. Margolis, Kenneth E. Monson, Donald M. Neal, Robert F. Pomeroy, Howard C. Rodean, Alfred E. Ross, Dennis J. Sakols, Bert B. Schwartz, Gordon C. Seeler, Ray Ellsworth Stiles, Edward W. Tunstall.

Coast Artillery Corps, second year basic: Charles K. Berg, Oliver D. Billing, Robert E. Bowen, Robert R. Cooper, Lawrence W. Edelman, Roger N. Findahl, James E. Forcica, Raymond B. Garcia, George H. Gould, Curtis S. Hubbard, Burnett G. Jancher, Robert A. Johnson, Paul E. Kath, Hoffman R. Lynn, Warren E. Maul, Ralph H. Peterson, George L. Pratt, Herman E. Seibert, Warren C. Steiner, Richard E. White.

Signal Corps—second year basic: Stanley R. Brown, Paul J. Hoffman, Robert V. Mattern, James F. Schouweiler, Burton W. Field.

The awards may be obtained by calling for them at the office of the Military Department.

Marget Advocates Strong Tax Policy

Dr. Arthur W. Marget, professor of economics in the School of Business Administration, is one of 89 American economists who have signed a letter presented to the Senate by Sen. Harold H. Burton of Ohio, urging heavy and adequate wartime taxation as a tool against inflation.

"Failure to levy adequate taxation cannot conjure goods out of empty air to relieve shortages," the letter says at one point. "Far from enabling Americans to be better fed, housed, warmed and clothed, leaving excess spending power free to break down our defenses against inflation will reduce civilian supplies by encouraging hoarding of commodities, stimulating wasteful consumption and bringing about a running battle over wage rates and farm prices which is bound to hinder production."

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Love of Country Needs History As Foundation

President's Cap and Gown Day Address Built on Times' Survey Results

DEPLORES FINDINGS

Sacrifice and Leadership Both Need Basic Understanding of the Past

Need for having citizenship and love of country soundly based in a knowledge of country and of its historical development was stressed by President Walter C. Coffey in his Cap and Gown Day address at the University of Minnesota on May 13. He drew his lesson from the surveys conducted during the past year by The New York Times, which showed that high school graduates and college students in the United States are sadly deficient in knowledge of their country's history.

In Cap & Gown Day ceremonies preceding the address seniors marched in cap and gown for the first time and names of those who had won honors or prizes or had been elected to honor societies were announced.

President Coffey said in his address:

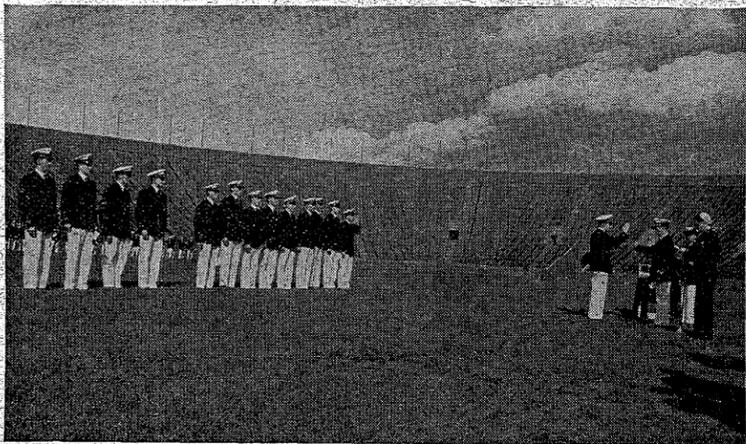
This year, as most of you undoubtedly know, marks the two hundredth anniversary of the birth of Thomas Jefferson. Recently I have been reading casually extracts from some of the letters Jefferson found time to write during his busy lifetime, and from one of these letters there started a train of thought that I think may appropriately be developed on Cap and Gown Day. This is the day on which, by happy tradition, the University of Minnesota honors those students who have achieved outstandingly in their academic work. In that fact, therefore, may be the excuse for turning away from current events—from battlefields and military campaigns—to discuss a subject that in a time of national crisis, might be considered on first thought as somewhat academic. That it is not academic, and that it does have immediate bearing upon what is happening in the world, I hope to make clear before I have finished.

The letter to which I referred at the beginning was written by Jefferson in 1785, while he was in Paris, and it was addressed to James Monroe. "I sincerely wish you may find it convenient to come here," wrote Jefferson; "the pleasure of the trip will be less than you expect, but the utility greater. It will make you adore your country, its soil, its climate, its equality, liberty, laws, people and manners. My God! [continued Jefferson] how little my countrymen know what precious blessings they are in possession of, and which no other people on earth enjoy . . ."

I have reread that last sentence several times and thought a lot about it: "How little my countrymen know what precious blessings they are in possession of, and which no other people on earth enjoy." Jefferson was writing before the ratification of our Constitution, before Washington was chosen President. And yet the truth and the implications of the words he penned to Madison are as living and significant today as when first put to paper one hundred and fifty-eight years ago.

Perhaps my attention would not have been caught by the quotation I have just read, had it not been that at about the same time I saw the report of a study undertaken by the editors of The New York Times. For more than a year this newspaper has been concerning itself about the extent of the knowledge of American history possessed by the people of this country. It is the conviction of The Times that only as men and women are familiar with the backgrounds of the country in which they live, can they become understanding citizens. This intangible but tremendously important thing we call national morale must have its foundations in the cultural and historical setting in which we live our national lives. With such a premise I am in full accord, for I

Navy ROTC Men Win Year's Awards



Outstanding students of the Naval ROTC were given awards ranging up to full equipment for an ensign at ceremonies in the Stadium June 1. Business houses and newspapers donated the awards.

Calls Collaboration Among Sciences Necessary Basis of Success in Research

Dr. P. J. Brekhuis Reviews Development of Investigation in School of Dentistry

Forces behind the development of research in the School of Dentistry, University of Minnesota, and which have also favored collaboration in education between dentistry and other medical sciences were described by Dr. P. J. Brekhuis, retiring professor of dentistry, at a dinner at which he and Mrs. Brekhuis were guests of honor recently. Interesting references to the part played by the late Dean Alfred Owre in establishing the standards of dental education at Minnesota also were contained in the paper, "Walking Against the Wind," which follows:

It is well known that the School of Dentistry at Minnesota enjoys an international reputation for its excellence. This reputation has not come about accidentally. There is a reason for it. In fact, there are three reasons:

- 1st. The early type of leadership.
- 2nd. The kind of teachers developed under this leadership.
- 3rd. The cooperation given by the University administration, the Graduate School, and the Medical Science Department.

As an illustration of the early type of leadership, I want to recall an incident that made a lifelong impression on me. It happened back in the winter of 1908—one of those real Minnesota winters. I was a student at that time. It was the last lecture hour before the Christmas vacation. Alfred Owre, then dean, finished his course on his favorite subject, metallurgy. Before he dismissed his class, he wished us all a happy

Night Classes And ROTC on Summer List

Two more departments of the University of Minnesota that do not ordinarily offer summer work have announced that they will continue classes during summer. These are the General Extension Division, offering evening work, and the Army ROTC.

Any male student who is not already in some branch of service may enroll in the summer ROTC courses, Major W. C. Rindland announced.

"We are urging students to enroll because of the advantage they will have if called into service, even though their work here has been in the basic course," he said. "It will help them get ratings."

General Extension Division is listing about twenty-five evening courses to start June 14 and end the week of August 2. Director Richard R. Price said other courses will be offered if enough students to form a class request them.

