

*The Bulletin
of the University of
Minnesota*

*The President's Report for the Year
1918-1919*



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THE PRESIDENT'S REPORT
FOR THE YEAR 1918-19

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THE PRESIDENT'S REPORT

To the Board of Regents of the University of Minnesota:

GENTLEMEN: As President of the University, I have the honor of submitting to you my second annual report covering the period from August 1, 1918, to June 30, 1919. In accordance with an act of the Legislature, approved on April 4, 1919, changing the fiscal year of the state, this report does not deal with the month of July, 1919, and therefore covers a period of only eleven months.

The year under review has been very abnormal in several respects. At its beginning the outstanding, overwhelming fact was the war. Our country was facing grimly the most gigantic task it had ever assumed. Just at the close of August came the news that the War Department had decided to establish the Students' Army Training Corps in practically all of the colleges and universities of the land. Only those who lived through the days of the S. A. T. C. can fully understand how completely and fundamentally the University was transformed by the plans of the War Department. Coincident with the reorganization of the University for military purposes came the epidemic of influenza which introduced many new elements of uncertainty and actually compelled the postponement of the opening of the University.

The demands of the Government upon the University for many of the most valuable members of its staff were equally serious from the point of view of efficient organization and administration. While the full list of those who were absent on leave is given elsewhere in this report, it is significant to observe here that during the fall months when our administrative burdens were doubtless heavier than at any other time in the entire life of the University, four of our deans were absent, being engaged in government service. I allude to Deans Ford, Vance, Coffman, and Jones. In addition to this fact, it should also be noted that Dean E. E. Nicholson was absorbed chiefly with the duties of Educational Director for the S. A. T. C. of this "region," including the five states of North and South Dakota, Iowa, Nebraska, and Minnesota. Great credit is due to the whole staff for the splendid way in which it grappled with the entire situation.

Any one who reads the reports of the various deans, directors, and other administrative officers which appear in this volume can not fail to be impressed by the magnitude and variety of the activities of this University. As a whole, they establish the conviction that a host of well-trained and efficient scholars and experts are endeavoring to serve the State of Minnesota in every possible manner. I venture the assertion that few citizens realize even faintly the full significance of all the enterprises which the University is conducting for the state. The average citizen knows in general what a university is intended to do, but he has little comprehension of the ramifications of the work of the various schools, colleges, stations, hospitals, and extension services maintained by the University. For example, in such fields as agriculture and general extension, in the work of both the geological and zoological surveys, much is being done for the welfare of all of the citizens of the state, of which few people have any accurate knowledge.

The year under consideration is marked by two new undertakings. The inauguration of the University Health Service under the leadership of Dr. John Sundwall was extremely fortunate in view of the epidemic of influenza. The organization of the new School of Business meets a demand which has been vigorously expressed in recent years by many important organizations of the state.

The year is notable above all else because of the wise and generous response which the Legislature made to our requests.

It is fitting to record here our genuine appreciation of the services of the Honorable C. G. Schulz, for ten years a Regent, *ex officio*, of this University while serving as Superintendent of Education. He gave unstintedly of his time and thought to the affairs of this institution. He shared fully in all of the deliberations of the Board of Regents, and by his wisdom and counsel assisted in the establishment of wise policies and sound traditions. He was succeeded by the Honorable J. M. McConnell who first sat with the Board of Regents on January 24, 1919. In the few months which have since elapsed, Mr. McConnell has given ample evidence of his full devotion to the educational interests of the state as a whole, of his expert knowledge of the problems with which we are concerned, and of his sound judgment in dealing with administrative affairs.

LEGISLATIVE ACTIONS

The University went before the forty-first session of the Legislature with a sharply defined program. It took the firm position that adequate provision for salaries was the first need of the University. Accordingly it proposed that the general maintenance fund be increased from \$1,365,000 to \$1,865,000 annually.

Likewise the building situation was set forth comprehensively and the needs of the University for the next decade, so far as they could be anticipated, were outlined. The Board of Regents proposed a ten-year building program to be financed by a 35/100 mill tax. Within this plan was included a proposal to establish dormitory systems for men and for women on both campuses.

The Board of Regents at a meeting held on November 14, 1918, definitely approved the plans as a whole which included (1) the request of an additional million dollars for the maintenance fund, (2) the comprehensive building program involving in ten years a total expenditure of \$5,600,000, (3) the policy looking to the erection of dormitories and (4) the establishment of the maximum of requests for the biennium 1919-21 at five and a half millions. At the meeting of the Board on January 24, 1919, the proposed bill for the comprehensive building plan was approved and the pamphlet entitled *The Needs for the Biennium 1919-21* was adopted. At this same meeting it was decided to amend the estimate by the request for an emergency appropriation of \$75,000 for a Boys' Dormitory for the School of Agriculture at Morris.

Any one interested in the details which lie back of these proposals is referred to the *Annual Report of the President for 1917-18* (pages 6-18) as well as the booklet entitled *The Needs for the Biennium*.

It is a pleasure to report that the Legislature made the following appropriations:

1. For general maintenance (annual).....	\$1,865,000
For buildings (immediately available).....	175,000
For buildings (1919-20).....	328,000
For land, roads, and paving.....	49,000
	<hr/>
	\$2,417,000
Mill tax (estimated).....	365,000
	<hr/>
Total for 1919-20.....	\$2,782,000

2. For the comprehensive building plan beginning July 1, 1920, the sum of \$560,000 annually or \$5,600,000 for the decade. In order to make these statements perfectly clear and to compare them with the appropriations for 1917, the following table is presented:

	COMPARISON OF LEGISLATIVE APPROPRIATIONS IN 1917 AND 1919			
	Granted 1917-18	Granted 1918-19	Granted 1919-20	Granted 1920-21
Mill tax	\$ 351,775	\$ 360,000	\$ 365,000	\$ 365,000
General maintenance	1,365,000	1,365,000	1,865,000	1,865,000
Buildings	125,250		503,000	560,000
Lands and roads.....			49,000	
	<hr/>	<hr/>	<hr/>	<hr/>
Total for each year..	\$1,842,025	\$1,725,000	\$2,782,000	\$2,790,000
		1,842,025		2,782,000
		<hr/>		<hr/>
Total for each biennium.....		\$3,567,025		\$5,572,000

In connection with this table it is important to observe (1) that during the last biennium all building projects were suspended owing to the war and (2) that the increase of one million dollars in the appropriation for general maintenance was intended to meet squarely the general salary situation.

3. A distinctly new principle was introduced this year in making our requests to the Legislature. On January 24, 1919, the Board of Regents authorized the plan of segregating from our regular budget estimates our requests for appropriations to meet federal funds appropriated under such bills as the Smith-Lever, the Smith-Hughes, and the proposed Smith-Howard bills.

The increased appropriation necessary for maintaining the county agent work was included in this proposal. It is of vital importance here to observe that if the State of Minnesota is to avail itself of the privileges offered under these federal bills it must be prepared annually to increase its appropriations for these purposes. For example, during the past biennium the appropriation for county agents was \$17,000 annually. For the coming biennium, \$86,000 annually was needed. In reality the University is in no sense responsible for these increased demands and it seemed wise to segregate these requests and present them in a separate bill. Such a bill was authorized by the Board of Regents on February 15, 1919, and was approved by the Legislature on April 15. By this bill the sum of \$86,000 annually was made available for county agents. In addition the sum of \$30,000 annually was provided for Agricultural Extension work. These combined sums made a total appropriation of \$232,000 for the biennium.

4. During the existence of the Students' Army Training Corps adequate housing facilities for the soldiers were required by the contracts with the War Department. These contracts were valid until June 30, 1919. The early signing of the armistice and the speedy demobilization of the S.A.T.C. in December completely altered the plans of the War Department. The contracts were cancelled and adjustments were made on a reasonable basis. Moreover, the epidemic of influenza prevented the Government from sending the full quota of men for the new barracks at the Farm campus. Accordingly, as reimbursement of the University Maintenance Fund—"to provide for taking over by the University the buildings erected for government work and for cost of moving barracks and making necessary alterations"—the sum of \$32,000 was made immediately available by the Legislature.

5. In accordance with the principle established in paying the tuition fees of veterans in the Spanish-American war and of soldiers who had served on the Mexican border, the last Legislature made provision for the tuition fees of "discharged soldiers, sailors, marines, and Red Cross nurses in the recent world war." A total sum of \$600,000 was provided for this purpose. The act provides that each person may receive "an amount not to exceed \$200." It is available for students "in the University of Minnesota, the state normal schools, and any college in the State of

Minnesota which participated in the Students' Army Training Corps' work, and other colleges and schools in the state for such persons who rendered certain services during war periods."

In view of the fact that when the S.A.T.C. was established the War Department practically commandeered all colleges and universities whether supported by state or private funds, it seemed only fair that students of all institutions maintaining a unit of the S.A.T.C. should participate in the benefits of this bill.

By way of summary, it will be clarifying to present the following table showing the appropriations made by the Legislature for the University.

SUMMARY OF APPROPRIATIONS

For the biennium 1919-21 (see page 8).....	\$5,572,000
To offset federal funds.....	232,000
To reimburse maintenance fund for S.A.T.C. buildings.....	32,000
	<hr/>
Remaining 9 years of comprehensive building plan ending 1930..	5,040,000
	<hr/>
Grand total	\$10,876,000

It is perfectly obvious that the Finance Committee of the Senate and the Appropriations Committee of the House, together with all the members of the Legislature, recognized clearly the importance of the University to the State and of education to any democracy. The wise, generous, and statesmanlike response of the Legislature to our requests lays upon us new and serious obligations. When the representatives of the people actually grant all that the University requests, the only adequate recognition of such provision for our needs is the actual use of the funds for the purposes designated and that, too, always with the determination that every dollar shall be expended wisely and economically.

It is a pleasure to be able to record here that in the actual distribution of the increased maintenance fund the University has complied fully with its statements before the legislative committees. It was there agreed that approximately 75 per cent of the increase in salaries should be awarded to those whose annual salary was \$2,500 or less, and that approximately only 25 per cent should go to those receiving more than \$2,500 annually. When the new budget was actually prepared it was found that

76 per cent of the increase in salaries was apportioned to the lower rankings in the staff.

The funds for the comprehensive building plan are available, beginning July 1, 1920. Consequently no report upon that subject can be made here save to remark that the subject has already been given most careful and prolonged consideration in meetings of the Buildings and Grounds Committee of the Board of Regents and of the Board as a whole.

THE STUDENTS' ARMY TRAINING CORPS

In the years to come, when some historian seeks to portray the life and works of the University of Minnesota, he will in all probability set down the year 1918-19 as the most unusual period in all the early history of this institution. As a matter of fact, the University as such ceased to function and in its place was established a military camp.

It must be remembered that in August, 1918, the country was settling down in a determined fashion to fight, if need be, a long war and to win a victory for decency and democracy. Every element of strength in the nation was mobilized for war purposes. Our one task was to win the war. As a part of this general policy the War Department decided late in August, 1918, to utilize the equipment and staff of every reputable college and university for the training of soldiers. It must be remembered that the draft law calling into service all males physically fit, between the ages of 18 and 45, went into operation on August 31, 1918. Consequently, the universities whose students range in age from 18 to 25 would practically be deserted. On August 30 and 31 the War Department announced its plans to a large group of university and college presidents summoned to Fort Sheridan. In a word, the Reserve Officers' Training Corps for the time being was to be replaced by the Students' Army Training Corps. Every student over 18 years of age was to be an actual soldier in the United States Army and to receive \$30 a month as pay. He was to live under strict military discipline in barracks. His uniform, housing, and subsistence were to be paid for by the Government. He was to pursue a combined military and academic course prescribed by the War Department through its Committee on Education and Special Training. There were to

be two sections of the Corps: (1) Section A, for regular collegiate and professional students and (2) Section B, for the vocational training of drafted men not prepared educationally for Section A. The Commanding Officer, representing the War Department, naturally had full control of all the student-soldiers. The regular administrative officers of the University and the teaching staff coöperated in providing the academic and technical instruction.

The official records of the University show that prompt and vigorous action at every point followed the receipt of instructions from Washington. On September 2, the Regents approved the establishment of a unit of the S.A.T.C. On September 4, the contract with the War Department at the rate of \$1.45 per day per man was authorized. This provided \$.45 per day for instruction and \$1.00 per day for housing and subsistence. On the same day the Exposition Building was rented for barracks at the rate of \$1,250 per month. The next day, September 5, arrangements were made for the Maxwell Building, at \$1,700 per month, and certain fraternity houses were taken over for various purposes including headquarters for the officers and for hospitals. On October 9, the University, whose opening had been postponed on account of the epidemic of influenza, was opened for the S.A.T.C., and students under 18 years of age, candidates for admission to the S.A.T.C. who were technically known as "enrolled" students. On October 12, 1918, a naval section of the S.A.T.C. was established. The signing of the armistice on November 11, 1918, completely changed the spirit of the country and the S.A.T.C. was demobilized on December 21 at the close of the fall quarter.

The record is brief and simple, but the work involved was stupendous. The task of preparing in a month's time to receive, to house, to feed, and to teach four to five thousand men is no small task. At the same time the University's normal work for civilian students—all of the women, in addition to the men under 18 years of age or physically unfit for military duty—must be organized and maintained. Moreover, the public and the students must be fully informed of the new plans. The University issued two new bulletins, one describing as accurately as possible the details of the S.A.T.C., and the other outlining the new courses of study offered under the new conditions. When one

realizes that all schedules, all programs, all courses, and all official bulletins were brushed aside in one quick stroke and an entirely new organization was set up over night, it gives some understanding of the complications and difficulties which inevitably arose.

It is not possible to express adequately in a written report the appreciation due to the entire staff of the University. Everyone cooperated to the fullest extent. Destructive criticism was at a minimum. Every member of the University accepted the situation as a part of his patriotic duty. All of the Deans who were not absent in Government service, the Comptroller, the Registrar, and the Secretary of the Department of Agriculture, deserve high commendation for the administrative skill and ability demonstrated in the midst of new tasks. Professor A. B. White was placed in charge of the "War Aims" course and organized and conducted the work most effectively. Assistant Professor Burkhard was responsible for the supervised study rooms and contributed very largely to the success of that important part of the students' work. Assistant Professor Barton wisely administered the plans involved in transforming the campus into a military reservation and issuing passes and buttons to all civilian members of the University.

No report regarding the S.A.T.C. would be complete without a brief discussion of the merits of the enterprise. It was a gigantic experiment. The idea was hastily conceived and there was little time for maturing carefully the plans by which it was to be carried out. That the originators of the S.A.T.C. were actuated by the highest motives no one can seriously question. That better results would have been obtained if the experiment could have been carried on for a longer period of time, no one can doubt. That the results were far from satisfactory every one who was associated intimately with the enterprise will promptly concede.

In a word, a true university can not be a military camp. The underlying spirit of an institution of higher learning is freedom. It is a place where scholars seek for the truth. A military camp is a synonym for obedience and strict compliance with orders. The program of work was too heavy for the average student. The combination of military drill requiring eleven hours each week with the heavy academic schedule proved unfortunate.

Military duties constantly interfered with academic responsibilities. In fact the work of the classrooms was demoralized. Any one who reads the Reports of the Deans in this volume will find a unanimous opinion on this subject. Speaking from the standpoint of scholarship, the S.A.T.C. was an unqualified failure.

It should be recorded here with the greatest possible emphasis and clearness that dual administrative control was responsible for much of the difficulty. Our situation at the University of Minnesota in this respect was excellent compared with other institutions but any one of administrative experience knows instinctively that dual authority, especially for student-soldiers, is intolerable. In the future, any plans looking to the closer correlation of academic and military training must not involve this impossible feature of divided responsibilities or it can be easily anticipated that the universities of the country will unanimously oppose the project. Any one desiring a fuller discussion of the subject should consult our official reports on the S.A.T.C. on file both at Washington in the office of the Committee on Education and Special Training of the War Department, and also in the office of the President of the University. The Report on Section A was prepared by Dean J. B. Johnston, of the College of Science, Literature, and the Arts, and the Report on Section B, by Dean R. W. Thatcher, of the Department of Agriculture.

MILITARY TRAINING

On January 24, 1919, the Board of Regents authorized the establishment of the Reserve Officers' Training Corps which was speedily reorganized on its former basis. During the latter part of this year the War Department has proposed to the University the organization of all of the various units of the R.O.T.C. including the Field Artillery, the Coast Artillery, Signal Corps, Motor Transport Corps, and Ordnance Corps. After careful deliberation and conference with various military officers representing the various corps, the Board of Regents voted, on April 22, 1919, to accept tentatively, pending the revision of General Orders 49, a unit of the Coast (Heavy) Artillery and a unit of the Signal Corps in addition to the regular Infantry work. Until the actual revision of General Orders 49 is received, it is not possible to state the full conditions under which the R.O.T.C.

will be conducted. In general it may be said that all freshmen and sophomores will be required to take three hours of military training each week. Their uniforms will be provided by the War Department. For those who elect the advanced work in the junior and senior years, five hours a week will be occupied in military training. The student will receive in these two upper years not only his uniform and equipment but also commutation for subsistence at the rate of forty cents per day.

It goes without saying that military training in our universities is to be fostered. As a Land Grant Institution, we must offer it. The present plans for the R.O.T.C., where the student receives two or four years of military drill without being under strict military discipline and without living in barracks, is highly to be commended, especially if it is supplemented by intensive military training in the summer camps where full military discipline may be rigidly maintained. This feature of the R.O.T.C., now in actual operation, seems to point the way out in this difficult question of the closer correlation of military and university training.

CHANGES IN THE FACULTIES

Appointments.—The following appointments to positions of professorial rank were made during the period under review:

Major Ralph R. Adams, Professor of Military Science and Tactics.

Colonel Frank H. Burton, Professor of Military Science and Tactics.

Officer United States Army; 20 years.

Noel T. Dowling, Professor of Law

B.A., 1909, Vanderbilt University; M.A., 1911, Columbia University; LL.D., 1912, Columbia University. Member Department of Legislation Columbia University Law School, 1912-17; assigned from February 1914 to August 1915 as Special Counsel of U. S. Industrial Commission; admitted to New York Bar, 1913; Associate Counsel Bureau War Risk Insurance, October, 1917; Major, Judge Advocate, U. S. Army, October, 1918, to February, 1919; Assistant Director Bureau War Risk Insurance, March 1919 to July 1919.

Clarence H. Eckles, Professor of Dairy Husbandry and Chief of the Dairy Husbandry Division.

B.S.A., 1895, Iowa State College; M.S., 1897, Iowa State College; D.Sc., 1916, Iowa State College. Assistant, Dairy Husbandry, Iowa

State College, 1896-97; Dairy Bacteriologist, Iowa State College, 1897-1901; Professor of Dairy Husbandry, University of Missouri, 1901-19.

Dunham Jackson, Professor of Mathematics.

B.A., 1908, Harvard University; Ph.D., 1911, University of Göttingen (Travelling Fellowship). Instructor in Mathematics, Harvard University, 1911-16; Assistant Professor of Mathematics, Harvard University, 1916-19.

L. I. Knight, Professor of Plant Physiology.

B.A., 1901, University of Illinois; B.S., 1909, University of Chicago; Ph.D., 1913, University of Chicago. Principal of high school, Washington, Illinois, 1903-5; Superintendent of Schools, Washington, Illinois, 1905-7; Assistant in Botany, University of Illinois, 1908-9; Associate Professor of Botany and Forestry, Clemson College, 1909-10; Assistant in Botany, University of Chicago, 1910-13; Instructor in Plant Physiology, University of Chicago, 1915-19.

Walter H. Peters, Professor of Animal Husbandry.

B.S.A., 1908, Iowa State College. Professor of Animal Husbandry, Manitoba Agricultural College, Winnipeg, 1908-14; Animal Husbandry, North Dakota Experiment Station, Fargo, 1914-18.

Raymond Sies, Professor of Education.

B.A., 1907, University of Iowa. Professor of Educational Administration, University of Pittsburgh, 1910-18; Secretary of the Graduate Council, University of Pittsburgh, 1917-18.

Henry W. Vaughn, Professor of Animal Husbandry.

B.Sc., 1908, Ohio State University; M.Sc., 1909, Ohio State University. Instructor in Animal Husbandry, 1909-10; Assistant Professor in Animal Husbandry, 1910-12, Ohio State University; Assistant Professor in Animal Husbandry, 1913-15; Associate Professor in Animal Husbandry, 1915-18; Professor in Animal Husbandry, 1918-19, Iowa State College.

Nathaniel E. Griffin, Professorial Lecturer in English.

B.A., 1894, Johns Hopkins University; Ph.D., 1899, Johns Hopkins University. University of Iowa, 1899-1900; Wells College, 1900-1903; University of Vermont, 1903-4; Johns Hopkins University, 1904-5; Princeton University, 1905-19.

W. A. Jones, Professorial Lecturer in Nervous and Mental Diseases.

M.D., 1881, University of New York State. Graduate work in clinics of Berlin, Vienna, and London. Clinical Professor, Nervous and Mental Diseases, Medical School, University of Minnesota, 1896.

Alfred J. Pearson, Professorial Lecturer in Romance Languages.

B.A., Bethany College; Ph.D., 1896, Yale University. Professor of English Language and Literature, Upsala College, 1896-98; Professor of English Language and Literature, Gustavus Adolphus College, 1898-1907; Professor of German and Head of the Department of Modern Languages, Drake University, 1907.

John H. Sherman, Professorial Lecturer in Marketing.

B.A., 1911, Cornell University; Special Course in Law, Georgetown University, 1914-15. Economics and Market Channels, National School of Domestic Science, Washington, D. C., 1915-16.

Robert E. Cushman, Associate Professor of Political Science.

B.A., 1911, Oberlin College; Ph.D., 1915, Columbia University. Teacher of History and Civics, Oberlin Academy, 1911-13; Instructor in Political Science, University of Illinois, 1915-18; Associate Professor of Political Science, University of Illinois, 1918-19.