Naval ROTC work also will be continued through the summer, plans for which will be announced in connection with the detailed program for V-12 that will be started about July 1.

holiday, and, incidentally, he told us how he planned to spend his Christmas vacation. He was, he said, taking the tram to Chicago, in order to walk back to Minneapolis. Walking from Chicago to Minneapolis gave him an opportunity to walk against the wind. Imagine what an impression this made on the student group. We all wondered what sort of man this could be that chose to walk against the wind for 400 miles in the middle of the Minnesota winter, with its blizzards and 20 below, all for pleasure.

Those of us, who, in after years, learned to know Alfred Owre intimately, found out that this was one of the characteristics of the man. In fact, in more ways than one he made it a life hobby to walk against the wind.

An illustration of his principle of dental education and dentistry as a whole may be given in one sentence of an article he wrote on the technique of cavity preparation for gold foil fillings. It comes like a spontaneous outburst from a soul overfilled with cultural ideas gathered from all corners of the earth. I quote: "The whole world of artistic endeavor—literature, music, design, painting, sculpture—every division of the industrial and liberal arts—teems with lessons for the worker in so exacting and delicate a profession as that of dentistry. For one who acknowledges allegiance to this broader supremacy, the practice of our profession should, so far from narrowing a man's power, continually expand it and afford more and more intellectual satisfaction as he progresses to the ultimate goal of perfection."

This one sentence seems to be a distillation of a multitude of ideas teeming in his mind when he loitered in the art galleries, the libraries, and the workshops of the master artists of Europe and Asia. In fact, it contains the blueprint of his entire dental educational program.

Under Alfred Owre's leadership this ultimate goal of perfection seemed to become an unconscious moving force in every member of the faculty, and was transmitted to every graduate from Minnesota; thus Minnesota dentistry became famous.

The atmosphere of the masters of all times, in art, in philosophy, in literature, in craftsmanship, seemed to envelope you as soon as you entered Alfred Owre's home, or came for a conference in the Dean's office. The atmosphere is something intangible but very potent—you cannot see it but it is readily felt. You live and grow in it or you die from it—the external pressure without an internal equilibrium will be fatal. For more than a quarter of a century this Owre atmosphere was dominant at Minnesota, and today it is still the most potent factor in Minnesota dentistry.

Theories of Dental Education
The character of this man that chose to walk against the wind was most vividly demonstrated in the bitter struggle between the leaders of the two philosophies of dental education: this is now a

Soldiers Welcome Greetings Sent By Dr. Coffey

From North Africa, from the southwest Pacific, from England and from many army camps letters have come to President Walter C. Coffey in response to the Christmas greeting which he sent to all Minnesota men in service whose addresses could be obtained. Lt. Col. Bert Baston was among those who wrote, Bert saying:

"It is a tough job that we are on and I am afraid it is going to be a long, hard pull. It is a grand bunch of men that we are putting into the service but they must learn by hard knocks how to fight this kind of a war. The glamor and zest for combat have been replaced by the machine and we still must learn to drive."

Most of the men who had left before graduation expressed their eagerness to return to the University of Minnesota and complete their education once the war has ended.

The cards, mailed with the intention of having them reach the soldiers and sailors at Christmas time, arrived in some instances as much as two months after that date, replies indicated.

matter of history and may be looked at objectively. There was the large majority group who contended that dentistry and dental education would be best served by standing alone. Today we would call them Isolationists. The minority group—and a very small minority it was—believed in collaboration, and, as far as possible, in co-education with medicine. Alfred Owre, of course, was in the midst of the struggle on the minority side. The sad part of it is that when he thought he was defeated, he had won his greatest victory. He did not know it. We don't hear much from the Isolationists any more.

It is now admitted that the progress of dentistry like the forward movements in all other sciences and arts depends on research. Research does not develop under an isolationist regime. There must be collaboration and cooperation. Our dental school at Minnesota has been most fortunate in this respect. The presidents of this University have repeatedly invited suggestions from the dental faculty so that they could become more helpful in our work. The administration has generously provided laboratory facilities and funds so as to carry on research. The graduate school through its deans and faculty accepted dentistry, not as a stepchild, but as an equal in the medical science family, and provided facilities and funds to carry on graduate education and research on the same level as other medical sciences. The dean of the medical sciences group and the medical faculty fully appreciate the importance of dentistry as one of the health services—and thus has been active in cooperating to the

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Seventy-first Commencement Closes Year

'U' to Continue Instruction With Almost No Summer Reduction

HONORS MITROPOULOS

Conductor of Minneapolis Symphony Orchestra Made Doctor of Music

Approximately 1,200 students were graduated or given advanced degrees during the University of Minnesota's seventy-first June commencement exercises Saturday evening, June 12, scheduled as usual as an open-air ceremony in Memorial Stadium, with a provision for their transfer to Northrop Auditorium in case of rain.

Featuring the ceremonies was the award of the honorary degree, Doctor of Music, to Dimitri Mitropoulos, conductor of the Minneapolis Symphony Orchestra, which was awarded by President Walter C. Coffey on recommendation of the faculties.

Commencement marks somewhat less of a break in university activities this year than it has done in normal times, inasmuch as most of the colleges of the university will continue through the summer on regular, or nearly regular, schedules. Registration for summer work will take place June 14 and 15 and classes will reopen June 16.

The Navy's V-12 program in engineering, medicine and dentistry will be established in full by July 1. Twenty per cent of the quota of navy men assigned to Minnesota will be freshmen selected by the nationwide army and navy tests given high school seniors on April 2.

Presentation of Mitropoulos
Mr. Mitropoulos was presented to President Coffey by Prof. Paul M. Oberg, head of the department of music, who said:

"Mr. President, I have the high honor to present Dimitri Mitropoulos for the degree of doctor of music.

"Maestro Mitropoulos was born in Greece and there received at the Athens conservatory the foundation of the musical training later completed in Germany under Busoni, that has made him known wherever music is played and enjoyed. At the age of twenty-five he embarked upon a career as concert pianist, and his mastery of that instrument was quickly recognized with engagements as soloist with the principal orchestras of Europe. As a composer his early work attracted attention, but it was as a symphonic conductor that he was to achieve his eminence.

"Music knows no national boundaries, and this is reflected in the fact that Mr. Mitropoulos has conducted, among others, the great orchestras of Athens, Brussels, Paris, Berlin, Rome and Monte Carlo. In the United States his leadership in Boston, New York and Minneapolis has won critical approval, but what is most important, it has served to stimulate in countless thousands who have heard him in the concert hall or as members of nationwide radio audiences, a renewed interest in music and a deeper love for it.

"In his capacity as conductor of the Minneapolis Symphony Orchestra he has carried the fame of this state far and wide, and as a member of the faculty of this University, he has given of his great talents so that others might learn from him, and thus in turn, perpetuate the high traditions of good music. In recognition of these signal accomplishments, and as a means of showing their deep sense of appreciation for all that he has contributed through music to the welfare of this state, the faculties on the university recommend that you confer upon Dimitri Mitropoulos the degree of Doctor of Music, honoris causa.

President Coffey, in bestowing the actual degree upon Mr. Mitropoulos, said:

"Dimitri Mitropoulos, beloved conductor of the Minneapolis Symphony Orchestra, your music-

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Dimitri Mitropoulos

Quigley Tells China's Role In Global War

Her Heroic Stands Have Helped Western Powers Prepare for Japan Thru the Years

"China and the War," an address by Professor Harold S. Quigley, political scientist and expert on Far Eastern affairs, which he delivered as one in a radio series over WLB sponsored by the University of Minnesota's Key Center for War Information, has been distributed as a bulletin by that organization and is herewith reprinted by "Minnesota Chats."

These lectures, with various speakers, are written and delivered for the sake of giving the Minnesota public more thorough information on the global war.

In the Key Center bulletin Dr. Quigley said:

China has been fighting for her right to exist as a free nation for seven years, from 1931 to 1933, and from 1937 to the present time. She has fought with inferior weapons against an enemy that has proved itself a dangerous foe against the forces of two first class powers. Had China folded up and accepted her fate in 1938, when her ports and railways and major cities were in Japanese hands, it is possible that Hitler would now be master of the European continent and the British Isles. It is to China's resistance that we owe the years for preparation against the Japanese attack (which would probably have come earlier if we had refused to accept Japanese domination of Eastern Asia) In that event we should have been too deeply involved in the Pacific to have aided Britain after Dunkirk.

China would not deny that our debt to her is balanced by her debt to us. Without the credits advanced by the United States, Great Britain, and the Soviet Union, which permitted her to obtain aeroplanes, munitions, and trucks, China's struggles could hardly have continued. And the moral support of these countries for the government of Chiang K'ai-shek was a sustaining influence against internal factions. This is no time for assessing the relative importance of the aid to one another of nations now allies. The thing that matters now is to get on with the war. It cannot be taken for granted—rather it must be demonstrated—that every one of the United Nations is exerting itself to the utmost to win the war as quickly as possible. To the Chinese the war is Asiatic as well as European. They realize better than their allies that we are involved, not in two wars, but in one war, a global war.

Dangers from Japan

The American interest and stakes involved in winning this global war in Asia are at least as great as in winning it in Europe. We have to think of what would happen after the war if China were to fall into Japan's orbit. Our security would be menaced, even after the defeat of Hitler, if a Japanese empire over-spread Asia and Oceania. We cannot place confidence in Japanese avowals of a co-prosperity sphere. Sooner or later there would come a new conflict in which we would command lesser resources and far less manpower than the Japanese. Meanwhile, we would have no part in Asiatic reconstruction, and Eastern Asia would not be drawn into a new world organization. In economic matters it would be as tightly sealed as Korea or Outer Mongolia. The greatest remaining outlets for American trade and investment would be shut off. Our contributions toward a democratic China would have to be discontinued, our philanthropic and humanitarian and technical resources would be ignored. Therefore it is essential that we do not allow ourselves to treat the war in Asia and in the Pacific as secondary to the war in Europe and the Near East. We must keep China in the war and aid her toward common victory.

Not only has China afforded us time to prepare, time which we used all too inadequately, her continued resistance provides us with land bases close to Japan, without which it is doubtful that we could defeat so powerful a state. If we do not use those bases Japan will, and with them the resources in food, metals, coal, wool, cotton, and lubricating oil that she must have to stay in the war. Along with the bases, China can furnish an inexhaustible supply of tough and seasoned fighting men who know Japanese tac-

Should Vaccinate Horses, Boyd Says, For Encephalitis

Farmers who may be encouraged by last year's record to pass up vaccinating horses and mules this year for sleeping sickness may be taking undue risks, says W. L. Boyd, veterinary chief at University Farm. Only 319 cases were reported in Minnesota last year according to a survey made by livestock sanitary board officials.

It is important to recognize that sleeping sickness has gained a foothold in this state, says Professor Boyd. While last year's outbreak of sleeping sickness was very mild compared to 1941 when more than 80 counties were involved, it is believed that cool summer weather and the larger number of animals vaccinated last year were important controlling factors. Prolonged heat spells this summer and any marked decrease in the number of vaccinated animals may set up ideal conditions for an outbreak such as that experienced in 1941. The best time to vaccinate is May and early June, according to Dr. Boyd. As soon as mosquitoes and flies appear, there is danger.

tics and the lie of the land. One need not be a professional strategist to see the obvious crucial importance of Chinese bases. Whether or not General Chennault is right in his statement that with a hundred bombers and four hundred fighter planes he could drive the Japanese out of China, it is clear that China is the best base for air attack upon Japan.

China Must Not Succumb

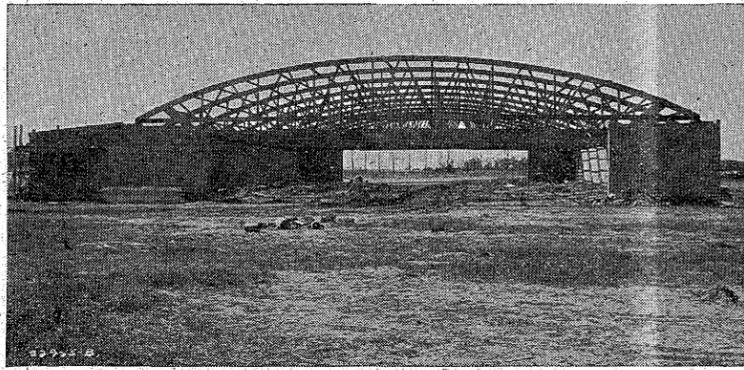
We must remember that Japan's major purpose has been to conquer China and that any other success she might attain will be only temporary if China continues to fight and to grow in strength. It follows that if China is turned into an offensive theater Japan will be compelled to divert forces to China which now can be used elsewhere. On the other hand, if China were to succumb, Japan would be able not only to withdraw her own forces from China for attack upon India and Australia but to recruit Chinese troops. And the more completely Japan consolidates her position in China, the more nearly she will come to rivalling Germany as a military power. If she is given another year or two to regiment the poverty-stricken peasants of East Asia and to exploit its resources, Japan might well become stronger than Germany.

The Chinese have the will to fight on, whether or not they receive adequate support from the people of the other United Nations. Actually they still control two-thirds of China Proper. But the wealthier and more productive provinces are now in Japanese hands. Most of China's iron ore is in the occupied area, together with extensive coal fields. The Chinese cannot supply themselves with airplanes, tanks, heavy guns, and gasoline. Consequently they cannot take the offensive alone. Under such conditions it is doubtful that the keeping of a half-million troops in China is any real disadvantage to Japan. She can use China as a training-ground for green troops where they can use their bayonets and learn maneuvers with greater zest than in playing at war on their home grounds. To help win the war, China must become a center of offensive action; and for that she must have allied support in much greater measure.

Considerations of political psychology as well as of strategy argue in favor of more aggressive support of China. In China it is all-important that a leader maintain his prestige, that he do not lose face. Chiang K'ai-shek is the symbol of China's nationhood today; the people are united behind him for that reason. He can hold their loyalty only if he continues to give them hope that he is leading them to victory. Deprived of that hope, they are likely to fall prey to the factionalism that is represented by Wang Ching-wei, Japan's puppet at Nanking. China's republic is only thirty-one years old. It is as yet far from unity except on the one issue of national salvation. Personal leadership, rather than constitutional law and organization, is what holds the country together. It is therefore crucially important that the Chinese people be not led to believe that their cause is secondary to any other in the minds of their allies. The best evidence of our equal concern can be given in an increased flow of bombers and fighters to China.

Another kind of United Nations regard for the people of China and for their national government at

New Hangar Up at 'U' Airport



Chungking was given recently in the offer of the United States and Great Britain to relinquish extraterritoriality immediately. In 1943 the system under which many foreign states conducted their own courts and enforced their own laws upon defendants of foreign nationality in China would be a hundred years old. Along with extraterritoriality all other survivals of one-sided treaty rights should—and presumably in due course will—be abolished. Some of these already have been surrendered. Both in China and in other Asiatic states these evidences of willingness to treat China as an equal in the international community will give moral support to the Chinese government and will give the lie to Japanese propaganda that the white nations are only interested in exploiting Oriental peoples.