R. M. Elliott, Associate Professor of Psychology.

B.A., 1910, Dartmouth University; M.A., 1911, Harvard University; Ph.D., 1913, Harvard University. Sheldon Fellow of Harvard University, 1913-14; Instructor of Psychology, Harvard University, 1914-15; Instructor, Yale University, 1915-18; Psychologist, U. S. Army, commissioned as Captain Sanitary Corps; Psychologist, Walter Reed Hospital, Reconstruction Department, Washington, D. C.

Manuel C. Elmer, Associate Professor of Sociology.

B.S., 1911, Northwestern College; M.A., 1913, University of Illinois; Ph.D., 1914, University of Wisconsin. Professor of Sociology and Economics, Fargo College, 1914-16; Assistant Professor of Sociology, University of Kansas, 1916-18; Associate Professor of Sociology, University of Kansas, 1918-19.

William S. Foster, Associate Professor of Psychology.

B.A., 1908, Cornell University; Ph.D., 1913, Cornell University. Assistant in Psychology, Cornell University, 1910-12; Research Assistant in Psychology, Cornell University, 1912-13; Instructor in Psychology, Cornell University, 1913-15; Assistant Professor of Educational Psychology, Cornell University, 1916-17; Head of Department of Psychology, Summer Session, 1915-16; Chief Psychological Examiner, Camp Greenleaf, 1917; Inspecting Psychological Examiner, 1918; Travelling Military Morale Officer, 1918-19; Major Sanitary Corps, U. S. A., General Staff.

Frederick B. Garver, Associate Professor of Economics.

B.A., 1909, University of Nebraska; Ph.D., 1917, University of Chicago. Instructor in Political Economics, University of Chicago, 1912, 1913-14; Instructor in Economics, Leland Stanford Junior University, 1914-15; Assistant Professor of Economics, Leland Stanford Junior University, 1915-19.

Raymond B. Moley, Associate Professor of Political Science.

Ph.B., 1906, Baldwin University; M.A., 1912, Oberlin College; Ph.D., 1916, Columbia University. Instructor in History, West High School, Cleveland, 1912-14; Instructor in Political Science, Western Reserve University, 1916-18; Assistant Professor of Political Science, Western Reserve University, 1918-19.

Bruce Mudgett, Associate Professor of Economics.

B.A., 1908, University of Idaho; Ph.D., 1913, University of Pennsylvania. Instructor in Insurance, University of Pennsylvania, 1910-17; Assistant Professor of Insurance, University of Washington, 1917-19.

LeRoy S. Palmer, Associate Professor of Agricultural Biochemistry.

B.S., 1909, University of Missouri; M.A., 1911, University of Missouri; Ph.D., 1913, University of Missouri. Assistant Professor of Dairy Chemistry, University of Missouri, 1913-19.

• Major Jere Baxter, Assistant Professor of Military Science and Tactics.

Sixteen years of service in United States Army.

Lieutenant Henry C. Bertelsen, Assistant Professor of Military Science and Tactics.

B.A., 1916, Des Moines College. Assistant Professor, Department of Industrial Arts, Des Moines College, 1915-16; Head of Department of Industrial Arts, Des Moines College, 1916-17.

Alma Binzel, Special Lecturer in Home Economics with rank of Assistant Professor.

B.S., 1906, Columbia University; M.A., 1919, Columbia University. Instructor, Kindergarten and Primary work, Milwaukee Normal and City Schools, 1894-1903; Director of Department, Stout Institute, 1906-9; Instructor, Brigham Young University, 1909-10; Instructor, Winona State Normal School, 1910-13; Assistant Superintendent, Missoula Public Schools, 1913-15; Instructor, Northrop Collegiate School, 1916-19.

Captain Arthur E. Clark, Assistant Professor of Military Science and Tactics.

Small Firing Arms, Camp Perry, Ohio, 1918; Infantry School of Arms, Camp Benning, Georgia, 1918-19.

J. C. Cort, Assistant Professor of Dairy Husbandry.

B.S., 1914, Iowa State College; M.S., 1915, Iowa State College. Dairy Extension, Iowa State College, 1915-18.

Z. C. Dickinson, Assistant Professor of Economics.

B.A., 1914, University of Nebraska. Assistant Instructor in Economics and Tutor in Division of History, Government, and Economics, Harvard University, 1916-17.

Mabel R. Fernald, Assistant Professor of Psychology.

B.A., 1906, Mount Holyoke College; Ph.D., 1910, University of Chicago. Instructor in Psychology, Chicago Normal School, 1910-14; Director Laboratory of Social Hygiene, Bedford Hills, 1914-18; Psychologist, Office of Surgeon General, Washington, D. C.

Ross L. Finney, Assistant Professor of Educational Sociology.

Ph.B., 1896, Upper Iowa; S.L.B., M.A., Ph.D., 1899-1902, Boston University. Pastorates, Minnesota M. E. Conference, 1902-9; Philosophy and Economics, Illinois Wesleyan University, 1909-14; Education, State Normal School, North Dakota, 1914-19.

Boyd S. Gardner, Assistant Professor of Dental Surgery on the Mayo Foundation.

D.D.S., 1903, University of Michigan; Graduate School of Medicine, Chicago, 1915-16. Conducted clinics in Germany, England, and France, 1913-14; Dental Surgery and Anesthesia, University of St. Louis, 1917-18.

Carl Herrick, Assistant Professor of Mathematics and Mechanics.

M.E., 1902, University of Minnesota. Instructor in Machine Design, Gas Engine Design, and Steam Power Plant Engineering, University of Minnesota, 1907-10; American Hoist and Derrick Company, St. Paul.

George E. Holm, Assistant Professor of Agricultural Biochemistry.

B.S., 1914, Carleton College; M.S., 1916, University of Minnesota. Research work, Chemical Warfare Service, First Lieutenant.

C. L. Holmes, Assistant Professor of Agricultural Economics.

B.A., 1907, University of Michigan. Secondary school work, 1907-14; Instructor, Agricultural Economics, University of Wisconsin, first semesters of 1915-16 and 1916-17.

Lieutenant-Colonel West C. Jacobs, Assistant Professor of Coast Artillery Unit of the R.O.T.C.

Instructor in French U. S. M. A., 1911-12; Assistant Professor of French, U. S. M. A., 1912-15.

Oscar W. Junek, Assistant Professor of Americanization.

Ph.D., 1915, University of Prague. In charge of Industrial School, B. F. Goodrich Company, 1917-19.

Harry H. Knight, Assistant Professor of Entomology.

B.Pg., 1910, State Normal School, Springfield; B.S., 1914, Cornell University; Ph.D., 1917, Cornell University. Entomologist, Genesee County, New York Fruit Growers Association, 1913-16. Spent April to October of each year in field with fruit growers.

Robert C. Line, Assistant Professor of Business Organization.

B.A., 1910, University of Montana; M.A., 1912, Harvard University. Three years graduate work at Harvard University; taught three years at Mt. Holyoke College.

Gustav A. Lundquist, Assistant Professor of Rural Sociology.

B.A., 1901, Gustavus Adolphus College; M.A., 1907, Harvard University. Assistant Professor of History and Economics, Gustavus Adolphus College, 1901-5; Head of Department of Economics, Manual Training School, Pittsburg, 1907-9; Head of the Department of History and Social Science, Central High School and Schenley High School, 1909-18.

Forest W. McGinnis, Assistant Professor of Agronomy.

B.S., 1912, Oregon State University; M.S., 1918, Cornell University.

Captain Allen T. Newman, Assistant Professor of Military Science and Tactics.

B.Sc., 1912, University of Nebraska; M.A., 1917, University of Minnesota. Assistant, School of Chemistry, University of Minnesota, 1915-17; U. S. Army, 1917-18.

Julia O. Newton, Assistant State Leader of Home Economics Extension with rank of Assistant Professor.

B.A., 1903, University of Minnesota. Minnesota High Schools, 1903-11; State Normal and Industrial School, Ellendale, North Dakota, 1911-13; Agricultural Extension Department, North Dakota Agricultural College, 1914-19; State Home Denin Leader, 1918-19.

Howard S. Noble, Assistant Professor of Accounting.

B.A., 1914, Simpson College; M.B.A., 1919, Harvard University. West High School, Des Moines, 1914-15; Central McKinley High School, St. Louis, 1915-17.

Lieutenant Ernest A. Nuoffer, Assistant Professor of Military Science and Tactics.

E. Maud Patchin, Assistant Professor of Textiles and Clothing.

B.S., 1917, Columbia University. Instructor, Domestic Arts, Public Schools, Spokane, Washington, 1913-16; Instructor in Domestic Arts, Normal School, Pittsburgh, Kansas, 1917-18.

Arthur F. Payne, Assistant Professor of Trades and Industrial Education.

B.S., 1915, Bradley Polytechnic Institute; Ph.B., 1916, University of Chicago; M.A., 1917, Columbia University; Diploma as Director of Vocational Education and Industrial Arts, 1917, Teachers' College. Director, Columbia School of Arts and Crafts, 1905-7; Assistant Professor, Manual Arts, Bradley Polytechnic Institute, 1909-16; Assistant Professor, Industrial Education, University of California, Summer Session, 1915; Director, Industrial Education, Vacation Schools, Chicago, 1916; Instructor, Pratt Institute, Evening Trade Classes, Brooklyn, 1916-17; Surveyor in charge of Survey of Dean Schneider's Co-operative and Continuation Schools, Industrial Education Survey, New York, 1917; Executive Secretary, Military Training Commission, New York, 1917; Supervisor Practice Teaching Industrial Arts, Teachers' College, 1916-17; Associate Superintendent and Director Vocational Education, Johnstown, Pennsylvania, 1917; Field Consultant, Training and Labor Ordnance Department, U. S. Army, 1918; Surveyor of Schools of Philadelphia for War Department, U. S. Army, 1918.

Norman J. Radder, Assistant Editor and Assistant Professor of Rural Journalism.

B.S., 1917, University of Wisconsin. University of Arkansas, 1917-19; newspaper work on Kansas Star, Milwaukee Journal, and Country Gentleman.

Thomas H. Sanders, Assistant Professor of Accounting.

B.Com., 1905, Birmingham University, England; M.Com., 1914, Birmingham University; Ph.D., 1918, passed generals at Harvard. Private

Secretary, Rudg-Whitworth, Coventry, England, 1905-10; Teacher of Commercial Practices, Higher Commercial School, Yamaguchi, Japan, 1911-17; worked for Patterson, Teele, and Dennis, Accountants, Boston, 1918.

Hugh A. Snapp, Assistant Professor of Mathematics and Mechanics.

B.A., 1893, Heidelberg of Tiffin; LL.B., 1900, University of Ohio; M.A., 1915, University of Ohio. Mathematics and Mechanics, Heidelberg, 1894-95; Mathematics and Mechanics Agriculture, 1909-14; High School, Ohio, 1892-94; 1900-1901 Germantown, Tiffin, Mansfield; Professorial work 1901-4; Civil Engineer, 1915-18.

Mrs. Sara H. Van Dusen, Secretary of the Department of Correspondence, with rank of Assistant Professor.

B.S., 1899, University of Wisconsin; M.A., 1914, University of Wisconsin. Recorder of Correspondence Study, Extension Division, University of Wisconsin, 1909-18.

Quincy Wright, Assistant Professor of Political Science.

B.A., 1912, Lombard College; M.A., 1914, University of Illinois; Ph.D., 1915, University of Illinois. Fellow, University of Pennsylvania, 1915-16; Assistant and Instructor, Harvard University, 1916-19.

Promotions.—G. Bachman, from Associate Professor to Professor; Roy G. Blakey from Associate Professor to Professor; William Boss from Acting Chief to Professor of Farm Engineering, Chief of the Division of Farm Engineering and Chairman of the Agricultural Engineering Group; G. A. Damon from Associate Professor to Professor; C. A. Griffith from Associate Professor to Professor; Frank F. Grout from Associate Professor to Professor; H. K. Hayes from Associate Professor to Professor; W. F. Lasby from Associate Professor to Professor; H. A. Maves from Associate Professor to Professor; E. L. Newcomb from Associate Professor to Professor; J. I. Parcel from Associate Professor to Professor; A. G. Ruggles from Associate Professor to Professor; A. S. Wells from Associate Professor to Professor; F. E. Balmer from Assistant Professor to Associate Professor; L. B. Bassett from Assistant Professor to Associate Professor; Alice Biester from Assistant Professor to Associate Professor; Francis G. Blake from Assistant Professor to Associate Professor; John D. Black from Assistant Professor to Associate Professor; W. L. Boyd from Assistant Professor to Professor; Frederic K. Butters from Assistant Professor to Associate Professor; Dr. A. R. Colvin from Assistant Professor to Associate Professor; J. C. Cort from Assistant Professor to Associate Professor; A. S. Cutler from Assistant Professor to

Associate Professor; R. A. Dutcher from Assistant Professor to Associate Professor; T. A. Erickson from Assistant Professor to Associate Professor; M. E. Ernst from Assistant Professor to Associate Professor; Harriet Goldstein from Assistant Professor to Associate Professor; W. F. Holman from Assistant Professor to Associate Professor; Elmer J. Lund from Assistant Professor to Associate Professor; W. A. McKerrow from Assistant Professor to Associate Professor; F. H. MacDougall from Assistant Professor to Associate Professor; J. V. Martenis from Assistant Professor to Associate Professor; P. E. Miller from Assistant Professor to Professor; W. S. Miller from Assistant Professor to Associate Professor; G. A. Moore from Professorial Lecturer to Associate Professor; Ruth S. Phelps from Assistant Professor to Associate Professor; H. B. Roe from Assistant Professor to Associate Professor; C. H. Rogers from Assistant Professor to Associate Professor; F. B. Rowley from Assistant Professor to Associate Professor; W. T. Ryan from Assistant Professor to Associate Professor; May Secrest from Assistant Professor to Associate Professor; J. F. Shellman from Assistant Professor to Associate Professor; S. C. Shipley from Assistant Professor to Associate Professor; C. F. Shoop from Assistant Professor to Associate Professor; Marion Weller from Assistant Professor to Associate Professor; B. G. Anderson from Instructor to Assistant Professor; P. A. Anderson from Instructor to Assistant Professor; R. M. Barton from Instructor to Assistant Professor; Raymond Brink from Instructor to Assistant Professor; T. M. Broderick from Instructor to Assistant Professor; Clara Brown from Instructor to Assistant Professor; A. J. Carlson from Instructor to Assistant Professor; R. C. Dahlberg from Instructor to Assistant Professor; Louis E. Daugherty from Instructor to Assistant Professor; W. P. Dyer from Instructor to Assistant Professor; I. W. Geiger from Instructor to Assistant Professor; G. G. Glick from Instructor to Assistant Professor; E. O. Hanson from Instructor to Assistant Professor; C. A. Herrick from Instructor to Assistant Professor; James T. Hillhouse from Instructor to Assistant Professor; Dr. E. J. Huenekens from Instructor to Assistant Professor; A. C. James from Instructor to Assistant Professor; James A. Johnson from Instructor to Assistant Professor; P. S. Jordan from Instructor to Assistant Professor; Karl S. Lashley from Instructor to As-

sistant Professor; Georgina Lommen from Instructor to Assistant Professor; G. A. Maney from Instructor to Assistant Professor; Maude Miller from Instructor to Assistant Professor; J. A. Myers from Instructor to Assistant Professor; W. C. Naegeli from Instructor to Assistant Professor; F. H. Poppe from Instructor to Assistant Professor; F. C. Rodda from Instructor to Assistant Professor; Martin B. Ruud from Instructor to Assistant Professor; J. B. Torrance from Instructor to Assistant Professor; H. B. White from Instructor to Assistant Professor; F. C. Whitmore from Instructor to Assistant Professor; Harry B. Zimmerman from Instructor to Assistant Professor; J. W. George from Lecturer to Assistant Professor.

Leaves of absence granted during the year.—Dean L. D. Coffman for an indefinite period beginning October 1, 1918, to accept the headship of the Department of Education in the Surgeon General's Office with rank of Lieutenant-Colonel, with the understanding that his University salary will discontinue after November 1, 1917, and with the further understanding that occasional trips from Washington to the University in connection with University business will be at the expense of the University; Professor J. H. Allison leave of absence without pay for nine months beginning January 1, 1919, to undertake Emergency War Work for the Federal Bureau of Forestry; Professor George N. Bauer, leave for the calendar year of 1919, without pay, to take charge of the organization of district War Savings Clubs and Societies; Professor Carleton Brown, sabbatical furlough for the year 1919-20 with half pay; Professor William S. Davis, sabbatical furlough for the spring quarter of 1918-19; Professor Oscar W. Firkins, for one year without pay to assume position as dramatic critic on a magazine; Professor G. B. Frankforter continuation without salary for such period as the Government desires his services; Dr. A. D. Hirschfelder for government service for three months beginning October 23, 1918, without pay; Professor W. E. Hotchkiss for the year 1918-19 with \$1,200 for services to be rendered during the year; Professor F. Jager leave for Red Cross Service in Serbia extended without pay; Professor A. E. Koenig, for the third quarter of 1918-19 and until October 1, 1919, without pay for Y.M.C.A. service; Professor Wallace Notestein leave

to be continued to December 30, 1918, without pay; Superintendent Louise M. Powell, for six months on half salary beginning March 23, 1919; Dr. J. P. Sedgwick for six weeks from January 10, 1919, with full salary; Professor A. V. Storm on sabbatical furlough from January 1, 1919, to August 1, 1919, and from March 1, 1920 to August 1, 1920; Professor Josephine E. Tilden, for the week of February 3, with pay, because of illness; Professor J. S. Young, without pay, from October 8 to November 30, 1918, to act as District Inspector for the War Aims Course; Associate Professor F. W. Peck from May 1, 1919, to January 1, 1920, without salary; Dr. G. W. Reynolds for war service for the period of the war beginning October 20, 1918, without pay; Dr. Henry L. Ulrich on military service for the period of the war, beginning September 1, 1918; Associate Professor Herbert Woodrow for the period of the war in Medical Research of the Air Service beginning September 27, 1918, without pay; Assistant Professor Roy G. Blakey for service with the War Trade Board beginning August 1, 1918, without pay; Assistant Professor Raymond Brink, for the year 1919-20 to lecture at the University of Edinburgh, such leave not to prejudice claim to sabbatic furlough; Assistant Professor S. C. Burton leave of absence for the period of the war for service in the Canadian army, beginning August 1, 1918; Assistant Professor Lillian Cohen for the winter quarter of 1919 on half pay because of illness; Assistant Professor W. W. Cumberland indefinite leave without pay for service with the War Trade Board, beginning August 1, 1918; Assistant Professor R. A. Dutcher for service as captain in the Sanitary Corps for the period of the war, beginning November 10, 1918, without pay; Assistant Professor G. B. Eusterman for military service beginning October 26, 1918; Assistant Professor Charles D. Freeman for the period of the war without pay; Assistant Professor J. T. Hillhouse for a part of the third quarter of 1918-19, with pay, because of illness; Assistant Professor J. Hugh Jackson for week of April 29, 1919, to take examinations at Madison; Assistant Professor Samuel Kroesch for war work from October 1, to November 27, 1918, without pay; Assistant Professor J. C. Masson for military service beginning November 9, 1918; Assistant Professor E. T. F. Richards for five weeks beginning April 1, 1919, without pay; Assistant Professor E. C. Robbins as Educational Director for

the Central Division of the Red Cross for the remainder of the academic year beginning October 7, 1918, without pay; Dr. J. F. Schneider for one month from January 10, 1919, with full salary; Dr. F. W. Schlutz for war service beginning November 1, 1918, without pay; Assistant Professor Helen A. Whitney for the second and third quarter of 1918-19 with full pay on account of ill health; Assistant Professor O. S. Zelner for one year without pay, beginning August 1, 1918.

Resignations.—During the year, the following members of professorial rank resigned from the Faculty: John R. Allen, Dean of the College of Engineering and Architecture; Gertrude Harper Beggs, Dean of Women; Hardin Craig, Professor of English; Alfred J. Pearson, Professor of Romance Languages; Robert M. Yerkes, Professor of Psychology; Samuel Hoyt, Associate Professor of Metallography; J. L. Mowry, Associate Professor of Agricultural Engineering; T. G. Patterson, Associate Professor of Animal Husbandry; R. C. Ashby, Assistant Professor of Animal Husbandry; R. A. Baker, Assistant Professor of Chemistry; Sylvia Campiglia, Assistant Professor of Textiles and Clothing; I. D. Charlton, Chief of the Division and Assistant Professor of Farm Engineering; B. M. Gile, Assistant Professor of Agricultural Education; E. M. Lehnerts, Assistant Professor of Geology in Extension; F. R. McMillan, Assistant Professor of Structural Engineering; R. B. Oshier, Secretary of the Lecture and Lyceum Department, Extension Division; Joseph Peterson, Assistant Professor of Psychology; E. C. Robbins, Assistant Professor of Economics; H. L. Slobin, Assistant Professor of Mathematics; Mrs. Frances V. Ward, Assistant Professor of Foods and Cookery; Richard Wellington, Assistant Professor of Horticulture; Grace I. Williams, Assistant Professor of Foods and Cookery; Dr. A. A. Zierold, Assistant Professor of Oral Surgery.

EDUCATIONAL DEVELOPMENTS

1. *The four-quarter system.*—The plans of the Committee on Education and Special Training of the S.A.T.C. precipitated anew the question of adopting the four-quarter system. In fact, those plans practically necessitated the establishment of "terms" in place of "semesters." Accordingly on September 3, 1919, the Administrative Committee of the Senate "voted to adopt the

quarter system for instruction during the operation of the S.A.T.C. at this institution." This action was confirmed by the Regents two days later.