The United Nations may well expect, in return for increased support to China, that the existing antagonism between the National Government at Chungking and the Communist organization centered in certain northwestern provinces be reconciled. The leaders of this regime are strongly anti-Japanese. There is no likelihood of their selling out to the enemy. But for the armies under their direction the Japanese would have over-run Shansi and Shensi in the early stages of the war, thereby shutting off the one remaining road of foreign supply. These forces are today incapable of aggressive action because of lack of weapons and ammunition. Chungking cannot supply them out of its meagre store. But its inability to supply them is matched by its reluctance to do so. This attitude is an aftermath of the struggle that went on between the Kuomintang (the National Party), and the peasants and workers, who were not themselves Communists but were led by "Communists," for some ten years. The feeling is due on the Nationalist side to the fear of social revolution and, on the side of the peasants and workers, to the fear that when the fighting is over they will be deprived of certain economic and political advantages that they have gained during the war. This cleavage is a hindrance to the national struggle against Japan and should be closed up before it results in a serious outbreak. The people of China have borne the terrible brunt of the war and are deserving of relief from their poverty and insecurity. It is to be hoped that the Kuomintang will take a liberal position concerning their necessities and that it will be rewarded with general recognition that all the people must accept a unified leadership.

Should Reconquer Burma

For adequate supply of a Chinese offensive the reconquest of Burma should be undertaken. Generalissimo Chiang K'ai-shek and General Stillwell agree that Burma can be recovered and the Burma road reopened. In Chungking there is doubt that China's greater allies want to reconquer Burma. The Chinese are asking whether imperial interests are being placed ahead of freedom for Oriental peoples; whether Burma is to be left in Japanese hands until the end of the war in order to forestall any claim to a new deal for that state, based upon reconquest by allied forces. They are right in their emphasis upon the crucial importance of reopening the Burma route, as a glance at the map will show. And the post-war status of Burma may not be for the United Nations to determine if the best supply-line to China is left in Japanese control.

We would not have to rely solely on air routes or a re-opened Burma road if railways and roads now existing across Central Asia were made available. These, however, pass through Russian territory and Russia is naturally disinclined to become involved with Japan until we are able to assist in the defense of Siberia. I suggest that if the Japanese are forced to fight on more even terms

American Aviation, Inc., operators of the University of Minnesota airport at New Brighton, just beyond the munitions plant, has under construction a hangar 120 by 160 feet which is expected to be finished in a few weeks according to T. L. O'Hearn of the university staff. The field is just beyond the munitions plant, alongside the Forest Lake "cutoff."

in China they will be unable to attack Siberia. Their forces now in Manchuria will be needed in China proper.

It is problematic whether Russia, relieved of her present fear of an attack upon Siberia, would deny us the use of her territory in Central Asia. Nothing is more certain than Japan's intention to invade Siberia at the first favorable opportunity. Not only has she had a covetous eye upon that vast empire for many years, but she also must, if she can, fend off the possibility that Vladivostok, only a few hundred miles from Tokyo, will become a base for bombers against her cities. Consequently, Russia must do everything that she can to prevent Japan from working her will upon China. It is reasonable for Russia to expect the United Nations to do their part in Asia as well as in Europe. On the other hand, Russia would defeat her own interests if she discontinued aid to China. Moreover, Russia need not be asked to weaken her Siberian defenses but only to permit transport of equipment over her territories in Central Asia.

Willkie's Flight Significant

Mr. Willkie's return to the United States by air across Mongolia and Siberia, together with the opening of the Alaskan highway, heralds the utilization of Siberia as a base against Japan. But again this depends upon American readiness to use Siberian bases, since Russia has not the power at present to take the offensive in the Far East. It would seem desirable to assure Russia as soon as possible that we are ready to use her Siberian bases even though that means diverting air power from Australia and the South Pacific islands. How could Japan devote any considerable force to the occupation of Australia if her main islands were being endangered by United Nations bombers in China and Siberia? And if Japan should overwhelm both China and Siberia, or China alone, what would be the hope of saving Australia? Are not Japan's moves in the South Pacific designed to keep us occupied at points remote from the real objectives until she can consolidate her political and economic position in East Asia?

If this analysis holds water, it leads to the conclusion that China is the key to the defeat of Japan. Japan can attack any region within her reach at present with relative impunity because China must remain on the defensive. But if China becomes a hornet's nest of Bombers and fighters, Japan will have her hands more than full there. If we save China, we save Australia, India, and Siberia. We make it impossible for Japan to supply Germany or to join forces with Germany in the Middle East. From a rescued China we can proceed directly to attack upon the heart of the Japanese Empire. If we can stop the heart beat we need not worry about the newly-conquered extremities of the imperial body in New Guinea, Singapore, Rangoon, and Kiska. They will fall as apples fall when the tree is shaken. It will take tremendous power to shake the tree but the United Nations have the power if they will use it effectively.

In a letter to the "New York Times," published on November 14, 1942, Admiral H. E. Yarnell (Retired), wrote:

"In the war against Japan the main effort must come from the mainland of Asia, which means China. Principally from that area must be given the blows that will bring Japan to her knees. The manpower and air bases are ready.

Iowa Regent Gives Us Praise

The University of Minnesota was highly praised in a statement made to his own board of regents by Richard H. Plock, representative of the University of Iowa at meetings here last fall of the Association of Governing Boards of State Universities. A copy of his comments were transmitted to Regent A. J. Olson of Renville, retiring president of the association. In part Regent Plock said:

"The University of Minnesota is a great institution. I am always overwhelmed by the massiveness of it. The new Coffman Memorial Union is unquestionably the finest building of its kind in the country. Incidentally, the students are very influential in its management. The Northrup Auditorium, where we were privileged to attend a convocation at which the authoress reviewed her book "The Doctors Mayo," and where we were guests of the University at a concert of the Minneapolis Orchestra, seats 5,000 persons and is so useful that it is a shame that we cannot have something like it. The library, with its seven stories of stack space is also something to be desired. There is an underground system of garages under the campus affording parking space for several hundred automobiles. Everything is big, even the football team.

"The building in which we were housed, the Center for Continuation Study, is the pride of the University. It contains about fifty bed rooms, a complete restaurant, several large and small meeting rooms, beautifully furnished, the customary underground garage and a tunnel system connecting it with other University buildings. It is used for such meetings as ours, and by various groups such as doctors, farmers and scholastic groups who come to the campus for refresher courses or short courses.

"Another feature of the university which impressed me three years ago and which I studied again briefly on this visit is its civil service system for clerical employees and I again urge that we give it serious consideration.

"The University of Minnesota has a retirement system, which, in the amount of money actually paid out, appears to be much less costly than our half-time half-pay retirement system. Eventually we must meet this problem squarely. Such a system as theirs is better for the state, for the staff members, and for the morale of the University.

"The Minnesota regents and the university staff were extremely hospitable and gracious to us. Even the students entertained us at a tea in the Union. We found them, as our students, to be courteous, energetic, hopeful, and fine young people. With such young people, whom we cannot fail, America's future should be secure."

All that are lacking are planes, guns and munitions.

"The naval operations in the Pacific are contributory, of course, to her final defeat. But a campaign from that direction alone is a long and costly affair with success doubtful. The early defeat of Japan hinges mainly on operations from China."

These words from a sailor-statesman who knows China and American naval strategy equally well, demand the most thoughtful attention.

In conclusion it should be made clear that the purpose of this examination of the importance of China and the danger of treating Japan as a secondary enemy is not to urge that the Asiatic theater be given precedence over the European. It is rather to point out that the United Nations have not given sufficient consideration to political and strategic facts in Asia. China is not pulling its weight in the determination of the grand strategy of this global war. American interests and sentiments call for greater and better-directed efforts to maintain the morale and assure the cooperation of Asiatic peoples. The development of China as an offensive base is a condition of United Nations success, not only against Japan, but against Germany as well.

Institute Market Reports

With increased activity at the Twin City fruit and vegetable markets expected in the near future, the Minnesota Agricultural Extension Service has resumed its daily reporting service to home-makers. Each week day Twin City newspapers and radio stations will report the activities at the local markets.

Developments At Fruit Farm Win Praises

In addition to the superb apples, red raspberries, strawberries and plums it is developing or has produced, the University of Minnesota's Fruit Breeding Farm near Wayzata is at work on pears that can be grown more widely in the state, is experimenting with nuts, and hopes to develop a peach that will grow here. The report of the visitors' committee, issued each year, was recently received by the Board of Regents.

Apples should increase in importance swiftly in this state for two reasons, said the report. First, Minnesota eats nearly three million bushels of apples a year while producing only half a million bushels, which shows the size of the home market, and, second, the number of apple trees in the United States has declined from 115,000,000 in 1920 to 58,000,000 in 1940, with the more rapid drop in the latter part of that period.

"This would make the present seem an ideal time for Minnesotans to expand the planting of apples," said the report.

A new apple, developed at the experiment station, Fireside (Minn. No. 993) was said to have the finest flavor of any apple developed anywhere. It is a little late, thus suitable chiefly for southern Minnesota. Prairie Spy, late-keeping and bright red, and the well-known Haralson, the heavy-yielding, hardy, all red apple, are highly praised, along with Beacon, Minjon and the newly-named Victory. One of the attributes of the last named is that it does not fall from the tree to any extent. Minnesota No. 240 is a crab resembling the Whitney but a better keeper. It has recently been developed.

In working on pears the search is for one that is of good quality, hardy and blight resistant. Parker pear, produced at the station, is praised, but called not blight-proof.

A new and as yet unnamed sour cherry has been developed for which a fine future is foreseen. Burgundy (Minn. No. 1192) is a fine new strawberry, high-yielding and firm, and excellent for freezing and for shortcake use.

Strawberry culture is rapidly moving northward, the report points out. It shows that strawberry acreage in Minnesota has increased from 2,374 in 1929 to more than 4,000 acres, and that Michigan and Wisconsin have made similar gains while Missouri, as a southerly example, has reduced its strawberry acreage from more than 25,000 acres to about the same as Minnesota's.

Chief and Latham continue to be two of the three or four best red raspberries in production anywhere, it is shown. In the red raspberry field Minnesota now rates third in acreage, fifth in production and fourth in value of crop.

Strong recommendations for continued support of the work and praise for Prof. W. H. Alderman and his assistants are contained in the report, which was signed by Leon F. Gates, Rochester, chairman; George Pabst, St. Paul Park; Kenneth B. Law, Lake City and W. C. Hanson of St. Paul. The report was made to the State Horticultural Society and to the University Board of Regents.

'U' Graduates 1,200 Students

Continued from page 1, column 5
cal career began in your native Greece, but your fame has become as international as the music that is your life; inspiring interpreter of timeless masterpieces, you draw deeply from the past and yet sympathetically encourage composers of the present; virtuosos, your brilliant performances at the piano profoundly move all who hear them; composer and teacher; scholar, your understanding approach to every composition you play wins respect and admiration of the members of your orchestra and of the world's greatest artists as well; above all, a man of genuine, universal human qualities which are the very soul of the sublime music you give mankind;—for all this, and especially for your unparalleled contribution to the musical life of this state, and to the university on whose faculty you serve with honor, the Regents of the University of Minnesota, upon recommendation of the faculties, confer upon you, Dimitri Mitropoulos, the degree of Doctor of Music, honoris causa, with all its rights and privileges.

Ada L. Comstock, Radcliffe Head, To Retire Sept. 1

Ada L. Comstock, president of Radcliffe college for the past 20 years, will retire Sept. 1, it was announced at Cambridge, Mass.

Miss Comstock became president in 1923 after serving 11 years as dean of Smith college.

Prior to her deanship at Smith, she was professor of rhetoric and dean of women at the University of Minnesota.

A native of Moorhead, Minn., Miss Comstock served as president of the American Association of University Women from 1921 to 1923.

In May, 1929, she was appointed by President Hoover as the only woman member of the Wickersham commission on law observance and enforcement.

Miss Comstock is the only woman member of the board of trustees of the Teachers Insurance and Annuity Association of America.

She also is a member of the advisory board of the Massachusetts education department as well as educational representative of the First naval district for the women's naval reserve.

Court of Honor Goes on Radio

Scholastic leaders in the senior class of the University of Minnesota were publicly recognized again this year at the annual Minneapolis Court of Honor.

Due to travel restrictions, food scarcity and limited banquet facilities the time-honored dinner for the graduating students was replaced by a 15-minute radio presentation.

This yearly tribute to the outstanding students is sponsored by the Minneapolis Civic & Commerce association, Minneapolis Junior Association of Commerce and the Council of Civic Clubs.

At the radio ceremony over WCCO of Minneapolis KDAL of Duluth, Thursday, June 10, nine-thirty to nine-forty-five p. m., one certificate of merit was presented for the 137 honor students. Miss Mildred Nolte of the College of Science, Literature and Arts, received the certificate on behalf of her classmates.

Speakers on the radio program were Thomas Moore, president Minneapolis Civic & Commerce association; Paul Foss, president Minneapolis Junior Association of Commerce; Charles Huebsch, president Minneapolis Council of Civic Clubs, and President Walter C. Coffey of the University of Minnesota.

This year's Court of Honor was the eleventh annual celebration in recognition of the scholastic achievements of leading students at the University.

The roll of honor students follows—

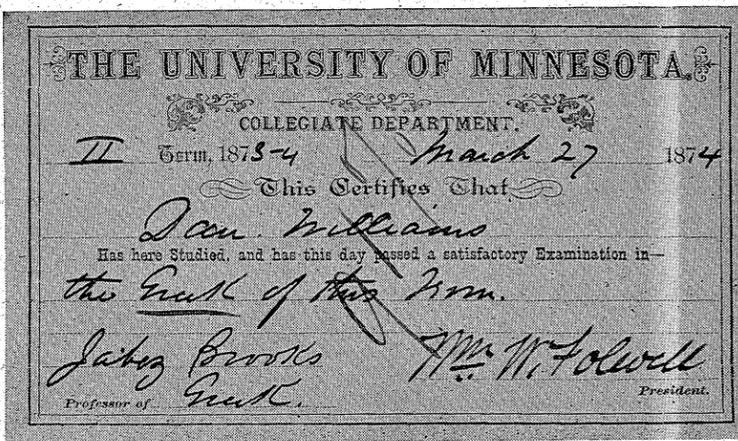
Institute of Technology
Curtis E. Miller, Redwood Falls; Robert F. Liningstone, Mound; Minn.; Curtis Larson, Cottonwood; Ronald Gourley, St. Paul; Henry Stone, Mpls.; Bryce L. Rhodes, Havre, Mont.; Donald Drukey, St. Paul; Alfred Steinhauer, Thief River Falls; Wiley W. Soubra, Mpls.; Bruce L. Birchard, Mpls.; Chas. B. Leslie, Mpls.; Daniel Schiavone, Mpls.; David E. Phillips, Virginia; Arthur L. Jones, Robbinsdale; Dean G. Klampe, Rockford, Ill.; Christie J. Geankopolis, Mpls.; Richard F. Messing, St. Paul; William J. Bailey, Walker; Raymond R. Halverson, Duluth; Christian S. Rondestvedt, Mpls.; Henry A. Doepke, Mpls.; Verdine Hoch, La Crosse, Wis.; Raymond Rantala, Embarras; Marvin E. Diers, Howard Lake; Coleman D. Fritz, Fairmont; Carl J. Glasrud, Mpls.; Arnold Satz, Mpls.