The subject of the permanent adoption of the plan soon compelled the attention of the various committees and organizations of the faculties. As far back as 1913, this question had been the subject of careful investigation and deliberation. The minutes of the Senate for June 6, 1913, contain an extended report on the question. At a meeting of the Senate held on December 19, 1918, the Committee on Education reported in favor of substituting three quarters for two semesters but deemed the establishment at that time of a fourth quarter inadvisable. A long discussion followed, at the conclusion of which the Senate voted (51 to 23) to adopt the four-quarter system. Nevertheless, it seemed wise to consider the question further so a special meeting of the Senate was called for December 23, 1919, at which, by a vote of 75 to 11, the following action was taken:

Voted to recommend the adoption of the four-quarter system with the understanding that such action is conditioned upon the securing of adequate funds for the purpose, and that the system should be established in such a way as to lay emphasis upon advanced and graduate work.

The Board of Regents having favorably considered the subject on November 11, 1918, promptly approved this recommendation of the Senate on January 24, 1919.

In a word, the plan involves forty-six weeks of teaching and six weeks of vacation in each year. The fall quarter will begin October 1 and occupy twelve weeks; a week's vacation will follow; the winter quarter will open January 2 and extend for twelve weeks; a week's vacation will follow; the spring quarter will open April 1 and occupy eleven weeks; Commencement will fall on June 17; the summer quarter will begin on June 18 and extend for eleven weeks, ending September 3, leaving four weeks for vacation.

The four-quarter system is no new venture. It has been in successful operation for some twenty-five years at the University of Chicago. Moreover, it marks no unusual innovation for this University. We have been conducting not only our regular academic year's work but a summer session of six weeks which in turn has been followed by the continuation courses. The adoption of the four-quarter system simply unifies and coordinates

the work of the whole year. It adds great flexibility to the organization and schedules of the University, making its privileges far more available than at present. This change is particularly important just at this juncture when so many soldiers are returning from the war with a new appreciation of the value and necessity of higher training. Furthermore, it seems natural and wise to utilize the plant of the University throughout the year. Experience at the University of Chicago establishes the conclusion that the four-quarter system makes possible a more economical administration of the University as a whole.

In many respects, the adoption of the four-quarter system has already brought modifications. On January 22, 1919, the Administrative Committee of the Senate voted "to refer the whole question of the quarter system as regards educational policies involved to the Committee on Education." At a meeting of the Senate on February 20, 1919, the Committee reported regarding the adjustment of courses to the four-quarter system. Their recommendations, which were promptly approved, follow :

The committee recommends for the adjustment of the courses in the quarter system that such general groups as have been organized in the University, as, for example, the Biological and Social Science group, should confer on the correlation of courses and the arrangement of the schedule.

The committee is of the opinion that courses of less than three credits per quarter should not be offered save in the case of specialized courses in the graduate and professional schools. In order to promote a coordination of the schedule the committee recommends that the courses in the first and second years be arranged on a three- and a five-credit hour basis.

In the College of Science, Literature, and the Arts two significant changes have already been made. The standard course in the Junior College has been made a five-credit hour course. This means that the student will carry three five-credit courses instead of five three-credit courses. It ensures concentration upon fewer subjects with the possibility of more thoro work being done in the fundamental subjects. Furthermore, the English requirement in the freshman year has been changed from a three-credit course in Rhetoric to a five-credit course combining Rhetoric and English Survey.

The Department of Agriculture reports that a careful study of the curriculum is being made and that sweeping changes may be anticipated next year.

In the Medical School the four-quarter system was put into actual operation in the summer of 1919 in connection with the new plans for clinical teaching.

Many questions related to the four-quarter system remain unsettled. For example, provision for final examinations can scarcely be made by the same plans as prevailed under the semester system. During the year under review, final examinations were given during "the last recitation period or periods."

2. *The School of Business.*—In the first half century of its history the University of Minnesota developed eleven constituent schools or colleges. Speaking in general the presumption is entirely against the establishment of further units. Any new aspirant for admission to the circle of colleges now constituting the University must be prepared to demonstrate beyond all reasonable doubt its right to exist as a separate school. On the other hand, a university must respond to the changing needs of a developing state and be prepared to provide advanced training in every important field.

The demand for professional training in business is not a new one. For several years the commercial organizations of the state have petitioned the Board of Regents to establish such a school. Many of the leading universities of the country have organized schools of commerce. Beginning with the fall of 1915, this University offered within the College of Science, Literature, and the Arts a four-year course in Commerce and Business Administration. In the fall of 1917, Professor W. E. Hotchkiss, Dean of the School of Commerce of Northwestern University at Chicago, was appointed Director of Business Education. Under his leadership the work was organized and developed rapidly. It was due to his strong initiative and forceful determination that the issue of establishing a new School of Business was pressed to a definite decision. On February 15, 1919, while still on leave of absence in government service, Professor Hotchkiss appeared before the Board of Regents and urged the organization of a separate school. The whole problem was a subject of serious consideration for several months. Professor Hotchkiss contended that if the school were organized, it should carry with it the

Department of Economics from the College of Science, Literature, and the Arts, and also all of the business work organized under the administrative supervision of the General Extension Division. The issues were sharply drawn. The discussion finally culminated in a hearing before the Board of Regents on May 21, 1919, when Professor Hotchkiss, Dean J. B. Johnston, and Director R. R. Price of the Extension Division appeared and presented clearly and with great cogency their several points of view. At the conclusion of the discussion the Board of Regents passed the following resolution:

Resolved, that the President of the University and the President of the Board, and such other members of the Board as they may determine are created a Committee and directed to report to the Board at its next meeting a plan for the organization of a separate School of Business, if, after consideration and investigation, the Committee shall decide that it is feasible so to do, and that it is the opinion of the Board that the organization of such a School does not and should not involve any change of principle in the work of the Extension Division as at present carried on.

In a word, the Board of Regents looked with favor upon the establishment of such a school but did not deem it advisable to alter the field of activities assigned to the General Extension Division.

The committee appointed on May 21, 1919, enlarged its membership by the addition of Regents Sommers and Partridge and gave careful study to the various issues involved. It consulted freely with those most concerned in the plans. At a meeting of the Board of Regents held on June 18, 1919, it made its report whereupon the following vote was passed:

1. That a separate school for professional training in business be established, beginning July 1, 1919.
2. That this school be officially designated "The School of Business."
3. That in keeping with the present policy of the University for its professional schools provision be made in the College of Science, Literature, and the Arts for a two-year pre-business course.
4. That in the judgment of this Board admission to the School of Business should be limited
 - (1) to graduates of standard colleges.
 - (2) to those who have completed the pre-business course in the College of Science, Literature, and the Arts, or its equivalent.
 - (3) to mature students of considerable business experience who will be known as "special students" and will not be candidates for the degree of the School.

5. That the President of the University be requested to nominate to the Board of Regents a Dean for the School of Business.

6. That in the judgment of this Board the instruction in Economics should not be divided between the Faculty of the College of Science, Literature, and the Arts, and the Faculty of the School of Business; that the present staff in Economics and Business Education should constitute the Faculty of the School of Business; that their primary appointments should be in the School of Business, and that the Deans of the two colleges should be requested to consider and develop a plan whereby at least some members of the Faculty of the School of Business should be members of the Faculty of the College of Science, Literature, and the Arts.

Altho it falls outside of the period now under review, owing to the change in the fiscal year of the state, it is entirely fitting to record here that at a meeting of the Board of Regents, held on July 17, 1919, Dr. George W. Dowrie, Professor of Economics at this University, was elected Dean of the School of Business, Professor Hotchkiss having accepted the very important and highly significant position of Labor Manager for the Wholesale Tailors Association of Chicago. Professor Hotchkiss' position makes him a member of a committee of three from Chicago and a committee of nine for the country as a whole charged with the duty of studying scientifically the whole problem of industrial relationships so far as it relates to the particular field in question. This new position is strictly in keeping with Professor Hotchkiss' professional interests and will only enhance his already excellent equipment for university work.

3. *New departments.*—In the Department of Agriculture there has been organized a group to be known as Agricultural Engineering. This group is made up (1) of the Division of Farm Engineering of which Professor William Boss has been made the chief and (2) of the Division of Drainage of which Professor John T. Stewart will serve as chief. Professor Boss is chairman also of the group.

In the Medical School a new department of Bacteriology and Immunology has been established, being separated from the Department of Pathology and Public Health of which Dr. Harold E. Robertson is the chief. Dr. W. P. Larson was placed in charge of the new department.

4. *New courses.*—In the College of Science, Literature, and the Arts one of the striking developments of the year was the organization of a new four-year course in Americanization work,

leading to the degree of B.S. On October 12, 1918, the Regents indicated that they looked with favor upon the plan and referred the question to the educational officers of the University for consideration. Upon the recommendation of the College of Science, Literature, and the Arts, the plan for establishing the course was approved by the Board of Regents on November 8, 1918. As a result the work in Sociology and Anthropology was separated into two departments. Professor A. J. Todd became chairman of the Department of Sociology and Director of the Social and Civic Training Course, and Professor A. E. Jenks, to whose initiative, leadership, and enthusiasm is due the organization of this new course, was appointed Chairman of the Department of Anthropology and Director of the Americanization Training Course.

This new project has attracted wide attention and has been received with hearty commendation in all quarters. It is reported that the University of Minnesota was the first institution of higher learning to recognize this need and to organize the work on a scientific basis. Obviously it is a new field and the conduct of the work will require great wisdom and sound judgment. That America needs to train thoroly a group of Americanization workers no one who is cognizant of conditions within the state and nation can seriously question. The war revealed situations among our alien peoples which can not be tolerated with composure. Thoro-going Americanism demands that we prepare wisely and sanely by means of scientifically trained workers to do all in our power to lead the new elements of our population into an intelligent understanding and appreciation of American ideals of citizenship.

Four other new courses have been organized in the College of Science, Literature, and the Arts. They represent clearly an educational policy of great value. It is obviously the determination of the Faculty that students shall acquire both a broad, liberal training, and be prepared to assume definite responsibilities in the work of the world. These new courses are: (1) a five-year course of training for the Diplomatic and Consular service; (2) a five-year course of training for State and Federal Administration; (3) a five-year course, offered also by the College of Engineering, in Municipal Administration and Engineering; and (4) a five-year course in Arts and Nursing.

In the Medical School, in coöperation with the College of Dentistry, there has been organized a two-year course in Hospital Dentistry. This course is intended for dental nurses and will prepare students to comply with an act of the Legislature requiring such nurses to be licensed. There has also been organized in the Medical School a Course in Public Health Nursing. This course is approved by the American Red Cross and the Minnesota Public Health Association, both organizations contributing to the support of the work.

In the College of Education, by action of the Board of Regents on April 22, 1919, the Handicraft Guild School became the Department of Art Education. In coöperation with the Department of Physical Education for Women a four-year course in the training of teachers and supervisors of Physical Education has been organized. With the splendid new emphasis on public health and the new demand for hygienic living this new course will meet a very important need of the public schools.

The General Extension Division has planned two distinctly new phases of work for the coming year. One relates to community service. Judge Frank T. Wilson of Stillwater has been appointed community organizer. The aim is to assist the communities of the state in their efforts to develop community solidarity and mutual understanding. The other marks a development of the Bureau of Visual Instruction. Heretofore this Bureau has served the state by sending out lantern slides. It is now proposed to enlarge the work by furnishing educational films to the various communities of the state. During the war, films have been gathered at Washington and these are now placed at the disposal of the universities.

5. *New methods.*—A study of the annual reports of the deans reveals here and there interesting new experiments in educational methods. Doubtless, few things are of more fundamental importance to an educational institution than genuine improvements in the methods of instruction. It is a curious paradox that so few scholars and educators are seriously concerned about positive advancement in the actual methods by which our work is done. Probably no greater service can be rendered to our students than to help them in the difficult task of "learning to learn," of acquiring in some way the fullest use of their minds. These tremendous tasks should not be turned over completely to the Col-

lege of Education whose professional task it is to study scientifically these problems.

Readers of this report are urged to observe (1) the new plan of teaching Mathematics by the laboratory method as described by Dean Allen in his report for the College of Engineering, (2) the new method of clinical teaching in the Medical School as proposed and organized by Dean Lyon and (3) the reorganization of the courses in the School of Chemistry, where Dean Jones is endeavoring by the elimination of unnecessary duplication of courses to secure a more thoro training in the fundamentals of the science, to release teachers for more advanced work, and in general to make a more economical use of the resources of the School.

In this presentation of educational development many important matters have necessarily been omitted. This discussion of the four-quarter system, of the new School of Business, of the organization of new departments and new courses, and of the adoption of new methods of instruction, gives ample evidence of a healthy, vigorous educational life in the University.

ADMINISTRATIVE CHANGES

1. *Deanship of Engineering.*—It is with genuine and sincere regret that I am compelled to record the resignation of Dean John R. Allen, of the College of Engineering and Architecture. He came to this University two years ago from the University of Michigan. He has proved himself a thoro administrator and organizer. The College under his leadership has shown real progress. During the past year, with all of the new problems involved in the conduct of the S.A.T.C., he has been invaluable. He has accepted the position of Director of Research Laboratories for the American Society of Heating and Ventilating Engineers located at the United States Bureau of Mines in Pittsburg. This call represented a rare opportunity in Dean Allen's own particular field of investigation. His resignation was accepted by the Board of Regents on May 21, 1919.

The necessity of appointing a successor to Dean Allen raised a large question of general administrative policy for the University.

It is quite obvious that the University can not go on *ad infinitum* creating new colleges and schools within the University.

During the past year alone there have been five rather insistent requests for new units. Including the new School of Business, we now have twelve separate organizations. The University now has seventeen deans, counting two assistants. This record does not include other important administrative officers such as the Comptroller, the Librarian, the Registrar, the University Health Officer, the two Directors of General and Agricultural Extension, and other executive officers of real importance. Every one of these persons is essential to the conduct of the University. Two distinct tendencies in the development of the University organization must be anticipated: (1) from time to time, as the needs of the state change, it will be necessary to establish new units or colleges within the University. No organization is final. For the University to remain static would be fatal. Just this year the new School of Business has been organized. We may confidently expect that the demand for a School of Journalism will continue. A very cogent presentation of the need of a School of Public Health has been made. (2) On the other hand, if we are to avoid, as we must, a constant increase in the number of highly paid administrative officials, we may wisely anticipate the possible combination, or at least coördination, of already existing units.

Within the University, it is evident that some of our present schools naturally fall into groups. For example, we have separate schools of (1) Chemistry, (2) Engineering and Architecture, and (3) Mines. These three organizations represent the whole general field of technology.

In filling the deanship of Engineering, it was finally decided to recognize these fundamental principles. Accordingly Dean Lauder W. Jones, of the School of Chemistry, was made Dean also of the College of Engineering and Architecture. This action must be regarded as a preliminary step looking toward the ultimate coördination and correlation of all of our work in this general field. We shall anticipate the ultimate organization of a Minnesota Institute of Technology within which the present schools will maintain their separate organizations but with a single administrative head. The separate units are essential if we are to make the necessary impact upon the imagination of the student. As a rule, he desires to be a student in Engineering, or Mines, or Chemistry. The contemplated plan, of which we now

see the first development, will reduce the overhead expenses, will release funds for the actual instruction of students, and will remove the unnecessary barriers separating, for example, the work in Chemical Engineering and the other main branches in that field.

The University was particularly fortunate in having as Dean of the School of Chemistry one who for ten years was Head of the Department of Metallurgical Engineering at the University of Cincinnati and closely associated there with the Faculty of Engineering. Any one who has read Professor Mann's report on Engineering Education prepared for the Carnegie Foundation for the Advancement of Teaching will be aware of the coöperative plan in operation at Cincinnati. It is needless to say that Dean Jones is thoroly cognizant of that whole plan and point of view and at the same time realizes that its successful operation depends largely upon the environment of any given college of engineering.

This distinctive step in administrative policy was not taken without full consultation with those who would be in a position to judge. In particular, the plan was submitted to a committee of five alumni appointed upon their own initiative by the members of the Engineering Alumni Association to consult with the President and Regents concerning the appointment of the new Dean. The plans and policies here outlined received their enthusiastic approval. If this general policy, through experience, proves itself to be wise, it may be anticipated that, at the proper time, it will be applied to other sections of the University.

2. *Deanship of Women.*—It becomes my official duty to report that on May 26, 1919, the Board of Regents accepted the resignation of Miss Gertrude Harper Beggs, Ph.D., as Dean of Women. Miss Beggs assumed her duties in the fall of 1917 and during the past two years has stood strongly for high standards of scholarship and conduct. Under her leadership, real progress was made in dealing with the housing problem: During the very abnormal conditions of the past year, with the S.A.T.C. in our midst, Miss Beggs directed the affairs of the women students with good judgment and unusual success. Mrs. Jessie S. Ladd, Director of Shevlin Hall, has been appointed Acting Dean of Women.

3. *Executive Secretary*.—At the meeting of the Board of Regents on June 4, 1919, it was voted to establish the position of Executive Secretary. Mr. Oscar L. Buhr, formerly secretary to the President, was appointed to this position and also made Secretary of the Board of Regents upon the suggestion of the Comptroller who has served in this capacity. The duties of the Executive Secretary were outlined in the following statement:

1. Arranging plans and schedules for the guests and visiting speakers of the University.
2. Issuing of authoritative information to the press.
3. Editing of the Reports of the Board of Regents and of the President.
4. Scrutinizing the legislation of the various faculties and committees with the hope of avoiding duplications and inconsistencies in the regulations of the University.
5. Studying the various University problems and gathering accurate data upon the basis of which decisions may be reached and policies determined.
6. Serving as Secretary of the Board of Regents, keeping minutes, and performing other duties usually devolving upon a secretary.

4. *University Director of Music*.—Professor Carlyle Scott, Chairman of the Department of Music, in the College of Science, Literature, and the Arts, has been appointed also to the office of University Director of Music. This is a new position. The plan is to centralize authority for all of the music of the University, including the band, the orchestra, and other organizations. By this method, it is hoped to improve and to standardize all of the musical activities of the University. Experience has clearly demonstrated the necessity of such an officer. The growing importance of the all-University convocations, the increasing frequency of visits from notable representatives and groups from foreign lands, the developing consciousness of University life, all call for public occasions where music of the highest excellence is essential. The establishment of this new officer is intended to meet this situation.

5. *Inspector of private secondary schools*.—The relationship of the University to the schools of the state is highly important. One of the standing committees of the University Senate is known as the "Committee on Relations with Other Institutions of Learning." One of its functions is to inspect private secondary schools and to determine whether their graduates may

be admitted to the University. Cordial relations with some forty-seven such schools already exist. Of course, there is no thought of dealing with the public high schools which are regularly inspected by representatives of the State Board of Education. The Senate Committee has urged for some time the necessity of appointing an Inspector of Private Secondary Schools. Moreover, our College of Education has presented with conviction the need of a Professor of Secondary Education. The two situations demand the full time of a well-trained expert. Accordingly at the meeting of the Board of Regents held on May 21, 1919, such an appointment was authorized. Professor L. V. Koos of the University of Washington has assumed these duties.

ADMINISTRATIVE POLICIES

1. *Student absences.*—Under the leadership of the Dean of Student Affairs real progress has been made this year in dealing with the question of student absences. This problem relates itself so intimately to the real work of the University and bears so specifically upon our academic standards, that any plan or method looking toward an efficient and prompt handling of this situation deserves the hearty support and the willing cooperation of the entire teaching staff.

This subject has been frequently considered by the Administrative Committee of the Senate. At a meeting on January 15, 1919, it was voted, after discussion "that some plan for centralizing the reports of absences be worked out." The President appointed Deans Coffman, Allen, and Nicholson as a committee to study this problem. They submitted the following report on February 12, 1919, which was adopted:

I. The administration of absences is a University function and should be administered through some central University office. The reasons for this are:

(1) Wide variation now exists among colleges as to their policies and methods of administering the attendance of students.

(2) Patrons do not always distinguish between the colleges of the University. Quite frequently they think that the rule of one college is the rule of the University and for this reason variations in rules and in practice lead to confusion in the public mind.

(3) Students do not always distinguish between colleges so far as administration is concerned. Variations in the administration of attendance leads to confusion and misunderstanding among students.

(4) The present system of administration is inefficient.

(5) Close supervision and control of attendance are especially necessary and advisable in the case of freshmen because of their newness to the University.

(6) The value of a general system of reporting is shown in the experience of the Administrative Board in checking the absences in the College of Science, Literature, and the Arts and the College of Education. When reports were first demanded absences averaged from 800 to 900 per day, but when the students became convinced that the University was actually looking after the matter, they dropped to between 250 and 300 a day.

(7) A systematic plan of reporting offers an early opportunity to get contact with parents and to gain their coöperation.

(8) It also offers a valuable check on the improper placing of students in classes and in courses and is of occasional value in locating faulty and weak scholastic work.

(9) It will make instructors think in terms of university rather than in terms of college autonomy.

II. A plan for reporting and controlling absence of students should be worked out by the Dean of Student Affairs and administered by his office, but the plan of the Dean of Student Affairs and all future modifications of it should be submitted to the Administrative Committee for approval.

This plan has been in actual operation for the spring quarter and excellent results have been accomplished. Reference to Dean Nicholson's report in this volume, where statistics are given, will convince any one of the value of this new policy.

2. *Per diem beds in Elliot Hospital.*—The business policy involved in the conduct of the Elliot Memorial Hospital has been a subject of discussion for some years. By the deed of gift the hospital was established for free patients. From time to time the state has enlarged the hospital and increased the facilities until the original gift was approximately doubled. The exact figures can be found in the official reports of committees on file in the President's office. The increased cost of supplies and services has accentuated this problem. In 1917, the annual sum appropriated for the hospital was \$100,200. This amount has proved quite inadequate. During the year 1918-19, the cost of conducting the hospital approximated \$125,000. The Legislature of 1919 did not specify the amount to be used during the coming biennium, but serious and pronounced objection was made to the great cost involved. Accordingly, after a most careful weighing of all the obligations involved, the Board of Regents, upon the recommen-

dation of a Committee of the Medical School, has voted to set aside fifty beds to be conducted on the per diem basis. That is to say, patients will pay not less than \$14 per week for care and sustenance based on the actual cost. No charges will be made for professional services. A nominal charge will be made for the use of the operating room. If these fifty beds should be used constantly they would reduce the annual cost of the hospital to the state by the amount of \$36,400. It is reasonable to assume that not less than \$25,000 annually will be saved by the adoption of this plan. Surely a policy which operates successfully at the state universities of Iowa and Michigan may be expected to produce desirable results here.