Agriculture, Forestry and Home Economics
Marion E. Harris, St. Paul; Ruth Wright, Aitkin; Alice Gehant, Clarkfield; Althea La Raut, Roseburg, Ore.; Jeanne A. Killmer, St. Paul; Henry M. Cavert, St. Paul; Keith McFarland, Austin; Walter T. Bjoraker, Claremont; Shirley V. Rafn, Two Harbors; Kathryn Schwartzau, Red Wing; Glen A. Bergan, Williams; Ethel Haga, St. Paul; Lowell O. Nelson, Mpls.; Ethel Marmorine, Gonvick; Myron K. Brakke, Rochester; Guinivere J. Smith, Ferguson Falls, June L. Sederstrom, Litchfield; Urban Lees, North Branch; Jean A. Richardson, Waupun, Wis.; June Simmons, Mpls.; Gordon Maxson, Mpls.

The Law School
Frank Claybourne, Albert Lea; C. Hamilton Luther, Mpls.

The Medical School
Harold C. Anderson, New Ha-

Grade Card of 70 Years Ago



Mementoes of days spent in the University of Minnesota by Daniel Williams, Class of 1878, which are some of the most interesting material of the kind recently uncovered have come into the possession of T. P. Hughes of the department of mechanical engineering. The late Mr. Williams was the uncle of Mrs. T. P. Hughes.

Included in the package are commencement programs of 1878 and 1881 and an assortment of class cards, all signed by both the professor in question and President William Watts Folwell, certifying that Mr. Williams had

completed certain courses and giving his marks in them.

Sixteen students were graduated in 1878 and fourteen of them spoke at the graduation exercises, with interludes of music after every three or four talks. Williams' talk was on "Skilled Labor" and one of the addresses had as a subject "Communism," which may then have been of interest because of outbreaks in France following the Franco-Prussian war, or may have been a theoretical matter.

Graduates of the class were Julius C. Bryant of St. Peter; John Hamilton Lewis of Monticello; Thomas R. Newton of Maple Grove; Evan R. Pritchard of Judson; Mr. Williams, of Lime Springs, Iowa; Fred L. Couillard of Richfield; Judson T. Howell of Chatfield; Harvey Jay Smith of Red Wing; Myron DeVere Taylor of Melrose; William J. Warren of Medford; Mary Anna Maes of Owatonna; George Albert Wood of Elliot, a name not now known in Minnesota but possibly Eyeota, and only three from Minneapolis, namely, Nettie Getchell, Charles Spencer Bushnell and Mary Warwick Robinson. A bachelor of science went to Henry Clay Leonard who had an earlier degree of B.C.E., Class of 1875.

By the time 1881 rolled around the number of graduates had increased to 27, the program shows, one of whom, Fred Beal Snyder, was destined to play a large part in the nurture and development of the University of Minnesota. On May 15 he was reelected chairman of the Board of Regents, which position he has held since 1916. Mr. Snyder's commencement address had as its subject "The Fall of the Bastille."

Members of the Class of 1881 as listed on the graduation program were: From Minneapolis, Herbert O. Chowen, Fred Beal Snyder, Fred L. Bardwell, Herbert John Broughton, George S. Grimes, Lettie May Crafts and Emma Elizabeth Grimes. St. Peter sent two, namely, George B. Aiton, later prominent in public school work in Minnesota, and William Cullen Bryant. Others were Samuel Gilmore Anderson, Eden Prairie; Otway W. Baldwin, Clear Lake; Emily Louise Hough, Philadelphia; Charles Edward Kent, Toledo, Ohio; William Leslie King, Garden City; Quintin J. Rowley, Oakland; Diana Burns, Minnetonka; James Jennison, Red Wing; David Albert and Samuel Allen Locke, both of Minnetonka; Sarah Ellen Palmer, Shell Rock; William Hines Savidge, Cleveland; Lila Ruth Williams, Brooklyn; Harlow Horace Bonniwell of Hutchinson, long a member of the Minnesota Legislature and author of the famous speech declaring the quail to be a songbird and entitled to protection as such; Margaret Agnes Campbell of Nova Scotia; William Edmund Harrington of Hutchinson and Bradley Phillips, Jr., of Hudson, Wis.

Sen. Bonniwell's speech was entitled, "The Duty of Educated Men." That of George B. Aiton was on the subject "True Culture, Practical." Mr. Aiton was valedictorian.

All twenty-seven were listed for speeches, which may have been some sort of a world's record. There had to be four musical interludes, besides music before and afterward. There also was a prayer by the Rev. David Brooks.

George Faust Promoted
George Faust, staunch University of Minnesota backfield player of a few years ago, is now a lieutenant (j.g.) in the navy, to which rank he was recently promoted at the United States Naval Air Station, Jacksonville, Fla. Lt. Faust attended North high school before coming to the University of Minnesota. He has been assigned as athletic officer at Cecil Field auxiliary air station, near Jacksonville.

Science Needs Collaboration

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extent of serving as members of most important committees. Especial credit is due Dr. McQuarrie, who graciously accepted the responsibility of leading the infant attempts of graduate education in dentistry. As a pediatrician he was specially qualified for this task—and he has done an excellent job.

Cooperation Produced Research
If anything has been achieved in promoting dental education and research at Minnesota, the credit belongs to the cooperative effort—not to any individual. It has, however, been a wonderful privilege to have had the opportunity to play a part in this game, and it is with mixed feelings that I am relinquishing my duties.

It seems not so long ago since the dentists downtown used to call us the Owre Kid Faculty. Looking over the faculty roster now, there are about 40 left of the original group, but none of you are kids any longer. Year by year, someone has to step out, and replacements must be made. The future of Minnesota dentistry will depend on the wisdom of these replacements, in spite of buildings and equipment, no school is better than its faculty.

The most important task ahead for you, Mr. Dean, and the senior members of the faculty—with the support of the administration—it seems to me, is to be on the lookout for promising young men not only in our own graduating classes, but throughout the nation. We have a handful of splendid, promising young men, recently added to the staffs, but the number is insufficient to fill all the gaps.

Whether we like it or not, at the end of this war we shall be facing new conditions. We shall have a society which will make greater demands on dental services than the profession is prepared to meet. There may come demands for changes in the present dental educational program. Storms are brewing—we are facing a readjustment period. Wise leadership will therefore become very important. We shall need leaders with courage of their conviction—men who are willing to face the wind if it becomes necessary. To be true to its tradition, Minnesota must keep its position in the forefront.

'U' Chemist Writes New Text

Drs. M. Cannon Sneed, head of the division of inorganic chemistry, University of Minnesota, and J. Lewis Maynard, of the same division, are authors of a new text, "General Inorganic Chemistry," which is attracting attention. It is published by the D. Van Nostrand Co., Inc.

One writer has called the book "very thorough and complete, and at the same time readily teachable to large groups of students differing in preparation, capacity, and outlook." It has been used successfully with students who have not taken chemistry in high school, as well as those who have a fine preparation.

Throughout, every topic is most fully and effectively presented. A clear statement of the historical background is followed by an exceptionally simple picture or concept, and then the more detailed and advanced aspects of the subject are gradually developed. In this way the student always has a good understanding of any topic before he goes into its deeper ramifications. There are complete explanations of important points, and of those subjects which students find difficult. Outstanding instances of this kind are the treatments of ionization, ionic equilibria, and the newer concepts of electrolytic solutions.