3. *Coöperation with state departments.*—The University aims at all times to place its facilities at the disposal of the state for the benefit of the people. For some time the School of Mines has coöperated with the State Tax Commission. Ore estimates are provided upon the basis of which the valuation of mineral properties in Minnesota is determined. During the year under review, upon the request of the Tax Commission, the Board of Regents has agreed, through the Civil Engineering Department of the College of Engineering, to be of service in appraising the water powers of the state. The Tax Commission provides the data and the blue prints and the University assists in the appraisal of the water power properties. This action was approved by the Board of Regents on January 24, 1919.

Similarly the University, through the College of Engineering, is coöperating with the State Highway Commission. Materials for the new highways are being tested in the University laboratories. Such coöperation with the state is mutually beneficial. It provides expert services for the state departments and it increases the research facilities of the University.

4. *Employment of relatives.*—At a meeting of the Board of Regents on April 22, 1919, the following policy was adopted:

Voted, that as a policy, in no case shall both the husband and wife be appointed or continued on the staff of the University, after October 1, 1920, except under unusual circumstances, and only then with the express sanction of the Board of Regents.

5. *Purchasing of livestock.*—Considerable attention during the past year has been given to the purchase of livestock by the

various sections of the Animal Husbandry Division in the Department of Agriculture. Representatives of the Livestock Breeders Association were given a hearing before the Board of Regents and their point of view has been carefully and sympathetically considered. As a consequence, at the meeting of the Board of Regents held on June 18, 1919, it was voted to set aside for the biennium the sum of \$10,000 for the purchase of livestock for the main farm and the various sub-stations. In addition, it was voted that all receipts from the sale of livestock should be available for additional purchases. It is understood that these decisions were in keeping with the arguments of those who represented the livestock interests and it is confidently anticipated that excellent results will follow under the guidance of our animal husbandry experts.

6. *The Code.*—The codification of the statutes, rules, and regulations of all kinds relating to the University has progressed rapidly this year. The early publication of the Code may be confidently anticipated. On November 11, 1918, the Board of Regents officially appointed Professor James Paige of the Law School as compiler of the Code.

7. *Amendment of the Constitution of the Senate.*—On May 14, 1919, there was presented to the Administrative Committee of the Senate, by the Committee on Business and Rules, a proposal for the amendment of Article I of the Constitution of the Senate. This was recommended to the Senate which in turn gave its approval on May 15. The Board of Regents at its meeting on May 21, 1919, approved the recommendation. The amended Article reads as follows:

All matters of detail, including those incident to the management of the student body, relating to the educational and administrative affairs of the University, except insofar as the Board may think proper to act directly, are, for the purpose of effectuating the government and educational management of the University under and by the Board of Regents, committed to the President, University Senate, and the several college faculties.

8. *Duties of the Registrar.*—In connection with the publication of the Code, the following statement of the official duties of the Registrar was approved by the Board of Regents on March 7, 1919.

1. To determine the qualifications of students for admission to departments of the University.

2. To determine the amount of fees to be paid by each student.
 3. To enforce regulations in regard to payment of the same and determine refunds.
 4. To supervise the registration of all students and submit to the instructors the only evidence of the students' right to attend class.
 5. To receive from each instructor the term grades of his students, properly to record same, and issue transcripts of such records to the students.
 6. To ascertain and report whether the records of candidates for degrees show them to be entitled to graduation.
 7. To compile and edit such publications as :
 - a. Bulletin of General Information
 - b. University Address Book
 - c. Information for New Students
 - d. The Annual Register
 - e. Communications to high schools and other preparatory schools
 - f. Baccalaureate programs
 - g. Statistical tables, etc.
 8. To distribute College Bulletins.
 9. To act as an executive officer in the enforcing of such University regulations as pertain to his office.
 10. To act as Secretary of the University Senate.
 11. To act as Secretary of the Committee of Business and Rules of the Senate.
 12. To act as Secretary of the University in charge of all communications not addressed to specific persons.
- In the performance of his duties he is directly responsible to the President.

STUDENT WELFARE

It may legitimately be said that the University during the year under review lived up more fully to its responsibilities to the students than ever before. The administration of the University has planned definitely to give more detailed and careful attention to the welfare of the student body. Any one who has read the *Annual Report of the President* for last year (1917-18) knows how serious an effort is being put forth to give adequate attention to student life.

1. *Effects of the S.A.T.C.*—During the fall quarter, the existence of the S.A.T.C. practically took the students out from under university authority and placed them under military control. The men were soldiers in the United States Army. They lived under a strict military régime. Student activities were largely abandoned. The *Minnesota Daily* was rescued only by the vigorous

initiative and constructive abilities of the women students who edited and managed the paper. The *Gopher* appeared in the spring as usual. Even athletics were taken over by the military authorities and there were no intercollegiate football contests. There were games between various units of the S.A.T.C. Eligibility rules were suspended. Few, if any, of the fraternities carried on their usual activities. Many of the chapter houses were taken over by the University for military purposes and for the housing of women students.

2. *Relationship of students and Faculty.*—In this important phase of student life distinct improvement is evident. In the College of Engineering and Architecture Dean Allen introduced the Mentor System which has worked well and produced very satisfactory results. Those interested in a full description of the plan should read the official pamphlet issued from Dean Allen's office. Beginning with the second quarter, the College of Science, Literature, and the Arts put in operation a system of Faculty Advisers which has been thoroly worked out and is intended to be of positive value to every student. As Dean Johnston's report shows, the plan involves real service to the student, requiring valuable time of the carefully selected advisers. In order to make this possible the teaching schedule of the advisers is reduced. Dean Nicholson reports that in nearly all the colleges social gatherings for members of the Faculty and students have been held. Any plan which strengthens the human relationships between student and teacher is to be fostered. Throughout American universities to-day there is a growing tendency to place a higher evaluation upon the teacher who can teach as well as upon the student who can study, and particularly upon stimulating, helpful, normal, human relationships between them. The University of Minnesota purposes to cultivate these ideals.

3. *The University Health Service.*—To appreciate in any adequate way the value of the Health Service which was in operation for the first time during the year 1918-19, one must read the report of Dr. John Sundwall in this volume. The amount of service rendered was nothing short of astounding. What the University would have done without a Health Service when overwhelmed by the combined attack of the S.A.T.C. and the influenza last fall is not pleasant to contemplate. As a matter of fact, however, the results were extremely satisfying.

The Health Service is housed on the first floor of Pillsbury Hall where students may go day or night for individual treatment. A students' hospital which accommodates twenty-five patients is maintained. All these services are entirely free, every student being required to pay a health fee of \$2 each quarter. The aims of the Health Service are constructive. They relate specifically to the academic efficiency of the student and the University.

4. *Development of intramural sports.*—The plan which aims to provide healthful, invigorating exercise and recreation for every student deserves whole-hearted support. The report of the Committee on Intramural Sports shows interesting developments. Athletic contests between various organizations, groups, and colleges stimulate a genuine university atmosphere. It is a great pleasure to be able to report that the plea for more room in which to conduct these games has been heard. By combining an appropriation from the Legislature made for the purpose with \$18,782.14 supplied by the Athletic Board of Control a forty-acre tract of land between the two campuses has been purchased. It will be easily accessible for students from either campus as the inter-campus trolley intersects the property. The securing of this very attractive area of land opens up many new and fascinating possibilities for the recreational side of student life.

5. *The better-Minnesota movement.*—During the spring quarter of 1919 an extremely interesting and significant movement arose spontaneously among the students. In a word, it was a hearty demand for a finer Minnesota morale. It involved no criticism of the past, but gained impetus from the disruption of normal university life by the S.A.T.C. In April, I was asked to address the students at three all-University convocations held on consecutive days. I spoke upon the "Better Minnesota Spirit," the "Better Minnesota Standard," and the "Better Minnesota Student." Concrete results followed these gatherings. The students responded generously to the challenge calling for a neater campus. As a result all fences, chains, and wires which had been erected for the purpose of preventing paths being made on the campus were removed. They disfigured the campus and presented a very unsightly spectacle. The students created a genuine demand for a neat, clean, orderly campus. Similarly, conditions in the reading-rooms of the Library were transformed

and it became possible for a student to study without interruption. In short, a genuine university consciousness developed. Movements were initiated, forces were set in operation and plans were formulated which augur excellent things for the coming year. Some of the fraternities took a genuine interest in the movement and arranged for social gatherings in which matters of university concern were publicly discussed by the students. An All-University Forum was organized in the spring and bids fair to take a vital place in student life and interest. A university is a training school in loyalty. If a student learns how to be a real citizen in his university-state, he will be a potent influence for good citizenship in the world.

UNIVERSITY LIFE

1. *Convocations.*—During the year 1918-19, the eleven-thirty hour on Thursdays has been set aside for all-University convocations. A gathering is not planned for every week, but the hour is kept free in order that a convocation may be held whenever a speaker of real merit is available. The list of speakers for the past year has been a notable one. The University was honored by a visit from the British Educational Mission in November, and from the French Mission in December. These gatherings have produced excellent results in the life of the University. The Committee on University Functions presented the following annual report to the Senate on May 15, 1919:

November 15—British Educational Mission

Dr. A. E. Shipley, Vice Chancellor, University of Cambridge

Sir Henry Miers, Vice Chancellor, University of Manchester

Sir Henry Jones, Professor of Moral Philosophy, University of Glasgow.

December 6—French Mission

Colonel Theodore Reinach, Editor, *Gazette des Beaux Arts*

Dr. Etienne Burnet, of the Pasteur Institute, Paris

Lieutenant Seymour De Ricci, Editor of "Art in Europe"

January 23—Dr. Harry Emerson Fosdick, of the Union Theological Seminary, New York City

January 30—Dr. Guy Stanton Ford, Dean of the Graduate School, University of Minnesota

February 6—Dr. Ernest M. Hopkins, President of Dartmouth College

February 13—Honorable William Howard Taft, Former President of the United States

- Dr. A. Lawrence Lowell, President of Harvard University
 Honorable Henry Morgenthau, Former Ambassador to Turkey
 February 27—Legislature Day
 Honorable Thomas Frankson, Lieutenant-Governor of the State
 Honorable W. I. Nolan, Speaker of the House of Representatives
 March 12—The President of the University
 March 20—Dr. Henry Suzzallo, President of the University of Wash-
 ington
 April 3—"Basket-Ball Team"
 The President
 Dr. L. J. Cooke, Director of Physical Education for Men
 Captain E. Platou
 April 15—"Better Minnesota," The President
 April 16—"Better Minnesota," The President
 April 17—"Better Minnesota," The President
 April 24—"Better Minnesota," Student Committee
 May 15—Dr. Charles R. Brown, Dean of the School of Religion, Yale
 University.

While most of them were comparatively simple in their stage setting and did not call for unusual activity on the part of the Committee, there were at least three occasions that required a great deal of time and effort, namely, the visit of the British Educational Mission, the Convocation in honor of Messrs. Taft, Lowell, and Morgenthau, and Legislature Day, as the responsibility of the Committee did not end with the holding of the Convocation.

Attention is called to the fact that when the student body as a whole desires to attend a convocation, serious crowding occurs, many are turned away, and much criticism and loss of *esprit de corps* result. The actual seating capacity of the Armory is 2,100. The enrollment in the Arts college alone exceeds that figure.

2. *The Official Daily Bulletin*.—During the fall quarter when the S.A.T.C. was in existence some efficient channel for prompt communication with every member of the University was a necessity. New instructions were received from Washington almost daily. As a consequence, the *Official Daily Bulletin* was issued from the President's Office. It is a small one-page sheet containing official notices. It is delivered free of charge to every member of the Faculty and staff and to every student. It reaches its destination each morning (except Sunday and Monday) by eight o'clock. It symbolizes prompt, efficient, rapid communication with every part of the institution. It makes for effectiveness, unity, and cohesion. On January 29, 1919, the Administrative Committee of the Senate voted "that notices either to members of

the staff or to students appearing in the *Daily Bulletin* be regarded as official." This simple device, therefore, is economical in doing away with a great deal of inter-departmental correspondence. All committee meetings and kindred engagements require merely a notice in the *Bulletin*.

It is not intended to be a competitor of the *Minnesota Daily*. It is not a newspaper. It simply carries official notices. The University has offered to supply the *Daily* in advance with the copy for the *Bulletin*. If any means can be devised whereby every member of the University could be supplied with a copy of the publication, a combination of the *Minnesota Daily* and the *Official Daily Bulletin* might prove advantageous. Heretofore the financial difficulties in such a plan have proved insuperable.

3. *The concert course*.—A significant, new feature of University life is the projected concert course for the coming year. Any movement which will enrich and beautify student life merits unanimous support. The Faculty Women's Club deserves high praise for the plans which it has formulated and the purposes which actuate it. In coöperation with the Department of Music, a series of four concerts will be presented to the University this coming year. Very moderate rates will be charged for the series as a whole. The plan brings within reach of every student an opportunity to hear the very best music. It is earnestly to be hoped that this new endeavor will meet such a spontaneous and unanimous response that no question can be raised regarding a continuance of the plan in later years. The names of the artists and the dates of the concerts are as follows:

November 14—Madame Schumann-Heink

December 3—Flonzaley String Quartet

January 13—Minneapolis Symphony Orchestra with George Meader, Tenor.

March 15—Ossip Gabrilowitsch.

These references to the Convocations, the *Official Daily Bulletin*, and the Concert Course are intended to emphasize again the profound need of the University for a deeper, richer, more unified, more coherent life. If these activities contribute even in a small measure to this result, then they fully justify the comparatively small expenditure of money and effort which is involved.

STATISTICS OF REGISTRATION

Collegiate students.—Table I shows the comparative enrollment for the years 1917-18 and 1918-19 in the colleges and schools of the University which require for entrance the completion of a four-year course in an accredited preparatory school. While the net gain for the year was 1,812 over 1917-18 it must be borne in mind that of the 7,379 students constituting the grand total, 3,252 were with the Students' Army Training Corps. It should further be noted that 1,233 students of the S.A.T.C. dropped out when the demobilization took place. The gains and losses are not particularly significant when the fact of the S.A.T.C. is kept in mind. The large gain in Engineering includes 387 who were in the S.A.T.C. only. The Agricultural loss is doubtless due to the absence of S.A.T.C. courses in that College. The Medical School gain of 40 in the senior year is a result of the establishment of the Medical Reserve which kept the enlisted men in college. The gain in Chemistry may be attributed to S.A.T.C. approved courses as in Engineering. The entire year was an abnormal one and no great reliance should be placed on the results of the comparison with the preceding year or former years. It is hard to conjecture what might have been the situation had there been no S.A.T.C. It is likely that the loss over 1917-18 would have been even greater than was that year's enrollment compared with 1916-17.

TABLE I. COLLEGIATE STUDENTS BY SCHOOLS AND COLLEGES, 1917-1919

COLLEGE OR SCHOOL	YEAR 1917-18			YEAR 1918-19			GAIN	LOSS
	Men	Women	Total	Men	Women	Total		
SCIENCE, LITERATURE, AND THE ARTS:								
Seniors	53	209	262	48	261	309	47	.....
Juniors	128	315	443	94	233	327	.....	116
Sophomores	246	311	557	211	303	514	.....	43
Freshmen	471	468	939	452	428	880	.....	59
Unclassed	36	78	114	34	84	118	4	.....
Total	934	1381	2315	839	1309	2148	.....	167
ENGINEERING AND ARCHITECTURE:								
Post-seniors	8	.....	8	3	.....	3	.....	5
Seniors	38	.....	38	55	.....	55	17	.....
Juniors	61	.....	61	86	.....	86	25	.....
Sophomores	127	1	128	151	4	155	27	.....
Freshmen	215	2	217	647	2	*649	432	.....
Irregular	8	1	9	8	1	9	.....	.....
Total	457	4	461	950	7	957	496	.....

THE PRESIDENT'S REPORT

TABLE I—Continued

COLLEGE OR SCHOOL	YEAR 1917-18			YEAR 1918-19			GAIN	LOSS
	Men	Women	Total	Men	Women	Total		
AGRICULTURE:								
Senior	48	74	122	24	51	75	.....	47
Juniors	57	69	126	39	68	107	.....	19
Sophomores	71	66	137	40	49	89	.....	48
Freshmen	88	68	156	52	70	122	.....	34
Unclassed	3	9	12	9	13	22	10	.....
Total	267	286	553	164	251	415	.....	138
LAW:								
Third-year	36	.....	36	21	.....	21	.....	15
Second-year	42	.....	42	38	3	41	.....	1
First-year	64	2	66	79	4	83	17	.....
Unclassed .....	.....	.....	.....	1	1	2	2	.....
Total	142	2	144	139	8	147	3	.....
MEDICAL:								
Seventh-year .....	.....	.....	.....	38	2	40	40	.....
Sixth-year	61	2	63	61	1	62	.....	1
Fifth-year	60	1	61	60	6	66	5	.....
Fourth-year	68	6	74	72	2	74	.....	.....
Third-year	80	2	82	75	8	83	1	.....
Unclassed	14	2	16	12	3	15	.....	1
Total	283	13	296	318	22	340	44	.....
SCHOOL FOR NURSES .....	.....	87	87	.....	76	76	.....	11
DENTISTRY:								
Seniors	84	1	85	60	.....	60	.....	25
Juniors	70	.....	70	74	1	75	5	.....
Sophomores	84	1	85	86	3	89	4	.....
Freshmen	97	2	99	116	2	118	19	.....
Unclassed	1	.....	1	5	.....	5	4	.....
Total	336	4	340	341	6	347	7	.....
MINES:								
Seniors	16	.....	16	7	.....	7	.....	9
Juniors	12	.....	12	13	.....	13	1	.....
Sophomores	18	.....	18	17	.....	17	.....	1
Freshmen	20	.....	20	43	.....	43	23	.....
First-year	8	.....	8	26	.....	26	18	.....
Special students .....	.....	.....	.....	1	.....	1	1	.....
Total	74	.....	74	107	.....	107	33	.....
PHARMACY:								
Postgraduates	1	.....	1	.....	.....	.....	.....	1
Seniors	13	5	18	2	1	3	.....	15
Juniors	24	3	27	10	3	13	.....	14
Sophomores .....	.....	.....	.....	11	10	21	21	.....
Freshmen	19	10	29	59	17	76	47	.....
Special students	2	.....	2	.....	.....	.....	.....	2
Total	59	18	77	82	31	113	36	.....
CHEMISTRY:								
Post-seniors	2	.....	2	3	.....	3	1	.....
Seniors	12	.....	12	11	1	12	.....	.....
Juniors	15	1	16	20	.....	20	4	.....
Sophomores	21	.....	21	35	3	38	17	.....
Freshmen	36	1	37	65	7	72	35	.....
Irregular students	11	.....	11	5	1	6	.....	5
Total	97	2	99	139	12	151	52	.....

STATISTICS OF REGISTRATION

TABLE I—Continued

COLLEGE OR SCHOOL	YEAR 1917-18			YEAR 1918-19			GAIN	LOSS
	Men	Women	Total	Men	Women	Total		
EDUCATION:								
Seniors	11	36	47	13	26	39	.....	8
Juniors	12	34	46	8	36	44	.....	2
Sophomores† .....	.....	.....	.....	.....	10	10	.....	10
Freshmen† .....	.....	.....	.....	.....	19	19	.....	19
Unclassed	16	90	106	25	149	174	.....	68
Total	39	160	199	46	240	286	.....	87
GRADUATE	221	106	327	206	110	316	.....	11
SUMMER SESSION:								
Minneapolis campus.....	415	569	984	432	691	1123	.....	139
Agriculture	40	87	127	21	115	136	.....	9
Total	455	656	1111	453	806	1259	.....	148
STUDENT ARMY TRAINING CORPS, COLLEGIATE SECTION‡								
.....	.....	.....	.....	3252	.....	3252	.....	3252
Grand total.....	3364	2719	6083	7036	2928	9964	.....	3881
Less duplicates.....	304	212	516	2352	233	‡2585	.....	2069
Net grand total.....	3060	2507	5567	4684	2695	7379	.....	1812

* Of this number 387 were registered in the Students' Army Training Corps only.

† Registration in the Art Education Course.

‡ Students pursuing approved war programs under the direction of the United States War Department during the fall quarter.

¶ This total comprises 109 transfers between the various colleges and schools, 457 students registered for the Summer Session of 1918 who were enrolled during the fall, winter, and spring quarters of 1918-1919, and 2,019 students of the Student Army Training Corps who enrolled for the winter and spring quarters.

Subcollegiate students.—Table II as usual shows the enrollment in departments which do not require high-school graduation for admission. The course for Extension Field Assistants was an emergency course during the second semester of 1917-18 to prepare men to assist in the mobilization of agricultural resources at the opening of the war. The discharged wounded soldiers were a special group admitted to the School of Agriculture under the direction of the Federal Board for Vocational Education. A special short course in Journalism was introduced during the Summer Session of 1918 to give special training for assistants in rural newspaper offices to supply the special demand created by the shortage of help during the war. The Farmers' and Homemakers' Week course was abandoned in 1918-19 on account of the influenza epidemic. The attendance for Editors' Week, Boys' and Girls' Week at the Central School, also the Farm Traction course, and Farm Women's Short Course is omitted from 1918-19 statistics as it was voted to include only registrants in

TABLE II. SUBCOLLEGIATE STUDENTS, 1917-1919

SCHOOL	YEAR 1917-18			YEAR 1918-19			GAIN	LOSS
	Men	Women	Total	Men	Women	Total		
CENTRAL SCHOOL OF AGRICULTURE:								
Three-Year Course:								
Seniors	85	38	123	57	34	91	.....	32
Juniors	136	48	184	100	37	137	.....	47
Freshmen	201	64	265	190	47	237	.....	28
Unclassed	33	7	40	26	2	28	.....	12
Discharged wounded soldiers .....	.....	.....	.....	34	.....	34	34	.....
Normal Course	1	12	13	.....	7	7	.....	6
Total	456	169	625	407	127	534	.....	91
Less duplicates .....	.....	1	1	.....	.....	.....	.....	1
Net total	456	168	624	407	127	534	.....	90
NORTHWEST SCHOOL OF AGRICULTURE, CROOKSTON:								
Regular students	148	48	196	147	51	198	2	.....
WEST CENTRAL SCHOOL OF AGRICULTURE, MORRIS:								
Regular students	122	50	172	142	85	227	55	.....
UNIVERSITY HIGH SCHOOL								
.....	87	89	176	93	118	211	35	.....
Total, Schools	813	355	1168	789	381	1170	2	.....
SHORT COURSES:								
Course in Embalming	18	1	19	15	4	19	.....	.....
Traction Engineering	46	.....	46	.....	.....	.....	.....	46
Dairy School	50	.....	50	34	2	36	.....	14
Gymnasium Extension								
Classes	45	32	77	84	30	114	37	.....
Consolidated School Principals	73	15	88	42	29	71	.....	17
Journalism	53	2	55	3	3	6	.....	49
Grain Elevator Accounting and Management	20	3	23	15	.....	15	.....	8
Rural Life	17	6	23	.....	.....	.....	.....	23
Mess Sergeants	12	.....	12	.....	.....	.....	.....	12
Home Nursing .....	.....	.....	.....	.....	110	110	110	.....
Farmers' and Home-Makers' Week:								
Central	1039	259	1298	.....	.....	.....	.....	1298
Morris .....	.....	.....	.....	.....	71	71	71	.....
Boys' and Girls' Week:								
Central	188	91	279	.....	.....	.....	.....	279
Morris	61	39	100	99	171	270	170	.....
Crookston	55	33	88	69	54	123	35	.....
Teachers' Training School:								
Central	21	757	778	2	346	348	.....	430
Crookston	6	134	140	3	103	106	.....	34
Morris	4	97	101	.....	70	70	.....	31
Farmers' Tractor School:								
Morris	87	.....	87	.....	.....	.....	.....	87
Total, Short Courses	1795	1469	3264	366	993	1359	.....	1905
Less duplicates	6	6	12	2	.....	2	.....	10
Net total, Short Courses	1789	1463	3252	364	993	1357	.....	1895
STUDENTS' ARMY TRAINING CORPS, VOCATIONAL SECTIONS:								
Engineering Department .....	.....	.....	.....	1303	.....	1303	1303	.....
University Farm .....	.....	.....	.....	1628	.....	1628	1628	.....
Total .....	.....	.....	.....	2931	.....	2931	2931	.....
Grand total	2602	1818	4420	4084	1374	5458	.....	.....
Less duplicates .....	.....	.....	.....	.....	2	2	.....	2
Net grand total	2602	1818	4420	4084	1372	5456	1036	.....

courses for which fees are paid to the University. The Traction Engineering Course was abandoned in 1918 on account of the necessity for training the vocational section of the S.A.T.C., and the Mess Sergeant's Short Course being a war emergency course was discontinued as a short course in 1918. The Rural Life Conference has been discontinued as a separate short course. The Conference will be held during Farmers' and Homemakers' Week. The Home Nursing Short Course was introduced to take care of the special demand for a course in home nursing occasioned by the influenza epidemic last year. The Advanced Class at the Northwest School was discontinued on account of small registration. Here again the army enrollment saves the entire group from showing a decided loss. It should be noted that of the 5,456 enrolled in this entire division, 2,931 were of the vocational section of the S.A.T.C.

Extension students.—Table III records for the past year only two groups of students: (a) general, (b) correspondence. The former pursued evening courses under personal supervision; the latter received instruction in absentia. It should be noted that evening Law classes have been discontinued, altho Business Law subjects are still taught.

TABLE III. EXTENSION STUDENTS, 1917-1919

COURSE	YEAR 1917-18			YEAR 1918-19			GAIN	LOSS
	Men	Women	Total	Men	Women	Total		
General	1098	973	2071	1130	976	2106	35	.....
Correspondence	185	174	359	190	210	400	41	.....
Law	25	1	26	.....	.....	.....	.....	26
Total	1308	1148	2456	1320	1186	2506	50	.....

Students' Army Training Corps.—Table IV records the attendance of two unique groups of students in the history of the institution, viz., the collegiate and vocational sections of the S.A.T.C. The first group comprised those who were graduates of accredited preparatory schools, i.e., were qualified for admission to a college or school of the University. The second group was more intimately related to war activity, the men being trained on a concentration plan for assignment to training camps in preparation for overseas service in various mechanical fields. The grand total of this group, 6,183, is equal approximately to

the largest collegiate enrollment the University has ever had under normal conditions.

TABLE IV. STUDENTS' ARMY TRAINING CORPS, 1918

COLLEGIATE SECTION, October 9 to December 21, 1918:			
Army	3030		
Navy	144		
Marine	78		
Total	3252	3252	
VOCATIONAL SECTION, April 8 to December 21, 1918:			
Engineering Department:			
Auto mechanics.....	530		
Blacksmiths	23		
Machinists	32		
Radio operators.....	114		
Telephone electricians.....	282		
Machinists' mates (Navy).....	322		
Total	1303	1303	
Agricultural Department:			
Blacksmiths	314		
Carpenters	400		
Bench woodworkers.....	501		
Electricians	414		
Total	1628	1628	
Grand total.....	6183	6183	

Summary.—Table V summarizes Tables I to IV, and gives the grand total registration for the entire institution under the headings, Collegiate, Subcollegiate, and Extension. It is safe to assume that 2,931 students in the vocational section would not have attended the University under normal conditions. Subtracting this number we have a total of 12,312 which is more nearly comparable to the total of 1917-18. Eliminating all "ifs" and "buts" we have the fact that 15,243 students of one type or another received instruction at the hands of University teachers during the year 1918-19. This is the largest enrollment in the history of the institution, the nearest approach being the figure of 14,973 for the year 1916-17.

Table VI is another summary giving the registration by departments. The large figures in Agriculture include the short course enrollment. The word "resident" in the total means students who attended classes at the University buildings as differentiated from those who attended classes offered in the Twin Cities and by correspondence.

Degrees conferred.—Table VII merely records the number and kinds of degrees conferred during the past two years. A number of new degrees appear in the Graduate School, i.e., the Master's degree with specialization in Neurology, Experimental Surgery, Pediatrics, and the Ph.D. degree with specialization in

STATISTICS OF REGISTRATION

TABLE V. SUMMARY, 1917-1919

DIVISION	YEAR 1917-18			YEAR 1918-19			GAIN	Loss
	Men	Women	Total	Men	Women	Total		
Collegiate students.....	3060	2507	5567	4684	2695	7379	1812	.....
Subcollegiate students.....	2602	1818	4420	4084	1372	5456	1036	.....
Total	5662	4325	9987	8768	4067	12835	2848	.....
Less duplicates.....	79	29	108	13	16	29	.....	79
Net total.....	5583	4296	9879	8755	4051	12806	2927	.....
Extension students.....	1308	1148	2456	1320	1186	2506	50	.....
Grand total.....	6891	5444	12335	10075	5237	15312	2977	.....
Less duplicates.....	.....	.....	.....	19	50	69	69	.....
Net grand total.....	6891	5444	12335	10056	5187	15243	2908	.....

TABLE VI. COMPARATIVE REGISTRATION FIGURES, 1917-1919

COLLEGE	YEAR 1917-18			YEAR 1918-19			GAIN		Loss	
	Men	Women	Total	Men	Women	Total	Men	Women	Men	Women
Science, Literature, and the Arts.....	934	1381	2315	839	1309	2148	.....	.....	95	72
Engineering and Architecture	457	4	461	950	7	957	493	3	.....	.....
Agriculture	2713	2034	4747	1213	1572	2785	.....	.....	1500	462
Law	142	2	144	139	8	147	.....	6	3	.....
Medical (including Nurses and Embalmers)	301	101	402	333	152	485	32	51	.....	.....
Dentistry	336	4	340	341	6	347	5	2	.....	.....
Mines	74	.....	74	107	.....	107	33	.....	.....	.....
Pharmacy	59	18	77	82	31	113	23	13	.....	.....
Chemistry	97	2	99	139	12	151	42	10	.....	.....
Education (including University High School)...	126	249	375	139	358	497	13	109	.....	.....
Graduate	221	106	327	206	110	316	.....	4	15	.....
Summer Session, Minneapolis campus (net).....	165	400	565	182	516	698	17	16	.....	.....
S. A. T. C. (net).....	.....	.....	.....	4164	.....	4164	4164	.....	.....	.....
Total	5625	4301	9926	8834	4081	12915	3209	.....	.....	220
Less duplicates.....	42	5	47	79	30	109	37	25	.....	.....
Net total.....	5583	4296	9879	8755	4051	12806	3172	.....	.....	245
Extension:										
General	1098	973	2071	1130	976	2106	32	3	.....	.....
Correspondence..	185	174	359	190	210	400	5	36	.....	.....
Law	25	1	26	.....	.....	.....	.....	.....	25	1
Total	1308	1148	2456	1320	1186	2506	12	38	.....	.....
SUMMARY										
Total, residence students	5583	4296	9879	8755	4051	12806	3172	.....	.....	245
Total, extension students	1308	1148	2456	1320	1186	2506	12	38	.....	.....
Grand total....	6891	5444	12335	10075	5237	15312	3184	.....	.....	207
Less duplicates.....	.....	.....	.....	19	50	69	19	50	.....	.....
Net grand total	6891	5444	12335	10056	5187	15243	3165	.....	.....	257

Surgery and in Obstetrics and Gynecology are offered for the first time. The total appears to show a loss, but the figure of 670 is for June, 1919, while the figure of 760 is for the close of the calendar year, December 31, 1918.

TABLE VII. DEGREES CONFERRED, 1917-1919

COLLEGES AND DEGREES	YEAR 1917-1918*			YEAR 1918-1919†		
	Men	Women	Total	Men	Women	Total
SCIENCE, LITERATURE, AND THE ARTS:						
B.A.	61	176	237	28	186	214
B.A. in Music	.....	2	2	.....	18	18
B.S. (Medicine)	50	5	55	40	.....	40
ENGINEERING AND ARCHITECTURE:						
C.E.	.....	.....	.....	.....	.....	.....
E.E.	1	.....	1	.....	.....	.....
M.E.	2	.....	2	3	.....	3
B.S. in Engineering	29	.....	29	41	.....	41
B.S. in Architecture	4	.....	4	9	.....	9
AGRICULTURE:						
B.S. (Agriculture)	34	.....	34	19	.....	19
B.S. (Forestry)	5	.....	5	1	.....	1
B.S. (Home Economics)	.....	76	76	.....	42	42
LAW:						
LL.B.	18	.....	18	12	.....	12
MEDICINE:						
M.D.‡	7	.....	7	34	2	36
M.B.	56	2	58	53	.....	53
Graduates in Nursing	.....	13	13	.....	20	20
DENTISTRY:						
D.D.S.	79	1	80	53	.....	53
MINES:						
E.M.	6	.....	6	4	.....	4
E.M. in Geology	4	.....	4	1	.....	1
Met.E.	4	.....	4	1	.....	1
PHARMACY:						
D.S. in Phm.	1	.....	1	.....	.....	.....
B.S. in Phm.	1	.....	1	.....	1	1
Phm.C.	3	1	4	6	3	9
G.Phm.	5	4	9	1	.....	1
CHEMISTRY:						
Chem. Eng.	1	.....	1	2	.....	2
B.S.	5	.....	5	5	.....	5
B.S. in Chem.	4	.....	4	5	.....	5
EDUCATION:						
B.A. in Ed.	8	35	43	18	5	23
GRADUATE:						
M.A.	13	19	32	13	17	30
M.S.	8	1	9	3	.....	3
M.S. in Neurology	.....	.....	.....	1	.....	1
M.S. in Experimental Surgery	.....	.....	.....	1	.....	1
M.S. in Orthopedic Surgery	1	.....	1	.....	.....	.....
M.S. in Surgery	4	.....	4	6	.....	6
M.S. in Pediatrics	.....	.....	.....	1	.....	1
Ph.D.	10	1	11	9	4	13
Ph.D. in Surgery	.....	.....	.....	1	.....	1
Ph.D. in Obstetrics and Gynecology	.....	.....	.....	1	.....	1
Totals	324	336	760	372	298	670

* Degrees conferred from June 20, 1918, to December 31, 1918. Of the total number 92 were conferred after June 20, 1918.

† Degrees conferred June 19, 1919.

‡ The Doctor of Medicine and Bachelor of Medicine degrees were awarded to 7 six-year medical students, members of the United States Naval Medical Reserve, who entered active service. Nineteen students (including two women), who received the Bachelor of Medicine degree, June 14, 1917, were, during 1917-1918, awarded the Doctor of Medicine degree without fulfilling the requirement of a year of internship or postgraduate work.

TABLE VIII—Continued

	Science, Literature, and the Arts	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nurses	Agriculture	Total
Brown Valley									
Buffalo	1	4				1			6
Buhl		4		2					6
Caledonia		1						1	2
Cambridge		5					1		6
Canby		6							6
Cannon Falls		1							1
Carlton									
Carver		1							1
Cass Lake		1							1
Chaska			1						1
Chatfield	1								1
Chisago Lake	2		1						3
Chisholm	1	3							4
Claremont									
Clarkfield		1							1
Clearwater									
Clinton									
Cloquet		5	2				1		8
Cokato					1				1
Coleraine		1							1
Cottonwood	1							1	2
Crookston	2	2	1						5
Crosby-Ironton	1	1	1	4				1	8
Dassel									
Dawson						1			1
Deer River		1							1
Delano		4							4
Detroit	2	1						3	6
Dodge Center									
Duluth									
Cathedral									
Central	17	21	3	4	2	1			48
Indus. High									
R. E. Denfeld	3	6						3	12
Eagle Bend									
East Grand Forks		2							2
Echo									
Edgerton		2							2
Elbow Lake		2							2
Elgin								1	1
Elk River		1						1	2
Elmôre	1						1		3
Ely		3	2						6
Eveleth	1				1				2
Excelsior	3	1			1				5
Eyota								1	1
Fairfax	1	2							3
Fairmont									
Faribault	3	5		1					9
Farmington								1	1
Fergus Falls	4	3			1	2			10
Fertile									
Foley									
Forest Lake									
Fosston	1				1			1	3
Franklin									
Frazee	1	3							4
Fulda		1							1
Gaylord		1	1						2
Gibbon	1								1
Gilbert									
Gladstone									
Glencoe	1					2			3
Glenwood	1	3						3	7
Glyndon		1							1
Graceville									
Grand Meadow		3						1	4

TABLE VIII—Continued

	Science, Literature, and the Arts	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nurses	Agriculture	Total
Grand Rapids		1				1			2
Granite Falls	1								1
Grove City		3							3
Hallock	2								2
Halstad									
Harmony									
Hastings	1	2					1		4
Hawley									
Hayfield									
Hector									
Henderson	1								1
Hendrum		3							3
Henning									
Herman			1						1
Heron Lake	1	1							2
Hibbing		1							1
Hill City		2							2
Hinckley									
Hopkins	2	1				1		1	5
Houston									
Howard Lake									
Hutchinson	2	2	1			1		1	7
International Falls		1						1	2
Ivanhoe									
Jackson	3	2							5
Janesville		3			1				4
Jasper									
Jordan									
Kasota	1								1
Kasson									
Kenyon		1							1
Kerkhoven	1	1							3
Kimball		1				1			1
Lake Benton	1	2					1		4
Lake City	1	1							2
Lake Crystal									
Lakefield	1				1			1	3
Lake Park									
Lamberton	3								3
Lanesboro		1	1						2
Le Roy									
Le Sueur	1	3						1	5
Le Sueur Center								1	1
Lester Prairie									
Lewiston		1							1
Lindstrom-Center City						1			1
Litchfield									
Little Falls	1					3			4
Little Fork	3	4							7
Long Prairie							1		1
Luverne									
Lyle	5	2		1				1	9
McGregor					1				1
McIntosh							1		1
Mabel									
Madelia	3	1							4
Madison	1							2	3
Mahnomen		1			1				1
Mankato	3				2				4
Mantorville	3	2						1	8
Maple Lake									
Maple Plain		2							2
Mapleton									
Marietta	1								1
Marshall		1							1
Marshall	1	1		1					3
Maynard		1							1
Mazeppa		1		1		1			3

TABLE VIII—Continued

	Science, Literature, and the Arts	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nurses	Agriculture	Total
Medford									2
Melrose		1		1					2
Milaca	1	2		1		1	1		5
Milroy				1					1
Minneapolis									
Central	61	23	3	3		1		11	102
East	36	21	3	3		4		7	73
North	39	32	4	6	9	2	1	3	93
South	45	20	4	6	2	2		1	80
U. of Minn. H. S.	4	4			2				22
West	65	12	8	2	5	2		6	100
Minnecota	1	1	1	1				1	5
Minnesota Lake									
Montevideo		5				1			6
Montgomery	1	3							4
Monticello		1				1			3
Montrose		1						1	1
Moorhead	1	1	1				1		4
Mora		1							1
Morgan		1					1		2
Morris	1								1
Morristown									
Morton		1							1
Mountain Iron		1		1					2
Mountain Lake		1			1				2
New London		2							2
New Prague		1				1			2
New Richland		1							1
New Ulm	3	3							6
North Branch		1						1	2
Northfield									
North St. Paul									
Norwood-Young America						2			2
Olivia		1							1
Ortonville	1	2					1		4
Osakis	1	1							2
Owatonna	2	3				2		1	8
Parkers Prairie									
Park Rapids	1								1
Paynesville		1							1
Pelican Rapids									
Pequot									
Perham	1	2			1				4
Pine City	1					1			2
Pine Island		1	1		1				3
Pine River									
Pipestone		3							3
Plainview		3							3
Preston	1	5							6
Princeton		1							1
Red Lake Falls		2							2
Red Wing	9	3	2					1	15
Redwood Falls	1	1						1	3
Renville	1				1				2
Rochester	6					2			8
Roseau		2							2
Royalton	1	1	1						3
Rush City		2				1		1	4
Rushford		1			1				2
Rushmore		1							1
Sacred Heart						1			1
Saint Charles									
Saint Cloud	3							1	7
Saint Francis		1							1
Saint James	2	1							3
Saint Louis Park		2	1						3

STATISTICS OF REGISTRATION

TABLE VIII—Continued

	Science, Literature, and the Arts	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nurses	Agriculture	Total
Saint Paul									
Central	43	18	2	2	2			4	71
Cretin	2				1				3
Humboldt	10	9	1					1	21
Johnson	6	5	1		3		1		16
Mechanic Arts	15	9	3	1	1			3	32
Saint Paul Park	1	1							2
Saint Peter								1	1
Sanborn	1								1
Sandstone		1							1
Sauk Center					1				1
Sauk Rapids									
Shakopee	1	1							2
Sherburn	1	1							2
Silver Lake		1			1				2
Skyberg									
Slayton									
Sleepy Eye		1							1
South St. Paul	2					1			3
Spooner			1		1				2
Springfield		1			1				2
Spring Grove		1							1
Spring Valley	2	2						2	6
Staples	1								1
Starbuck					1			1	2
Stephen						1			1
Stewart		1							1
Stewartville	1	1							2
Stillwater	6	7			1		1	3	18
Taylor Falls		4			1				5
Thief River Falls	1								1
Tower									
Tracy	1	1							2
Truman									
Two Harbors	2				1				3
Twin Valley	1								1
Tyler									
Villard		1			1				2
Virginia	3						1		4
Wabasha	2	4			1		1		8
Waconia									
Wadena					1			1	5
Wahkon	3								
Walker		2			1				3
Walnut Grove									
Warren		1							1
Waseca						1		1	2
Waterville		1							1
Watertown	1								1
Wayzata		1						1	2
Welcome								1	1
Wells	1								1
Westbrook		2							2
West Concord		1							1
Wheaton	3	3				2		1	9
White Bear									
Willmar	4	4			2				10
Windom	1	2							3
Winnepago	2					1			3
Winona	3	4		2					9
Winthrop		1							1
Worthington	1								1
Zumbrota	2								2
MINNESOTA									
State Board Examinations	2	3						2	7
Augsburg Seminary		1							1
Backus School									
Bethel Academy	1				1			1	3
Blake School	3	2							5

TABLE VIII—Continued

	Science, Literature, and the Arts	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nurses	Agriculture	Total
Central School of Agriculture									
Concordia College, Moorhead		1		1					2
Gustavus Adolphus							1		1
Lutheran Ladies' Seminary, Red Wing	1								1
Minnehaha Academy	2								2
Minnesota College	5				1				6
Northrop Collegiate Institute	4								4
Northwestern School of Agriculture, Crookston									
Park Region Luther College					2				2
Parker College	1								1
Pillsbury Academy	3								3
Red Wing Seminary	1	2							3
St. Benedict's Academy									
St. Catherine's Academy									
St. John's College	1	1	1		1				4
St. Joseph's Academy									
St. Margaret's Academy	5								5
St. Mary's College, Winona					1				1
St. Mary's Hall									
St. Paul Academy	1								1
St. Thomas College	3	3	1		1		2		9
Shattuck	7	1							8
Stanley Hall	3								3
Summit School									
Villa Sancta Scholastica									
Visitation Convent	2								2
ALABAMA									
Fairhope—School of Organic Education	2								2
ARKANSAS									
Fayetteville	1								1
CALIFORNIA									
Pasadena	1								1
DISTRICT OF COLUMBIA									
Washington—Western H. S.	2								2
FLORIDA									
Tampa									
Hillsborough C. H. S.		1							1
IDAHO									
Boise							1		1
ILLINOIS									
Benton		1							1
Chicago—Parker H. S.	1								1
Dundee		1							1
Minok	1								1
Rushville	1								1
Waukegan				1					1
INDIANA									
Culver Military Academy	1	1							2
Danville		1							1
IOWA									
Algona	2								2
Avoca	1								1
Calmar		1							1
Cherokee	1								1
Clinton	1								1
Colfax	1								1
Conrad		1							1
Cresco		3							3
Davenport	1								1
Decorah—Decorah Institute	1								1
Elkader	1								1
Ellsworth	1								1
Emmetsburg		1							1
Forest City—Waldorf Acad.	1						1		2