The book covers its field thoroughly, with particular attention to the more recent developments. The less common metals are treated fully enough to give the proper balance to the descriptive side of the subject, and to do justice to their importance in present-day life and industry. The chapter on alloys and on intermetallic and related compounds is a new feature in textbooks in this field. It includes a particularly good treatment of the chemistry of the coordination compounds. All this material has been most skillfully organized. Main topics and sub-topics have been clearly indicated, and summaries are used extensively to aid the teacher and students in differentiating the more important from the less.

Knowledge of Country Deep Need, President Says

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have never been able to see how one could be a devoted patriot—using that word in its best meaning—unless he possessed the historical roots through which patriotism is nourished. One cannot be patriotic about nothing; patriotism requires a focus, and for the good citizen that focusing point is the background of his country, and his comprehension of the simple fact that all we value in life today comes out of an historical past.

There's a quaint old couplet that puts this general idea succinctly:

What's hit, 's history

What's missed, 's mystery.

It is the conviction of The New York Times that more history and less mystery would be a good thing for the citizens of this country, using in this instance the words mystery and ignorance interchangeably.

Accordingly this distinguished newspaper undertook a study of the store of historical knowledge to be found in one segment of the population. How much American history do people know? The Times in looking for an answer made numerous assumptions, one of which was that some measure of the adequacy of historical information could be established by testing college freshmen. Here, presumably, would be a group of students who might be regarded as the best products of the public high school system; here too, would be young men and women fresh from the secondary schools, and motivated by some desire, intellectual in part at least, to continue the educational process. And so, in cooperation with thirty-six colleges and universities, a test was given to 7,000 college freshmen, to ascertain what they knew about this country in which they are growing up, and in which they will soon assume the full responsibilities of citizenship. The test, I may add, was prepared by an official of the United States Office of Education working jointly with an eminent historian, Dr. Allan Nevins, of Columbia University.

There is not time to summarize the results in detail, but some points are worth calling to special attention. The general conclusion would seem to be that "college freshmen throughout the nation reveal a striking ignorance of even the most elementary aspects of American history, and know almost nothing about many important phases of this country's growth and development."

Let's turn to the record, and be specific—and while this is not an "Information, Please" convocation, I am confident that many of you who are being honored today will rather enjoy catching a glimpse of the ignorance that was shown by the composite results of the test. Some of you may also be relieved that you are hearing the questions, but are not being asked to answer them!

More than 1,700 of the 7,000 freshmen apparently did not know that Abraham Lincoln was President of the United States during the Civil War. More than 50 students said George Washington was President during the War of 1812. Only 13 per cent of those tested could name the President of the Mexican War period. Various questions involved the Presidents of the United States, and in the answers 40 individuals were specified as having been President who never held the office. It is hard to believe, but almost one-third of the group could not name correctly the President during World War I; nearly 100 students said it was Hoover, and 125 said it was Coolidge.

Suppose that instead of giving answers, I put some of the questions to you. How many of you could name the Thirteen Original Colonies? (Take comfort in the fact that only six per cent of college freshmen, judged by this sample, could do so.)

Identify at least two contributions to American history by Abraham Lincoln, Thomas Jefferson, Andrew Jackson, and Theodore Roosevelt. Overlooking the one student who replied that "Lincoln emancipated the slaves," it still remains true that only 22 per cent of the papers listed correctly two historical items attributable to Lincoln; only 16 per cent of the students knew enough about Jefferson to set down on paper two contributions that he made to American life; only 12 out of a hundred were able to bring Andrew Jackson from the obscurity of their minds; and over 80 per cent failed to list two accomplishments of Theodore Roosevelt. One student who remarked of Teddy that "he collected large quantities

of animal heads" may have been on the right track in his thinking, but his idea obviously got lost somewhere in the vagueness of his memory.

Another question asked the students to name any four of the fifteen freedoms guaranteed to the individual in the Bill of Rights. Less than half of the 7,000 could do this, even though we are now engaged in a war, one primary purpose of which is to defend and preserve those rights. And considerable numbers of the freshmen mentioned woman suffrage as one of the items in the Bill of Rights!

As to geography—the results are astonishing. Or are they? Can you name the bodies of water on which these cities are located: Cleveland, St. Louis, Cincinnati, Portland (Oregon), Memphis, and Milwaukee? The city located accurately by the largest number of those who took this test was incorrectly placed by more than two-thirds of the students. Only three per cent of the students could list the States along the eastern seaboard in geographical order.

How many Presidents were assassinated? Can you name them? Virtually every President was named by someone in this category, and many names were given of men who never lived in the White House.

When it came to the identification of famous men, the results are equally perplexing. Over one-third of the students listed Alexander Hamilton as a famous President, and others associated him with watchmaking; William James was hopelessly confused with banditry; nearly 100 students transformed Jay Cooke into an arctic explorer; not a third identified Carter Glass; 40 per cent of them said John Burroughs made typewriters or adding machines; 2,000 of the freshmen attributed Uncle Tom's Cabin to Henry Ward Beecher; and in response to the request to set down three names associated with the development of American railroads, Casey Jones appeared again and again, in fact 1,500 times! Only two per cent of the group could locate within ten years the beginning of the railroads in the United States.

Just about one-fifth of the students could name two areas added to the territory of the United States by purchase, and the misinformation on this point was unbelievable. In fact, it was not only the inability to answer that impressed me all the way through; it was, rather, the ability to answer incorrectly. The wonder is that so many heads could contain so much that isn't true!

I have dipped into the tabulated results only here and there to give you a meager sample of the replies, but it is enough, I am certain, to suggest in a disheartening way that American students, even at the college level, do not know their country's history. These students whose replies I have quoted were enrolled in reputable institutions. I am possibly saved embarrassment in that the University of Minnesota was not included, but equally good institutions were. In fact, the list of 36 colleges would be a satisfactory cross section of higher education in this country.

There is a temptation to speculate why this state of affairs should prevail. Perhaps American college students are tested to death, and just did not put forth the effort on this list of questions, coming as it did from outside their institutions and not from their own professors. There were no grades involved. Nor do I know how well the actual testing was administered. Perhaps some students took the whole affair as a joke—some unquestionably did. Perhaps there was too much of rote memory involved. Undoubtedly some portion of the blame, if blame it be, lies in inadequate instruction at the high school level. I think I am correct in saying that American history is usually taught in the junior and senior years of high school. On this basis, these 7,000 students should have had the materials freshly in mind. This condemnation of high school instruction would be valid, however, only to the extent that students in high school study American history. As a matter of fact, the study of American history is compulsory in high schools in only 26 states, and even here one is not always sure of the content of courses designated as social studies. At the college level, required courses in American history are not as common as might be supposed. The New York Times checked into this point, too, and found that at any one time only about nine per cent of college under-

graduates are studying American history. Seventy-two per cent of American colleges apparently do not require American history as a unit for admission. (Incidentally, the University of Minnesota does not.) And 82 per cent of American colleges do not specifically require American history for graduation, including the University of Minnesota. Nearly 40 per cent of American liberal arts colleges and universities, The Times reports, permit a student to major in American Government without taking any supplementary courses in American history. What this all means, in the last analysis, is that it is possible in this country for very large numbers of boys and girls to graduate from high school without a comprehensive course in the history of their country, and then to continue in college to a baccalaureate degree without such a course.