STATISTICS OF REGISTRATION

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TABLE VIII—Continued

	Science, Literature, and the Arts	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nurses	Agriculture	Total
Fort Dodge	2								2
Hawarden	1	1							2
Iowa Falls				1					1
Independence		1							1
Kendallville	1								1
La Porte City		1							1
Lake Mills		2							2
Marshalltown	1	1							2
Mason City	2	3							5
Mount Pleasant	1								1
New Hampton		1							1
Oelwein	1	1							2
Pomeroy	1								1
Sanborn		1							1
Sioux City									
High School	1								1
Trinity College		1							1
Waterloo	3	1							4
Waukon	1								1
KANSAS									
Topeka	1	1							2
Wichita	1								1
MARYLAND									
Hagerstown			1						1
MICHIGAN									
Ann Arbor		1							1
Battle Creek	1								1
Calumet	1								1
Charlotte								1	1
Crystal Falls	1	2							3
Hartford	1								1
Muskegon	1								1
MISSOURI									
Kansas City									
Westport H. S.	1								1
Lexington									
Wentworth Mil. Acad.				4					4
MONTANA									
Bozeman									
Gallatin Co. H. S.	1								1
Culbertson		2							2
Forsyth		1							1
Great Falls	1								1
Kalispell									
Flathead Co. H. S.		1							1
Lewiston									
Fergus Co. H. S.	1								1
Red Lodge									
Carbon Co. H. S.						1			1
NEBRASKA									
Albion		1							1
Beatrice		1							1
Omaha—Brownell Hall	1								1
Rushville	1								1
Spencer	1								1
Wakefield	1								1
NEW YORK									
Ossining									
The Holbrook School		1							1
NORTH DAKOTA									
Bismarck	3	2							5
Cando	1					1			2
Cooperstown	1								1
Devils Lake	1								1
Ellendale		1							1
Fargo									
High School	1								1
N. D. Agri. Col. H. S.		1							1

THE PRESIDENT'S REPORT

TABLE VIII—Continued

	Science, Literature, and the Arts	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nurses	Agriculture	Total
Fessenden	1								1
Glen Ulin								1	1
Grand Forks		2							2
Hankinson		1							1
Havana	1				1				2
Lisbon					1				1
McVie					1				1
Mandan	2	1	1						4
Marmarth	1								1
Michigan		1							1
Minnewaukan	1								1
Minot									
High School	3	2			2				7
State Normal	1								1
Oakes	1								1
Reeder	1								1
Sanborn		1							1
Valley City	1	1							2
Velva		1							1
State Board Certificates		2							2
OHIO									
Eaton	1								1
Washington	1								1
PENNSYLVANIA									
Bryn Mawr									
Baldwin School	1								1
Hollidaysburg									
Cowles School for Girls	1								1
Lansdowne	1								1
OREGON									
Ontario	1								1
Portland									
Washington H. S.	1								1
SOUTH DAKOTA									
Aberdeen									
High School	4								4
Northern N. & Ind. Sch.					1				1
Big Stone City	1								1
Brookings		1							1
Canton									
Augustana College	1								1
Clark						1			1
Clear Lake		1							1
Conde	1								1
Dell Rapids	1								1
De Smet	1					2			3
Doland		2				1			3
Fort Pierre							1		1
Garretson	1								1
Herreid						1			1
Howard		3							3
Huron		1							1
McIntosh						1			1
McLaughlin	1	1							2
Milbank	2						3		5
Miller	2								2
Mitchell	1								1
Mobridge	2								2
Northville	2				1				3
Parkston			1						1
Redfield		3				1			4
St. Lawrence		1							1
Scotland					1				1
Sioux Falls									
High School	2	1			1				4
Lutheran Normal	1								1
Watertown		1							1
Webster					1				1

TABLE VIII—Continued

	Science, Literature, and the Arts	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nurses	Agriculture	Total
Wessington Springs	2	.....	.....	.....	.....	.....	.....	.....	2
Wilmot .....	.....	1	.....	.....	.....	.....	.....	.....	1
WASHINGTON .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Spokane .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gonzaga U. H. S.	1	.....	.....	.....	.....	.....	.....	.....	1
Lewis and Clark H. S. ....	.....	2	.....	.....	.....	.....	.....	.....	2
WISCONSIN .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Amery .....	.....	3	.....	.....	.....	1	.....	.....	4
Arcadia .....	.....	.....	.....	.....	1	.....	.....	.....	1
Barron .....	.....	.....	.....	.....	.....	2	.....	.....	2
Black River Falls .....	.....	.....	.....	.....	.....	1	.....	.....	1
Brodhead	1	.....	.....	.....	.....	.....	.....	.....	1
Bruce .....	.....	2	.....	.....	.....	.....	.....	.....	2
Cambria	1	.....	.....	.....	.....	.....	.....	.....	1
Chippewa Falls .....	.....	.....	.....	.....	1	.....	.....	.....	1
Delafield .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. John's Mil. Acad.	3	1	.....	.....	.....	.....	.....	.....	4
Fairchild	1	.....	.....	.....	.....	.....	.....	.....	1
Fond du Lac .....	.....	.....	.....	1	.....	.....	.....	.....	1
Glenwood City .....	.....	1	.....	.....	.....	.....	.....	.....	1
Grantsburg .....	.....	.....	.....	.....	1	.....	.....	.....	1
Green Bay—East H. S.	1	.....	.....	.....	.....	.....	.....	.....	1
Independence .....	.....	1	.....	.....	.....	.....	.....	.....	1
Kenosha	1	.....	.....	.....	.....	.....	.....	.....	1
La Crosse .....	.....	.....	.....	.....	.....	.....	3	.....	3
Ladysmith .....	.....	.....	.....	.....	.....	.....	.....	1	1
Madison .....	.....	.....	.....	.....	1	.....	.....	.....	1
Manitowoc .....	.....	.....	.....	.....	.....	.....	1	.....	1
Marinette	1	.....	.....	.....	.....	.....	.....	.....	1
Medford	1	.....	.....	.....	.....	.....	.....	.....	1
Menomonie .....	.....	1	.....	.....	.....	.....	.....	.....	1
Merrill .....	.....	2	.....	.....	.....	.....	.....	.....	2
Milwaukee .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Division H. S. ....	.....	1	.....	1	.....	.....	.....	.....	2
New Richmond	3	1	.....	.....	.....	.....	.....	.....	4
Onalaska .....	.....	1	.....	.....	.....	.....	.....	.....	1
Osceola	1	2	.....	.....	.....	.....	.....	1	4
Oshkosh .....	.....	.....	.....	1	.....	.....	.....	.....	1
Pewaukee	1	.....	.....	.....	.....	.....	.....	.....	1
Prescott	1	.....	.....	.....	.....	.....	.....	.....	1
River Falls Normal .....	.....	1	.....	.....	.....	.....	.....	.....	1
St. Croix Falls	2	1	.....	.....	.....	.....	.....	.....	3
Shell Lake	1	.....	.....	.....	.....	.....	.....	.....	1
Sparta	2	.....	.....	.....	.....	.....	.....	.....	2
Stevens Point	1	.....	.....	.....	.....	.....	1	.....	3
Toma	1	.....	.....	.....	.....	.....	.....	.....	1
Weyerhaeuser .....	.....	1	.....	.....	.....	.....	.....	.....	1
CANADA	6	.....	.....	.....	.....	.....	.....	.....	6
CHINA .....	.....	.....	.....	1	.....	.....	.....	.....	1
NORWAY .....	.....	.....	.....	.....	1	.....	.....	.....	1

SUMMARY

Wisconsin	61	Missouri	5	Oregon	2
South Dakota	56	Indiana	3	Arkansas	1
Iowa	46	Kansas	3	California	1
North Dakota	43	Pennsylvania	3	Florida	1
Michigan	9	Washington	3	Idaho	1
Montana	8	Alabama	2	Maryland	1
Illinois	6	District of Columbia	2	New York	1
Nebraska	6	Ohio	2		

Total number of entrants for Minnesota	1,543
Total number for the United States outside of Minnesota	266
Total number for foreign countries	8

Grand total

1,817

TABLE IX. GEOGRAPHICAL DISTRIBUTION OF UNIVERSITY STUDENTS OF COLLEGIATE GRADE (OTHER THAN SUMMER SESSION), 1917-1919

COUNTIES:	Science, Literature, and the Arts	Engineering	Agriculture	Law	Medical	Nurses	Dentistry	Mines	Pharmacy	Chemistry	Education	Graduate	Total
Aitkin	2	2	4	..	..	..	..	..	..	..	..	..	4
Anoka	88	2	..	..	1	..	..	..	1	..	..	1	17
Becker	7	5	6	2	2	..	2	..	..	..	2	2	28
Beltrami	3	9	..	..	..	..	1	..	..	..	..	..	13
Benton	1	..	..	1	1	..	1	..	..	..	1	..	3
Big Stone	1	2	..	..	..	..	1	..	1	1	..	..	7
Blue Earth	14	8	3	2	3	3	4	..	..	1	2	2	42
Brown	8	9	..	..	2	1	3	..	..	..	..	..	25
Carlton	..	2	1	..	..	2	..	..	..	2	..	..	5
Carver	4	2	..	1	1	..	..	..	..	..	..	..	8
Cass	1	3	1	..	1	..	1	..	..	..	..	..	7
Chippewa	6	6	2	..	1	2	..	..	1	..	1	1	20
Chisago	7	10	1	1	..	..	2	..	3	1	..	..	25
Clay	7	2	..	..	..	3	1	1	..	1	1	1	17
Clearwater	..	..	..	..	..	..	..	..	..	..	..	..	..
Cook	..	..	..	..	..	..	..	..	..	..	..	..	..
Cottonwood	7	7	..	1	1	..	1	..	..	..	1	1	19
Crow Wing	7	8	5	1	..	..	1	6	..	2	1	..	31
Dakota	8	5	..	1	3	1	1	..	..	..	2	3	24
Dodge	7	..	..	..	..	..	1	..	..	..	1	..	9
Douglas	2	6	6	1	..	..	3	1	2	..	..	..	21
Faribault	8	3	1	1	4	3	1	..	1	..	2	1	25
Fillmore	15	11	3	1	1	1	4	..	1	2	1	..	40
Freeborn	10	5	1	..	1	..	1	2	..	..	..	..	20
Goodhue	19	12	3	..	2	..	3	..	..	4	2	3	48
Grant	2	3	2	..	1	..	2	..	..	1	..	1	12
Hennepin	992	242	127	65	112	20	101	38	29	65	160	111	2062
Houston	..	2	3	1	..	..	1	..	1	..	..	..	8
Hubbard	2	..	..	..	..	..	1	..	..	..	..	1	4
Isanti	2	6	..	..	..	1	1	..	..	..	..	..	10
Itasca	2	5	..	..	1	..	1	..	2	..	1	..	12
Jackson	10	3	4	..	..	..	4	1	..	1	..	1	24
Kanabec	2	2	2	1	..	..	2	..	..	..	..	1	10
Kandiyohi	10	8	3	4	1	..	4	..	1	1	1	1	34
Kittson	3	2	..	..	..	..	..	..	..	..	..	..	5
Koochiching	..	1	1	1	..	..	1	..	..	..	..	..	4
Lac qui Parle	5	3	1	3	6	..	..	..	1	..	..	..	19
Lake	4	..	..	..	1	..	1	..	..	..	..	..	6
Le Sueur	2	10	2	..	1	3	5	..	2	1	1	..	27
Lincoln	3	4	3	..	..	1	1	..	..	..	..	..	10
Lyon	7	4	3	..	1	1	3	2	..	1	3	3	28
McLeod	13	8	8	..	4	1	3	..	3	1	1	1	43
Mahnomen	3	1	..	..	..	..	2	..	..	..	..	..	6
Marshall	2	4	3	1	1	..	1	1	1	..	..	..	13
Martin	11	3	1	1	1	..	1	..	..	1	..	2	21
Meeker	15	6	..	..	..	..	1	..	3	1	1	..	27
Mille Lacs	1	5	..	..	1	1	1	..	1	..	..	..	10
Morrison	8	6	2	..	..	..	1	..	1	2	1	..	22
Mower	17	15	3	2	3	..	3	..	..	..	1	..	46
Murray	4	1	..	..	..	1	5	..	..	..	2	1	11
Nicollet	1	..	2	..	3	..	..	..	..	..	..	..	6
Nobles	8	2	4	1	1	..	..	1	..	1	..	..	18
Norman	5	5	..	..	..	..	..	..	..	2	1	1	13
Olmsted	22	9	3	2	4	..	1	..	2	1	..	16	60
Otter Tail	10	7	1	1	5	..	9	..	4	..	4	1	42
Pennington	4	..	1	..	2	..	..	..	..	..	..	..	7
Pine	10	2	..	..	..	..	..	..	1	..	1	..	14
Pipestone	2	5	4	..	..	..	1	..	..	..	..	..	13
Polk	4	6	3	2	..	3	..	..	1	1	1	3	24
Pope	5	7	7	..	..	3	5	..	..	..	2	..	26
Ramsey	304	83	75	12	45	23	33	13	2	19	31	55	695
Red Lake	..	2	..	..	..	..	..	..	..	..	..	..	2
Redwood	11	5	2	..	1	..	1	1	2	..	2	..	25

TABLE IX—Continued

	Science, Literature, and the Arts	Engineering	Agriculture	Law	Medical	Nurses	Dentistry	Mines	Pharmacy	Chemistry	Education	Graduate	Total
Renville	12	4	5	2	1	1	5	...	1	1	...	...	32
Rice	7	6	3	2	6	2	...	...	3	1	...	1	31
Rock	8	2	1	...	...	...	...	1	...	...	...	1	13
Roseau	2	...	...	...	...	...	...	...	...	...	...	...	2
St. Louis	73	61	6	2	9	5	10	18	2	7	6	2	203
Scott	4	1	1	1	3	...	3	...	2	...	...	...	13
Sherburne	4	3	3	...	...	...	...	...	...	...	1	...	11
Sibley	3	3	3	...	1	1	2	...	1	1	...	1	16
Stearns	10	8	5	1	3	1	7	1	...	...	1	1	37
Steele	6	3	6	...	...	...	...	...	3	...	2	...	31
Stevens	1	...	...	...	...	...	...	...	...	1	...	...	3
Swift	8	12	1	3	...	...	3	1	1	...	...	...	30
Todd	6	4	...	...	1	2	1	1	...	...	...	...	15
Traverse	4	4	3	...	1	1	1	1	...	...	...	1	16
Wabasha	8	4	3	1	1	1	4	1	2	...	...	...	34
Wadena	12	4	4	1	1	1	4	1	2	...	...	...	9
Waseca	3	6	2	1	...	1	2	4	3	...	...	...	22
Washington	5	6	1	...	...	2	2	2	...	...	...	...	22
Watsonwan	18	14	6	1	1	3	2	2	3	1	1	2	50
Wilkin	8	3	8	1	2	...	3	...	...	...	1	...	25
Winona	5	9	1	1	2	2	2	2	...	...	1	...	8
Wright	12	13	2	1	2	2	2	7	2	...	3	...	41
Yellow Medicine	5	8	2	...	2	...	...	...	...	...	...	...	17
Totals	1876	770	367	125	256	99	282	92	89	125	246	224	4551
STATES:													
Alabama	1	...	...	...	...	...	...	...	1	...	...	...	1
Arkansas	...	...	...	...	...	...	...	...	...	...	...	...	1
California	1	1	...	...	4	1	3	...	...	...	1	1	12
Colorado	2	1	1	...	...	...	...	...	...	...	...	...	4
District of Columbia	2	...	...	...	...	...	...	...	...	...	...	1	3
Florida	...	1	...	...	...	...	...	...	...	...	...	...	1
Georgia	...	...	...	...	...	...	...	...	...	...	...	2	2
Idaho	...	2	...	...	2	1	...	...	...	...	1	...	6
Illinois	5	6	3	...	4	...	...	...	...	...	7	...	25
Indiana	...	3	1	...	...	...	...	...	...	...	4	...	8
Iowa	47	25	2	6	10	5	4	...	4	11	3	...	117
Kansas	1	2	...	...	...	...	...	...	...	1	3	...	7
Kentucky	1	...	...	...	...	...	...	...	...	...	...	...	1
Louisiana	...	...	...	...	...	1	...	...	...	...	2	3	3
Maine	1	1	...	...	...	...	...	...	...	...	1	2	2
Maryland	...	...	...	...	...	...	...	...	1	...	1	2	2
Massachusetts	1	1	...	...	...	...	1	...	...	...	3	6	6
Michigan	2	5	1	1	2	...	2	...	...	1	8	...	22
Mississippi	...	...	...	...	...	...	...	...	...	...	1	1	1
Missouri	...	1	1	...	2	2	...	...	...	...	3	9	9
Montana	18	12	2	...	3	...	3	1	4	2	1	...	46
Nebraska	2	3	1	...	1	...	...	...	1	...	2	10	10
New Hampshire	...	...	...	...	...	...	...	...	...	1	1	2	2
New Jersey	3	...	...	...	...	...	...	...	...	...	1	4	4
New York	...	...	...	...	3	...	1	...	...	...	7	11	11
North Dakota	46	27	4	6	11	2	19	2	2	2	3	1	125
Ohio	...	...	...	...	2	...	...	...	...	...	3	5	5
Oklahoma	...	1	...	...	...	...	1	...	...	...	...	2	2
Oregon	2	...	...	...	2	...	...	...	...	...	1	5	5
Pennsylvania	3	...	1	...	...	1	1	...	...	...	3	9	9
Rhode Island	...	...	...	...	...	...	...	...	...	...	1	1	1
South Carolina	...	...	...	...	...	...	...	...	...	...	4	4	4
South Dakota	48	35	7	...	9	1	6	1	11	3	7	5	133
Tennessee	...	...	...	...	...	...	...	...	...	...	1	1	1
Texas	...	...	...	...	...	...	...	...	...	...	2	2	2
Virginia	...	...	1	1	...	...	...	...	...	...	...	2	2
Washington	...	...	1	8	...	1	1	...	...	...	4	15	15
West Virginia	...	...	...	...	...	...	...	...	...	...	1	1	1
Wisconsin	26	24	8	4	11	12	17	3	4	1	10	5	125
Totals	212	151	31	20	75	25	56	12	22	12	37	84	737

TABLE IX—Continued

	Science, Literature, and the Arts	Engineering	Agriculture	Law	Medical	Nurses	Dentistry	Mines	Pharmacy	Chemistry	Education	Graduate	Total
U. S. POSSESSIONS:													
Philippine Islands..	1	1	...	...	...	...	...	...	...	...	2	...	4
OTHER COUNTRIES:													
Africa .....	...	...	1	...	...	...	...	...	...	...	1	...	1
Canada	9	4	1	...	1	...	2	...	...	...	1	1	19
China	3	1	...	...	...	...	1	2	...	...	...	...	7
Egypt .....	...	...	...	1	...	...	...	...	...	...	...	...	1
France	1	...	1	1	...	...	...	...	...	1	...	1	5
Hungary	1	...	...	...	...	...	...	...	...	...	...	...	1
India	1	...	...	...	2	...	...	...	1	...	...	1	5
Japan	1	...	...	...	...	...	...	...	...	...	...	...	1
Mexico .....	...	...	...	...	...	...	...	...	...	...	...	1	1
Norway	2	1	...	...	...	...	2	...	...	...	...	...	5
Poland .....	...	...	...	...	1	...	...	...	...	...	...	...	1
Russia .....	...	...	2	...	...	...	...	...	...	...	...	1	1
South America.....	...	...	2	...	...	...	...	...	...	...	...	...	2
Spain .....	...	...	...	...	...	...	...	1	...	...	...	...	1
Syria .....	...	...	...	...	...	1	...	...	...	...	...	...	1
Totals	19	7	5	2	4	1	5	3	1	1	3	5	56
Grand totals....	2107	928	403	147	335	125	343	107	112	138	286	313	5344

A SURVEY OF THE COLLEGES

College of Science, Literature, and the Arts.—(1) Faculty reduced to 127 full-time teachers at opening of year, but increased to 142 full-time teachers during the year, (2) S.A.T.C. demoralized University work, (3) Enrollment in College of Science, Literature, and the Arts 1,258 civilian, but credit hours taught in other departments made student hours equivalent to 2,622 students, (4) Special courses in War Issues, Quartermaster and Ordnance Work, Map Reading, and Navigation, (5) About half of students would not have come to the University but for the S.A.T.C.; 10 per cent of students were not college calibre which was one reason for demoralized spirit, (6) Important that poor students be dropped from University, (7) Many resignations and leaves of absence for military service, (8) System of Faculty advisers for students maintained, (9) Plan of four-quarter system was started with result that (a) Next year students in Junior College will carry 3 five-hour courses instead of 5 three-hour courses, (b) Requirement in Rhetoric in freshman year raised to a five-credit course, (10) Following new courses were established (a) Four-year course in Americanization, (b) Five-year course in

Diplomatic and Consular Service, (c) Five-year course in State and Federal Administration, (d) Five-year course in Municipal Administration and Engineering, (e) Five-year course in Arts and Nursing, (11) School of Business established in June, thus separating Department of Economics and Business Education from Science, Literature, and the Arts for next year.

College of Engineering and Architecture.—(1) 817 students registered at opening of year, (2) 364 men registered in vocational training, (3) Regular collegiate work began December 30, with an enrollment of 497, (4) Engineering curriculum should be made more flexible, (5) Experimental equipment is needed, (6) Experimental Department needs to be reorganized. Steps in this direction were taken during the year, (7) Laboratory work in Mathematics was begun, (8) Coöperation of Civil Engineering Department with Minnesota Tax Commission.

Department of Agriculture.—(1) Agricultural Engineering group organized, consisting of the Divisions of Farm Engineering and Drainage with Professor Boss as Chairman, (2) Publications of Faculty numerous, (3) Special war-time activities were: (a) Three detachments of 550 men each in vocational units of S.A.T.C., (b) War-time experiment projects, (4) Total enrollment in Department of Agriculture, including Schools of Agriculture and Short Courses was 4,407 as compared to 4,747 in 1917-18, (5) All juniors who intend to teach will be registered in the College of Education after 1921-22, (6) Academic credit given for military service, (7) Complete change in curricula due to four-quarter system, (8) Number of credit hours for graduation reduced as follows: Agriculture 216 to 204; Forestry 238½ to 204; Home Economics 198 to 189, (9) Legislature enacted a bill requiring establishment of a fourth School of Agriculture at Waseca, but no appropriation was made, (10) A study of the place of these schools in educational system of state has been made, (11) Courses at Central School of Agriculture were opened to disabled soldiers, (12) Enrollment in Short Courses slightly lower due to restrictions, (13) Agricultural Extension work maintained, (14) Great progress in County Agent and Farm Bureau work, every county in state now being supplied, (15) definite Farm Bureau program outlined for next year, (16) New Farm Bureau Law enacted, (17) Boys' and Girls' Club work carried on in nearly every county, (18) 18 demonstration farms

directed in state, (19) Report of Experiment Stations separately published by Director of Experiment Station.

Law School.—(1) Registration in fall only 17 civilian students, but increased to 117 in spring quarter, (2) Dean Vance in Washington with War Risk Insurance Bureau, (3) 637 volumes added to Library. Additional space is necessary, (4) New building is needed, (5) *Minnesota Law Review* published throughout the year.

Medical School.—(1) Five deaths of Faculty members, (2) 63 Faculty members and 245 students entered the service, (3) New Department of Bacteriology and Immunology created, (4) Degree of Bachelor of Medicine abolished, (5) Per diem charge on 50 beds in Elliot Hospital authorized for next year, (6) Four-quarter system effective summer of 1919, (7) New method of clinical teaching adopted for fifth and sixth years, (8) New course in Hospital Dentistry, (9) Combined course in Arts and Nursing, (10) Permanent courses in Public Health Nursing, (11) Social Service Department of value in Sociology and Public Health Nursing, (12) Services offered to Federal Interdepartmental Social Hygiene Board, (13) Report of University Hospital gives statistics of work.

College of Dentistry.—(1) Five-year course offered, resulting in close relationship with Medical School, (2) Graduate course established for Dental nurses, (3) Active part in military affairs.

School of Mines.—(1) Equipment added to State Mining Experiment Station, (2) Complete list of activities given, (3) Mr. C. E. Julihn made Superintendent of Lake Superior Station of United States Bureau of Mines, (4) Minnesota Tax Commission continues to furnish a basis for valuation of mineral properties in Minnesota, (5) 104 students registered.

College of Pharmacy.—(1) Completion of twenty-seventh year, (2) Eleven graduates during the year, (3) quarter system adopted, (4) Free dispensary filled 21,424 prescriptions, (5) Pharmaceutical Service given to Hospital, Dental College, Public Health, and other departments, (6) Digitalis production for War Department increased, 21,060 bottles being prepared.

School of Chemistry.—(1) First quarter courses disorganized on account of S.A.T.C., (2) Faculty inadequate to carry out the work of the School in full, (3) 97 students registered during third quarter. Large number from other colleges take work here,

(4) Many changes in curriculum of the School, (5) Rooms and laboratories must be modified to meet the needs, (6) Stockroom service has been improved, (7) Dean's office will serve as a central office for the School.

College of Education.—(1) Supervision of students registered in Handicraft Guild, (2) College registration 212, (3) Registration in University High School 191, (4) Superintendents' and Principals' Short Course conducted, (5) Bureau of Co-operative Research completed its report, (6) Handicraft Guild of Minneapolis made the Department of Art Education in the College of Education, (7) Course for training teachers of Physical Education, (8) Committee on Appointments placed 132 registrants, (9) Certain pressing needs remain.

Graduate School.—(1) Abnormal conditions during past year make conclusions impossible, (2) Fewer applications for fellowships each year, (3) Graduate students are turning to professional courses or private enterprise, (4) Smaller institutions will suffer because of lack of funds for instruction, (5) Mayo Foundation work progressing satisfactorily, (6) Complete statistics of registration given.

Dean of Women.—(1) 2,886 women registered in University, (2) Housing problem an important one and closely supervised, (3) Census slips used to secure immediate information regarding students, (4) Auxiliary organizations giving service were Women's Self-Government Association, House Council, and Advisory House Council, (5) Social and administrative entertainments were given, (6) Financial aid given to students through loan funds, (7) Nine scholarships for women handled, (8) War work centralized under Women's Self-Government Association.

Dean of Student Affairs.—(1) Student affairs almost suspended during first quarter on account of S.A.T.C., (2) Many changes in scholastic work on account of military duties, (3) Normal year began with second quarter, (4) Student councils were all reorganized and worked well, (5) *Minnesota Daily* and *Gopher*, the only student publications, (6) Finances of student activities in good condition, (7) Social activities resumed as in other years, (8) Fraternities and sororities under control as before the war, (9) Absences of students closely checked.

General Extension Division.—(1) Activities checked by influenza epidemic. Night classes interrupted, (2) Registration

low during first semester but increased during second semester, (3) Lyceum course and public meetings greatly hindered by influenza, (4) Merchants' Short Course had large enrollment. Assisted by Advisory Committee of Minneapolis and St. Paul Business Men, (5) Various new Short Courses were offered, (6) Drama service directed by Mr. John Seaman Garns, (7) Document drawn up by Senate Committee on University Extension setting forth the rights, duties, and jurisdiction of the General Extension Division for approval of the Regents, (8) New field will be developed by Judge Frank T. Wilson, who has been appointed Community Organizer to cultivate community feeling, (9) Bureau of Visual Instruction formed with Mr. J. V. Ankeney in charge. Films will be used in addition to slides, (10) Correspondence study department has grown over preceding year. Larger increase expected next year, (11) Total Collegiate evening class registration in first semester was 792; Business classes 344, Engineering 97. Second semester 442, Business 668, Engineering 118, Total fees for year \$13,458. (12) 780 Lyceum attractions filled, (13) Activities of Municipal Reference Bureau continued. Inquiries from 81 municipalities received.

Summer Session.—(1) 1,467 students enrolled, (2) 178 members on Faculty, (3) Appropriation for Summer Session was \$38,500, (4) Course of lectures and entertainment arranged, (5) New course in Americanization was offered. "Social Service Plattsburg" was continued, (6) Continuation courses were offered in Medical School and in Chemistry and Animal Biology, (7) Comment on quarter system; budget must be increased, (8) Report by Vice-Director regarding College of Agriculture conditions and recommendations, (9) Report of Administrative Board regarding registration, absences, scholarship, and recommendations for next year.

Department of Physical Education for Men.—(1) Physical examination of all new students entering University. A total of 1,484, (2) 557 disease census cards filled out and sent to State Board of Health, (3) 427 students enrolled in personal hygiene lectures, (4) Regular gymnasium classes with 354 enrolled, (5) Special classes given in Corrective Gymnastics, (6) Supervision of Intramural Sports, Sigma Delta Psi tryouts and Intercollegiate athletics, (7) Three urgent needs are: (a) new gymnasium, (b)

more ground for intramural sports, (c) required physical education for all freshmen and sophomores.

Department of Physical Education for Women.—(1) Physical education work for University High School organized, (2) Introduction of graphic methods of recording posture, (3) Correlation of work with University Health Service, (4) Required work for all sophomore women in Science, Literature, and Arts, (5) Four-year course organized for teachers and supervisors of physical education, (6) Examinations given 1,404 students, (7) All new students attended required Hygiene lectures and Physical training, (8) Questionnaire sent to parents of University High School senior girls regarding physical condition, (9) Teachers' courses offered during Summer Session.

Committee on Physical Education and Intramural Sports.—(1) Intramural sports for women included basket-ball, ice-hockey, gymnastics, baseball, and swimming. Annual field-day held May 31, (2) Contests for men included football, basket-ball, baseball, track, ice-hockey, boxing, swimming, bowling, handball, tennis, relay race, (3) Intramural banquet at Minnesota Union, (4) Aim of Committee is to interest all students in athletic contests, (5) Immediate needs are an instructor in intramural sports, building of tennis court, skating rink, toboggan slide, and various supplies, (6) Recommend an All-University Field Day, a winter carnival, aquatic sports on the Mississippi.

Military Department.—(1) First quarter taken up by S.A. T.C., (2) R.O.T.C. organized February 10, 1919, (3) Staff consisted of seven commissioned officers and six non-commissioned officers, (4) Total enrollment of students was 1,037, (5) Four graduated from advanced course, (6) Army psychology test given during last week of course, (7) War Department issued \$121,650 worth of equipment for R.O.T.C.

Geological Survey.—(1) \$16,500 allotted for biennium beginning August 1, 1917. (2) Following problems investigated: (a) survey of Mesabi Iron Range, (b) survey of Cuyuna Range in coöperation with United States Geological Survey, (c) detailed study of manganiferous ore deposits, (d) Investigation of molding sands for iron and brass foundries, (e) survey of surface formations and agricultural conditions of Minnesota.

Zoological Survey and Museum.—(1) This work has been made a department of the College of Science, Literature, and the

Arts, (2) Itasca Park beaver group completed, (3) Bird groups being constructed, (4) Various small donations received, (5) Attendance at the Museum increased, (6) Funds for work secured from private contributions. \$5,500 has been appropriated for the coming year, putting the work on an official basis for the first time.

University Library.—(1) Unusual conditions during S.A.T.C. restricted use of Library. Many duplicates purchased for some courses and resold later, (2) Circulation of books almost normal in spite of war conditions. Home use of books above the average of other years, (3) Inter-library loans with other universities continued, (4) 14,855 volumes were added to the Library, (5) Importation of books and periodicals from foreign countries was interrupted, (6) Gift from Swedish Government of complete set of parliamentary records 1866-1917, (7) Notable event is appropriation by Legislature for new Library Building, (8) Coöperation in purchases and use of books carried on with Public Library and State Historical Society.

Academic fraternities.—(1) No fraternity life during first quarter of 1918-19, (2) Scholarship requirement for initiation resumed at opening of second quarter, (3) New ruling passed that no man be pledged until 15 days after matriculation, (4) Table showing number of men eligible for initiation.

The General Alumni Association.—(1) Attempt to secure State Soldiers' Memorial for University failed, (2) Association has improved the *Alumni Weekly*. Gift of \$1,000 from Mr. Todd W. Lewis, (3) Alumni Directory will be issued at University expense, with coöperation of Alumni Association.

Students' Health Service.—(1) Aim is to promote an active and healthy student body, (2) Close coöperation with departments of Physical Education. (3) Protection of students against communicable disease, (4) Complete physical examination record of all students filed and used for reference, (5) Division of Sanitation supervises conditions on and off the campus, (6) Organization divided into (a) personal phase, (b) sanitation, (c) educational phase, (7) Health Service housed in first floor of Pillsbury Hall; 100 students can be accommodated daily in dispensary and 25 in hospital, (8) Death rate during influenza epidemic lower than at any other institution, (9) 14,704 cases taken

care of during S.A.T.C. including physical examination for draft entrance to army; 17,347 cases among civilians, (10) Plans for development include sanitation and educational features.

GIFTS

The year under review (1918-19) was marked by the public announcement of a notable and generous bequest to the University by the late W. J. Murphy of the *Minneapolis Tribune* for the purpose of establishing a School of Journalism. The Board of Regents took cognizance of the announcement at its meeting on November 8, 1919, and instructed the President at the proper time to communicate to the executors, the sincere appreciation of the University. On March 7, 1919, the following resolution was spread upon the minutes of the Board:

In recognition of the announced bequest of the late Mr. W. J. Murphy, owner and publisher of the *Minneapolis Tribune*, placing in trust a part of his estate in a fund which in his will he requests shall be known as the "W. J. Murphy Endowment Fund for a School of Journalism," the Board of Regents of the University of Minnesota wishes to express its high appreciation of Mr. Murphy's interest in the profession of journalism and the business of newspaper publication, and of his confidence in the University as the institution best fitted to carry out his purposes for the advancement of his profession and of the newspapers of the state and the nation.

In expressing such appreciation, the Board of Regents would add that the University already has developed plans for the creation, as rapidly as circumstances will permit, of a Department of Journalism to cooperate with the editors and publishers of Minnesota in advancing still further the already large usefulness of their profession; also, that these plans are now in process of execution.

The Regents, therefore, would assure the family of the late Mr. Murphy and the trustees of his estate, in so far as such assurance may be given at this time, that, with the foundations which are now being laid, the memorial for which Mr. Murphy so generously provided should enable the University to create a department completely effective and fully worthy of Mr. Murphy's purpose to perform a lasting service to the profession of journalism.

It is earnestly to be hoped that this generous precedent of a citizen of Minnesota will be followed by others. It is too customary for the residents of the state to assume that the University will be properly cared for by legislative appropriations. While in general this inference is correct, nevertheless the fact remains that many serious needs of the University are not provided for.

A university should have many things, the purchase of which from state funds could scarcely be justified. The University of Minnesota, as the leading institution of higher learning in the state, merits those evidences of loyalty and affection which are so pronounced in connection with the older universities in the East. Mr. Murphy at one and the same time has made wise provision for the teaching of journalism and has set a worthy example to his fellow citizens.

A similarly significant bequest was made to the University by the late Dr. James E. Moore, for many years an honored and faithful member of the staff of the Medical School. At the meeting of the Board of Regents held on April 22, 1919, the following resolution was adopted:

WHEREAS, the Minnesota Loan and Trust Company of the City of Minneapolis, acting as trustee under the last will and testament of the late James E. Moore, M.D., for many years Chief of the Department of Surgery of the University of Minnesota, has advised the Board of Regents of the University of the conditions and provisions of the said will; and

WHEREAS, it appears that the testator, Dr. James E. Moore, has named the University of Minnesota as the residuary legatee of his estate and has specified the uses to which the Board of Regents may direct the income of the residue, so bequeathed and devised, for the benefit of the department of surgery of the Medical School of the University; and

WHEREAS, the will of Dr. Moore presents to the Medical School an excellent oil painting of himself; therefore, be it

Resolved, that upon the recommendation of the Administrative Board of the Medical School, the Board of Regents advises the Minnesota Loan and Trust Company, as trustees, of its grateful acceptance of the bequest so provided whenever, under the terms of the said will, such residuary legacy shall become available for the uses and purposes so specified; and

Resolved, that the School accepts the portrait of Dr. Moore and will place it appropriately upon the walls of the Faculty Room in Millard Hall; and

Resolved, that the Board of Regents records its deep appreciation of the long, faithful, and valuable service rendered to the Medical School of the University of Minnesota by the late James E. Moore, and its recognition of this bequest as the final and touching evidence of the love he has borne and the devotion he has given to the School throughout its entire history.

In addition to these distinctive bequests several other gifts have been made to the University for which the Board of Regents desires to record in no formal or conventional manner its genuine

appreciation. The gifts listed below have been received during the fiscal year under review:

DuPont Fellowship in Chemistry, \$750, by E. I. Du Pont de Nemours and Company.

Scholarship in Hydraulic Engineering by Civic and Commerce Association, \$500.

Nina Morais Cohen Scholarship, \$100.

Scholarship by the United States Radiator Company, \$500.

Scholarship by the Arts and Letters Department of the Woman's Club of Minneapolis, \$100.

Student Loan Fund of \$50 by the Fairfax-Andover Social Club of Crookston.

Annual Menorah Prize of \$100.

Fourth Scholarship by the St. Paul College Club, \$150.

Scholarship for Americanization work by the Pathfinder Club, \$100.

Scholarship for Americanization work by the Argosy Club, \$100.

Gift of \$75 from the Minnesota State Pharmaceutical Association.

Library of Music by Harlow Gale.

Pedigreed shire mare by Dr. Christopher Graham.

A filter by the Oliver Continuous Filter Company of San Francisco.

FINANCES

1. *General situation.*—Little need be said at this juncture in regard to the finances of the University. The report of the Comptroller which appears in this volume presents in brief form the essential facts. His extended statements included in the biennial reports of the Board of Regents leave nothing to be desired. It is satisfying to be able to report that an eminently fair and just settlement of accounts was agreed upon with the War Department for all services rendered to the S.A.T.C. In an earlier section of this report I have outlined in detail the legislative actions affecting the University. The appropriations of the Legislature of 1919 met fully the requests of the University. Nothing but words of praise and gratitude are due both branches of the Legislature for their discriminating and statesmanlike dealings with the problems of higher education.

2. *Fees.*—Owing to the adoption of the four-quarter system, it has been necessary to adjust the fees to meet the changed conditions. In some cases there are slight increases, in others there are decreases. By action of the Board of Regents on May 21, 1919, the use of the word "annual" with regard to fees will be dropped and the word "quarter" will be employed. Moreover,

the term "incidental" will be replaced by the word "tuition." For example, the tuition fee per quarter in the College of Science, Literature, and the Arts will be \$14.

3. *Shevlin Hall fee*.—By action of the Board of Regents on December 10, 1918, a fee of fifty cents per quarter was established for Shevlin Hall. The action reads as follows:

Voted, to approve the assessment of fifty cents upon each woman student for maintenance of Shevlin Hall for each quarter, beginning with the fall quarter of 1919, on the same basis as the assessment is made on men students for the Minnesota Union.

In connection with this action, the question was raised by the Department of Agriculture in regard to the women students at the University Farm and the recommendation was speedily forthcoming that they, too, should be included in the plans for the maintenance of Shevlin Hall, the use of which they greatly prize. Accordingly, the Board of Regents at a meeting held on March 7, 1919, took the following action:

Voted, that the women students of the College of Agriculture, Forestry, and Home Economics be required to pay the same fee as the Shevlin Hall fee, that the funds collected be credited to a separate budget and be available for equipment of one of the rooms in the Home Economics Building on the University Farm Campus as a women's rest and recreation room.

CAMPUS PLANS

1. *Northern Pacific tracks*.—In 1909, the Legislature voted that the Northern Pacific tracks which run through the campus should be covered. The whole project has been the subject of much consideration. It has passed through various phases and many complicated questions involving the plans of the city have been raised. It is a pleasure to report that the last Legislature, as a part of the bill providing for the comprehensive building plan, authorized the Board of Regents to purchase the real estate of the Northern Pacific Railway Company adjoining the present tracks and also to secure the surface rights when the tracks are covered. The section of the bill relating to this subject reads as follows:

The Board of Regents of the University of Minnesota is hereby authorized to acquire by condemnation or purchase the real estate owned or controlled by the Northern Pacific Railway Company within the boundaries of the present campus of the University of Minnesota lying contiguous to the right of way of the said railway company as now laid

out and operated by the railway company through the campus, and also the surface rights over said right of way when the tracks now or hereafter operated thereon are covered as required by Chapter 302, General Laws of Minnesota for 1909, provided that before entering into any contracts for the purchase of such real estate, the Board of Regents shall confer with the State Board of Control and the State Auditor and ascertain and determine that funds as provided under the provisions of this act, will be available to meet the payments.

Probably no single change will do more for the campus as a whole than the covering of these tracks. They stand as a barrier between the old and the new campus. They interfere seriously with traffic circulation and in a very real sense destroy the unity of the campus. When the tracks are covered all of the regular roadways and walks will be carried over. Considerable new space will also be available. It is confidently to be expected that these plans will go forward rapidly. It must be remembered, however, that funds under the comprehensive building program are not available until July 1, 1920.

2. *Removal of frame houses.*—Since the purchase of the larger campus many of the frame buildings originally built as private dwellings have remained on the campus and have been rented, the income being available for campus maintenance. In view of the new developments the time has now come when several of these structures must be removed. Accordingly, the Board of Regents has authorized the sale of those least desirable and those which stand in the way of the development of the campus. The important step now is to remove the buildings which obstruct the actual laying out of the Mall which will be the central landscape feature of the entire campus.

3. *Location of new storehouse.*—The last Legislature appropriated \$200,000 for a new storehouse and general office building. One half of this sum was made immediately available for expenditure prior to June 30, 1919, and the other half for the fiscal year beginning July 1, 1919. The extreme need of an adequate and fireproof storehouse was almost notorious. The present structure is a dangerous fire hazard and disfigures seriously the appearance of the campus. After fully considering all of the available sites it was finally decided by the Regents on April 21, 1919, to locate the storehouse by the Northern Pacific tracks just north of the Main Engineering Building. It also seemed a more economical and efficient arrangement to place all of the various

business offices in the central administration building. Accordingly, the following action was taken:

Voted, to apply a portion of the money appropriated for Business Building, Storehouse, and Shops to the erection of the building listed on the revised Cass Gilbert plan as the Administration Building and facing westerly at the head of the Mall and erect a Storehouse and Shops in a direct line easterly with the Administration Building and on a line northerly with the Main Engineering Building.

4. *General appearance of the campus.*—The Buildings and Grounds Committee of the General Alumni Association, with Mr. H. F. Baker as chairman, has given very discriminating and helpful consideration to the general plans for the campus. They have assisted in placing a real emphasis upon the demand for a better appearing campus. The Board of Regents promptly approved their suggestions and it is generally conceded that the campus is showing improvement. The unsightly mass of material existing between the Main Library and the shops just back of the Mechanic Arts Building has been entirely removed and a splendid new vista opened. The students have responded vigorously to the call for protecting the grass and for placing all waste materials in receptacles provided in many places on the campus. The slogan "Keep your campus clean" has been effective. These efforts to secure a better appearing campus do not represent an undue concern for mere externalities. A neat and orderly environment is essential to the establishment of good standards and the maintenance of wholesome living. Indeed, clear, systematic thinking and worthy academic and scientific accomplishments are stimulated by the proper kind of surroundings.