It would be interesting to know how many of you who are sitting before me this morning in caps and gowns have taken a course in American history during your four years at Minnesota, and how many of you had an adequate course in your high school years, that is, a course that really taught you American history. Shortly I shall read the list of those elected to Phi Beta Kappa. I wonder how many of the new members could have passed The New York Times test? The question has implications that invite one to intriguing speculation. But I must pass them by, leaving it to each of you individually to probe the inner recesses of your minds for an appraisal of the adequacy of your own historical knowledge.

There are interesting questions, too, involving the advisability of compulsory instruction in the field of history, but I am not going to discuss these or other matters involving educational policy. I will leave that to members of the faculty.

There are, however, some general observations that I think can properly be made.

First, the loyalty that democracies have a right to expect from their citizens can be achieved in the last analysis only if those citizens have a faith in the democracy. Men cannot be expected to bend their devotion, much less to give their lives, for something they do not understand, and about which they know little or nothing. I am one who believes that in this present war we are fighting for something that is fundamentally important to each and every one of us. I believe a way of life is involved—a way of life that represents the accumulated heritage of our nation. And I believe that you and I—all 130 million of us that make up this nation—can fully appreciate how important this struggle is only if we are conscious of the long history that has preceded us, and out of which life as we know it, and want it, has emerged. Recall again those words of Jefferson: "How little my countrymen know what precious blessings they are in possession of." How shall we come to know how precious the heritage is? How shall we awaken in the citizens of this country a burning awareness that we are blessed with a way of life that is worth fighting for? I have been told by army officials that they are appalled by the ignorance of many soldiers who are now going into camps—ignorance of why this country is at war, why this country is asking them to serve in its armed forces, why it is essential—if we are to remain free men—that the ideas of the totalitarian nations must be made impotent. To remedy this, instruction is being offered on why we are at war. It is a fine thing to tell the soldiers why we are at war. I am troubled only by the fact that their educational backgrounds have such serious gaps that it is necessary to tell them.

A second point. As we look back upon the developments of recent months, back over the events of the last decade, it is difficult to understand why we in this nation failed to take seriously the evidences of a growing international peril. The signs were clear that in the rise of the dictatorships our way of life was being challenged. Hitler even wrote a book about it! It should have been apparent that the ideas of fascists and nazis could not exist in our world without an inevitable conflict with our democratic ideals and aspirations. The two opposing philosophies of national organization and national life cannot co-exist. Why did we not appreciate this sooner? Why were we not ready for the inescapable conflict?

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Perhaps one reason lies in the fact that to be sensitive to the dangers that threaten one's own security and well-being, one must first be conscious of that security and well-being; and we as a nation, I suspect, have not been fully conscious of the elements that, woven together, constitute the fabric of our life. We have not appreciated as we should the struggles of past years out of which have been forged the rights and liberties that now are ours. Specifically, why should we expect college freshmen—or any other citizens—who cannot name even four of the articles constituting our Bill of Rights to be super-sensitive to changes in the world that threaten those invaluable possessions? What do freedoms mean to men and women who are not aware how those freedoms have been achieved, much less what they actually are? Had we as a people made the history of our nation an integral part of ourselves, and of our lives, we would have been, I believe, more quickly alert to the impending dangers that we faced. Battleships and forts, guns and airplanes are all important, but most important of all in a truly impregnable national defense is the loyalty to country that comes from a deep understanding of what that country means, really means, to the individual citizen.

Finally, I would likewise suggest that true internationalism can be built only upon the basis of a knowledge of the past of one's own country, in relation to other countries. In another connection I recently put this idea in these words: "Nations today can be great only as their collective attitudes are tolerant, only as their outlook is inclusive, and only as they are characterized by cooperative-mindedness." And I went on to add that a major responsibility of every citizen is the acquisition of the historical perspective that enables him to see the problems of the present in the light of the past. With perspective established, the problems of the future can also be approached. How else but by steeping himself in the historical past can one acquire the perspective with which to face the future? To appreciate the full significance of such a book as Mr. Wendell Willkie's "One World," it is necessary to appreciate fully the significance of the national development of one's own country. That is why I so strongly believe that as we turn our post-war attention to the gigantic job of building a world in which order will prevail on an international scale, we must first build in our minds a clear conception of what our own national life really signifies. To be a good citizen of the world, one first must be a good, that is to say, an appreciative and informed citizen of his own country.

I realize fully that there are many aspects of the subject I am discussing that call for further clarification. But, frankly, I am not interested in minute analysis this morning. My single desire is to lay before you, as students who have achieved signally in your years at the University, one idea, with the hope that you will give it thought and act upon it. As citizens of tomorrow how thoroughly have you made the knowledge of your country's greatness a part of yourself?

May I, in closing, call to your attention a remarkable little volume in the Pocket Book series. It is The Pocket History of the United States, by Allan Nevins (one of the authors of the test to which I referred earlier) and Henry Steel Commager. In the preface to their book these authors write: "There is no parallel in modern history to the drama of swift expansion of a small and feeble people across a continent, the growth of a few struggling colonies into the most powerful of nations. Our mountain passes are as picturesque as feudal castles,

our town meetings as majestic as royal courts, the swarming of peoples into the interior as exciting as the expansion of the Normans or the Saracens, and our national heroes—Washington, Jefferson, Lincoln—can stand comparison with the heroes of any other people. And to a generation engaged in a mighty struggle for liberty and democracy, there is something exhilarating in the story of the tenacious exaltation of liberty and the steady growth of democracy in the history of America."

All that these authors are saying is true: The story is there if we would but learn to appreciate it. But again we must ask, How completely do our people know and appreciate that story? How thoroughly do we know our heroes or the contributions for which we are indebted to them? How adequately do we know the geography in terms of which our history has been fashioned? How fully do we understand the principles for which so much blood has already been spilled, and so many human lives lost? How well do we comprehend what the struggle for democracy and liberty has meant, and do we know in specific terms the issues and situations around which that struggle took place? Is history—our history—real to us? Or is it a vague abstraction, ill-defined, indefinite, and blurred in detail?

What is YOUR answer to those questions? You are honor students, and your answers are important. Are there lingering doubts in your mind with respect to your own understanding of your country's past? If so, let me suggest that you hasten to the bookstore and purchase, for the sum of twenty-five cents, a copy of The Pocket History of the United States. I mention this book especially not because it is the only readable story of the development of the United States, but because in price it is within the reach of every student. Buy it. Then read it, and think upon the wonders and the glories, not of Greece, not of Rome, but of your own United States.

I should be loath to think that graduates of this University, especially those whom we honor on this occasion, are going forth from a college campus as ignorant and confused, as misinformed and historically illiterate as were most of those 7,000 college students of whom I spoke earlier. I am not trying to convince you that ignorance of itself is alarming, but rather that an ignorant democracy cannot be a strong democracy. One really fights only to the extent that he knows with some definiteness exactly what he is fighting for. And such an understanding comes only through the background of knowledge which a familiarity with history provides. At this late moment in your educational career, I can only hope that all of you, honored students, have completed programs of study planned in the light of that truth. And as I close, may I congratulate each and every one of you regardless of the academic achievement which has been yours here. To study at the University of Minnesota is a high privilege. The members of the faculty, but more than that, the citizens of Minnesota, each of whom has played a part in making your achievement possible, have a right to expect something substantial in return. A trained mind may produce material things to compensate for the training, but this is not enough. The University of Minnesota adds to the purely material objective of college training, the indispensable one of making good citizens. You will discharge your obligation to all of us when and to the extent that, in the years to come, you prove to be sensitive, tolerant, understanding, loyal, just, alert, informed—a member of that increasing body known as "men of good will"—a proud holder of that most distinguished title we in America confer, "citizen."