PROBLEMS AHEAD

In the *Annual Report of the President* for last year (1917-18) the general problems of the University were discussed at some length, (pages 3-30). The principles laid down there need not be repeated or discussed here. The results achieved during the year under review (1918-19) in meeting and solving, in part, at least, several of those problems is indeed gratifying. Any virile institution, however, will be confronted constantly by new issues and by larger responsibilities. There is great advantage, not only in recording the general movements and tendencies in the life of the University and in setting them down as a part of the

official history of the institution, but also in endeavoring to view the situation as a whole and to point out the conditions or problems which require attention and which relate themselves intimately and fundamentally to the welfare of the University.

1. *The general salary situation.*—In view of the earlier statements in this report some might assume that this problem had been met. It is true that the Legislature gave the University the appropriations it asked for increasing the salaries and for additions to the staff. The biennial appropriation for the General Maintenance Fund was *increased* by the amount of one million dollars. No word written here, therefore, must be interpreted, even by inference, as criticism of the actions of the Legislature. Indeed, only expressions of appreciation are appropriate. Nevertheless, the general salary situation remains serious. In a word, only a beginning has been made. Our plans submitted to the last Legislature were formulated in the fall of 1918 and were submitted to Governor Burnquist, in accordance with legal requirements, on December 1, 1918. In the months which have elapsed since then economic conditions have grown steadily more difficult and have accentuated the problems arising out of the high and increasing cost of living. Approximately 76 per cent of the increase in salaries was awarded to those whose salaries were \$2,500 annually or less. Either prices must go down or salaries must go up. America, to-day as never before, realizes the absolutely vital importance of education to democracy. Never before have the universities been regarded so highly as to-day. They are tremendously potent factors in shaping the citizenship of the new day. No man is too well equipped or possesses too much ability to perform the high task of training and inspiring our youth. At the present moment, however, the supply of first-class men for university teaching is growing steadily less. As compared with the financial opportunities in other professions and in business, the career of the professor is not attractive. In sheer self-respect many are deserting the ranks. The war has been a seriously disturbing factor. Large numbers of our staff were summoned into military and Government service. They have had new experiences, and especially they have sensed large, new possibilities in other careers. Moreover, the world has had an opportunity to discover the rare qualities and unusual abilities of university men. In the long run, the results will be highly

beneficial. In the meantime, one of our most serious duties is to do all in our power to maintain a respectable living wage for the teacher. It must be done. I confidently believe that the representatives of the people of Minnesota can be depended upon to meet the situation courageously and in a statesmanlike manner.

2. *Adjustments to the four-quarter system.*—As stated earlier in this report, we are officially committed as an institution to the four-quarter system. The new calendar goes into effect on October 1, 1919. During the past year, we have had three quarters, followed by a summer session of six weeks, and continuation courses for an additional four weeks. Having adopted the new system and having reorganized our work for the coming academic year, early consideration must be given to several important phases of the problem which affect the entire University, and which remain unsettled: (1) Shall we regard the summer quarter as independent of the three regular quarters and organize it with a director and a centralized administration by which we have profited so much in the summer sessions during the last four years? (2) Shall the coming summer quarter be divided into two terms of six and five weeks in order to accommodate the teachers of the public schools and our regular summer clientele? (3) What shall we establish as the salary standard for the summer quarter? Our regular Class "B" appointees are engaged for three quarters only. Shall we follow the precedent of the University of Chicago and pay them two thirds of the salary for any regular quarter? (4) Shall regular members of the staff be permitted to take the fall, winter, or spring quarter for their usual vacations in place of the summer quarter? (5) Shall members of the Faculties be permitted or encouraged to teach four quarters regularly? (6) What regulations shall be adopted to avoid any possible deterioration of the teaching staff owing to continuous teaching? (7) Shall we determine the maximum number of quarters of continuous teaching which will be permitted? (8) Is it planned that students will be encouraged to register at the beginning of any quarter? (9) Will it be possible at one time to register students for all three of the regular quarters? These questions indicate something of the urgency and importance of this general problem. Administrative officers and members of the Faculties will render real service to the University by giving careful study to these questions and by preparing to arrive at final decisions during the fall quarter of 1919.

It will be of primary importance in working out these problems to keep steadily in mind certain guiding principles. (1) The four-quarter system was adopted to add flexibility to our schedules for both members of the Faculty and for students and thus to make our facilities more available. (2) It was definitely stipulated by the University Senate in adopting the plan that emphasis should be placed upon advanced and graduate work. This expectancy is well grounded, for graduate work in the Summer Session during the last four years has quadrupled. (3) The fourth quarter must not become a mere device for increasing salaries with the inevitable result that teaching efficiency will deteriorate, that research work will suffer, and that our scholarly standards will be lowered.

3. *Hospital expansion.*—The time has come when the University must face decisively the question of hospital expansion in the Medical School. In fact, this problem involves the entire educational policy of the Medical School, and in a very real sense, the future of medical education in the Northwest. The whole question of medical training has been passing through an interesting evolution in recent years. The report of Abraham Flexner on medical education in the United States helped to bring about a marked improvement. Experience with the principle of full-time teaching has shown some interesting results. It is quite evident that two rather well formed conclusions are emerging: (1) that any plan which entirely prevents a clinical professor in the Medical School from practicing his profession is unwise, and (2) that plans must be developed and facilities must be provided whereby such a member of the medical Faculty may give his chief time and interest to his educational work, but will have opportunity for a limited amount of private and consulting practice. These principles, if sound, present a very difficult problem to a medical school in a state university. It is logical to maintain that a professor of medicine must keep his contact with the profession, that he must have the benefit of actual practice, and that he must have a sufficient income to meet his financial needs and professional responsibilities. It is in the interests of sound educational policy to require a member of the medical Faculty to make teaching and research his first task. The elements of the problem are further complicated in a university

by the fact that full-time clinical teachers can not be secured and retained for salaries usually paid to university professors in other fields. It is generally conceded, and has been for some time, that the salaries of teachers in some of the professional schools must be higher than in other colleges of the universities. This particular principle, however, is taking on a new phase and is beginning to be applied not only to Law and Medicine, but also to Engineering, and more recently to members of the staff of the new professional School of Business. But even this principle does not meet the situation fully in the Medical School. The average salary of professors in the University as a whole may be approximately \$3,300, while the salaries of professors of Law and Medicine range from five to six thousand; and even then the medical situation is critical. The way out seems to lie in the direction of engaging the approximately full-time clinical teacher on the basis of a moderate salary and to combine with it the privilege of engaging in a reasonable amount of private and consulting practice. Such a plan has two advantages: (1) it gives the member of the medical staff increased facilities for maintaining his professional contact and standing and (2) it provides a channel by which adequate and reasonable financial income may be secured.

We come now to the heart of the problem. If such a professor is to utilize his time and energies in a wise and effective manner, he must have at his disposal and *close at hand* hospital facilities for the care of his patients. In our Elliot Memorial Hospital, however, our plans provide for only free and per diem patients. The pay patient is rigidly excluded. Therefore, the logic of the situation leads irresistibly to the conclusion that hospitals must be provided in which pay patients of the members of the staff together with per diem patients can be cared for, or the University is compelled frankly to abandon the plan of full-time clinical teachers. The issue is clearly drawn. For the sake of the part-time men, as well as the so-called full-time men, the latter alternative is unthinkable. But one further difficulty besets us. For the present, and particularly in view of the adoption of the comprehensive building plan, the state can not be expected to provide hospitals for pay patients, even of members of the staff. Therefore, by the very nature of our problem we are driven to the necessity of recognizing that this

type of hospital expansion must be provided for by private gifts. This University at once must seek from one half to three quarters of a million dollars for hospital expansion with the necessary accompanying provision for the housing of nurses and caring for the administrative and service features. It should be pointed out at once that such a hospital would be self-supporting, even to the extent of providing for overhead charges. It would make possible the carrying forward of plans already adopted for the highest standards of medical training in this University. It would hasten the development of a diagnostic clinic. All types of patients—free, per diem, and pay patients—would be given the very best care. The position here taken is unquestionably the logical answer to our present situation. The problem of hospital expansion demands immediate action. No citizen could render a more important service to the University, nor do more to ensure its high place in the Northwest than by providing generously by private gift for the expansion of our hospitals. In the Elliot Memorial Hospital we now have one hundred and ninety-two beds, fifty of which are on the per diem basis. We should have at least five hundred and fifty beds. What the University of Michigan has done we can do. Policies which are successful in other state universities should prove feasible here. The administration stands ready fully to cooperate with the Medical School in bringing about an immediate and adequate expansion of its hospital facilities.

4. *Schools of Agriculture.*—It is doubtless clearly understood by all that our entire Department of Agriculture falls into five main units (1) The College of Agriculture, Forestry, and Home Economics, (2) the School of Agriculture, (3) the Agricultural Extension Service, (4) the Short Courses, and (5) the Experiment Station. The School of Agriculture is intended to train boys to be actual farmers and girls to become efficient home keepers. The School of Agriculture as distinguished from the College is of secondary grade. The University now has such schools at the University Farm, at Crookston, and at Morris. These schools have been effectively organized and have undoubtedly rendered very valuable service to the state.

Under the leadership and upon the initiative of Senator Rask, the last Legislature, on April 25, 1919, voted to establish a fourth School of Agriculture at Waseca where the University already

has a demonstration farm and experiment station. This act reads as follows:

There shall be established at or near the city of Waseca, in the county of Waseca, under the direction and educational supervision of the Board of Regents of the University of Minnesota, a school of agriculture, which shall be a department of the University of Minnesota, under such name and designation as the Board of Regents may determine, and wherein shall be taught such studies and branches of learning as are related to agriculture and domestic economy.

It will be observed that no funds were appropriated for this purpose. It is our understanding of the situation that it was the intention of Senator Rask to secure a decision on the policy involved and to have the University officers prepare plans and make a report to the next Legislature. Accordingly, the Board of Regents on May 21, 1919, voted to request the Dean of the Department of Agriculture to consider the question of establishing a School of Agriculture at Waseca in compliance with Chapter 453, Session Laws of 1919, and within a year to report suggestions with reference to policy and requirements.

During the year those in charge of our three Schools of Agriculture were requested to submit statements regarding the policy involved in the establishment and conduct of secondary schools of agriculture by the University. The three reports were extremely illuminating and brought out very clearly the essential phases of the problems involved. These reports have been studied also by Dean Thatcher of the Department of Agriculture who in his annual report, which appears in this volume, has discussed the question fully, and has presented a keen analysis of the problem. The relationship of this whole subject to the public schools of the state and the new conditions which are produced by the actual operation of the Smith-Hughes bill are fully recognized by Dean Thatcher. In a word, it is quite evident from all of the facts presented that the University is fully justified in operating these secondary schools, and that the policy of establishing a new school at Waseca is entirely wise. It is only natural to anticipate and to assume that in due time still other schools will be located at strategic centers throughout the state. In no sense does the University desire to compete with the public high schools of the state. Our aims and interests are one. We expect to meet the varied educational needs of the

people of Minnesota. Our secondary schools of agriculture are intended to serve, and we believe actually do serve, a constituency which lies quite outside of and beyond the range of the public high school. Any one interested in this problem is urged to read not only Dean Thatcher's report in this volume, but is invited also to consult the reports of Principal D. D. Mayne, of the Central School, of Superintendent C. G. Selvig, of Crookston, and of Superintendent P. E. Miller, of Morris, all of which are on file in the office of the President.

5. *Development of the Comprehensive Building Plan.*—One of the huge problems awaiting attention is the wise, economical, and prompt development of the equipment of the University under the Comprehensive Building Plan. This plan was set forth in some detail in the *Report of the President for 1917-18*, pages 9 to 18 inclusive. Beginning July 1, 1920, the sum of \$560,000 a year for 10 years was made available by the last Legislature. If we include in our totals the funds appropriated for buildings during the fiscal year 1919-20, we have available prior to 1930 the sum of \$6,103,000 for buildings. Strange as it may seem, it will be extremely difficult to provide the necessary buildings with this large sum of money. Building costs are practically double what they were before the war. Our building needs have accumulated seriously. We are definitely committed to certain enterprises such as the Mines Experiment Station. The Board of Regents has already wisely determined that the proposed dormitory systems shall be constructed. A new central library at the earliest possible moment is essential. Not only building costs, but the growth of the University, will add to our difficulties. As a consequence, great patience and wisdom will be required in deciding upon the order in which the buildings will be constructed. On the other hand, this comprehensive building plan offers a real opportunity to secure a highly satisfactory result. The problem can be studied as a whole. Instead of the haphazard construction of buildings, a comprehensive, systematic plan can be laid out and steadily realized. In 1930, the University of Minnesota should have a group of buildings of which the state may be justly proud and which will serve efficiently the needs of its thousands of students.

6. *Relationship to the Carnegie Foundation.*—Prior to January 1, 1920, the University of Minnesota as one of the seventy-

four associated institutions should indicate to the Carnegie Foundation for the Advancement of Teaching whether it proposes to avail itself of the new privileges offered in connection with "The Teachers' Insurance and Annuity Association." The problem is a difficult one for the University, and it is one upon which there should be some expression of Faculty opinion.

It should be clearly understood that these new plans in no way affect the privileges of any member of the staff who was associated with this University prior to November 17, 1915. All such persons will at the time of retirement receive their allowances in accordance with the modified rules. No doubts need be maintained concerning the ability of the Foundation under the new financial arrangements to meet fully the just expectation of the members of the Faculty.

The important phase of the question relates to those members of our Faculty who have joined our staff since November 17, 1915. For them no privileges under the Carnegie Foundation exist. Instead they are offered the privileges of taking out various forms of insurance and annuities to protect themselves against the major risks of life. Premature death, total disability, and old-age disability are contingencies for which any discriminating person should provide. The new plans contemplate the issuing of these policies on the *contributory basis*. That is to say, the member of the Faculty would pay, for example, 5 per cent of his annual income for the annuity and this would be matched by an equal amount from the University. The plan is based on the social philosophy that both the employer and employee are responsible for adequate provision for old age. It is not proposed that the University share the premium for insurance, but only for the annuities or old-age pensions. Serious difficulties seem to beset a state institution which may desire to cooperate in such a plan. The problem has been discussed repeatedly by the Board of Regents, and thus far no decision has been reached. President Henry S. Pritchett, in person, has presented the whole plan to the Board and also at a general Faculty meeting. The subject deserves early and decisive consideration. The University of Michigan has voted to cooperate in the new plans. The literature dealing with the subject can be secured at the office of the President.

THE FUNCTIONS OF A UNIVERSITY

The various problems which have just been discussed are relatively of minor significance when compared to the one, comprehensive, insistent question which asks, "What are the functions of a university?" It is customary to answer that a university has two duties, (1) it must teach its students, and (2) the Faculty, by research and investigation, must make actual contributions to the world's knowledge.

But the war has set the world a-thinking. The traditional answers will not do, or at least they must be given specific and vital content. Universities to-day face a curious and paradoxical situation. On the one hand, the nation as never before is looking to its universities for help and guidance. Education and scientific training were splendidly vindicated during the war. The world has an entirely new attitude of confidence in education because millions of men have seen with their very eyes what education does for a man. University men have shown rare abilities in meeting new situations and solving new problems. In a very real sense, when the war came, the college man and the university professor were *there*. Their real strength came into full play. Their splendid potentialities were speedily developed into actualities. It is recognized now as never before that the future of the world depends upon education. The people understand now that education and democracy are inseparable. On the other hand, this very appreciation of the University has stimulated many people to scrutinize very critically our institutions of higher learning. Citizens are now genuinely concerned about what is being taught, and are deeply interested in all of the conditions which surround our youth. Some say, when they read the somewhat distorted reports of some of the extreme statements of the more radical thinkers, that the universities are hot beds of radicalism. Others denounce the universities as strongholds of conservatism when they read that some professor has been dismissed because his attitude and point of view are inimical to the principles upon which the American Government is established. No doubt, taking the educational world as a whole, facts actually substantiating these contentions can be found. Speaking in general, however, it must not be forgotten that we have just come through the most trying times that universities have met in half

a century, and probably the most overwhelming cataclysm the human race has ever known, and that through it all the predominating note issuing from our seats of learning has been one of sanity, progress, and unquestionable loyalty to the firmly established principles of democracy and true Americanism. Any one who really knows the universities knows that this statement is grounded in fact. The rank and file of American scholars are first and foremost American citizens. They believe that social progress is to be achieved by the regularly constituted methods and channels for the expression of public opinion. Therefore, in spite of these criticisms and the apparent paradox in public opinion which confronts us, we can not escape the conviction that unparalleled opportunities and responsibilities in this new day rest upon our universities. It is to be assumed that our institutions of higher learning will undergo no transforming metamorphosis. They have embodied too much wisdom and truth in the past to be overthrown now. Nevertheless, new emphasis must emerge and new points of view must prevail. Universities must provide, I believe, for performing the following duties:

1. First of all, we simply must insist upon a genuine new emphasis upon accuracy and thoroughness in scholarship. After all is said and done, our universities can probably do no single thing which would be of more value to society than to train a generation of Americans who instinctively work and think with accuracy. One of our outstanding vices in America is superficiality. Whether we are building a railroad, writing a book, painting a picture, or training our youth, we are not willing to insist upon doing the job thoroughly. We have one indisputable test of the products of American scholarship. Presumably from each state in the Union we have sent our best students as Rhodes Scholars to Oxford. The sympathetic and altogether eminently fair and judicious estimate of our achievements in education as personified by these men is not flattering. The tutors at Oxford have stated, upon request, their judgment of these men. Among their published statements occur the following criticisms of American Rhodes scholars: "Our American scholars seem inclined to drift from one subject to another taking a bird's eye view of each, and resting content with that." "They seem to me to lack accuracy and (as a rule) the power of hard grind." "They have been taught nothing very precisely." "They seem very deficient

in scholarship in a wide sense." "They seldom or never settle down to a long spell of thoro work." These are serious indictments but who stands ready to deny them? Many extenuating circumstances may be cited but in the last analysis, we must recognize that American youth must acquire in some way a genuine, unqualified appreciation of thoro-going, accurate work. The last five years in American colleges have been marked by an intellectual seriousness and earnestness which some of the earlier critics would have thought impossible. Our duty now in this new day of world-wide relationships is to focus this intellectual interest upon the absolute necessity of eliminating all careless work and of insisting upon the cultivation of a fine quality of accuracy and thoroness. The ideal is an old one, but its partial realization would mark a new era in American education.

2. Again, in this new day, by some method or organization, we must stimulate and awaken our youth by actual contact with teachers of high quality. By some wholly natural process our young men and women must be aroused to a full use of their powers and potentialities. They must be brought face to face with the vital issues of life. They must be stirred to new depths. In fact, multitudes of college men, returning from the war, will be far more mature than former generations of students. They have thought about some of the ultimate values of life. Colleges must meet this new condition or they will fail utterly in performing their primary tasks. If only we could have less machinery, less externality, less counting of units and hours, fewer rules, regulations, and statutes and more vital contact of man with man, more serious concern for the students' sense of values, more emphasis upon the things of the spirit! In the long run the higher education will be judged by its ability to produce human beings who have been brought into contact with the finest spirits of all the ages, who have actually known as teachers men who have compelled them to face the meaning of life as a whole, and to consider courageously the paths which they are to follow. To be sure, it is at this juncture that we find one difference between a college and a university but our undergraduates deserve just this service and will demand it. In a word, we must help them in the process of becoming virile, wholesome human beings, thoroly alive and all aglow with a passion for service.

3. Furthermore, the student of the new day must be brought as fully and completely as possible into a sympathetic understanding and appreciation of the distinctive movements and regnant ideas of our time. The methods by which this may be done need not be discussed here, but the citizen of the future should acquire such a knowledge of the past and such a comprehension of the present as to be able wisely and constructively to lend his support and influence to the great causes of his day. For example, as a part of the stupendous process by which the world is to achieve democracy, we shall be absorbed for a decade, if not a generation, by the complicated problems arising out of our new international relationships—problems with which international law and jurisprudence seek to deal. Or again, the entire life of a democracy depends upon the soundness and steadiness of its industrial life. The situation in America to-day is critical. No educated man of the next few years can escape this question. He simply must understand the labor movement and be in a position to interpret the various proposals for establishing an industrial democracy. Mr. Albert Mansbridge in discussing universities and labor in the *Atlantic Monthly* for August, 1919, (page 281) says that "no community can afford to let the powerful forces of education and labor develop otherwise than in conscious coöperation." Undoubtedly, the way out in America lies in the direction of mutual understanding and good-will on the part of all the elements concerned. The university man of the future must be prepared to assume his place in this great movement. Upon the actual joining of forces between the intelligent, discriminating citizens and the conservative leaders of labor lies the best hope of solving our present problems. No university of to-day can fail to recognize its function in equipping its graduates to coöperate with the great movements of the day. It can not be done in the classroom alone. The very atmosphere of the place should be saturated with an understanding of the world. Public forums should discuss the issues of the hour. In ordinary daily association students should thresh out their points of view. Members of the Faculty, as many of them do, should mingle with the students and, upon a perfectly normal basis, exchange opinions and judgments.

4. Finally, university men must be marked by sheer, unqualified integrity. It doubtless seems strange to some to record such a statement here. It carries no implication that universities have

been or are lacking in straight-forward thoro-going honesty. Nevertheless, our universities to-day have no more serious task to perform than to train a group of citizens who will be characterized by the utmost sincerity and genuineness and at the same time who will be recognized as such by the people. At the very heart of our national and world situation is the demand for confidence, and mutual good-will. The world to-day trusts America more than any other nation. What America is to the world, the university must be to America. It must stand as never before for disinterested, unprejudiced, unbiased search for the truth. It must train men and women whose very self-respect depends upon their unbending devotion to truth and justice.

One of the pathetic by-products of this war is the utter repudiation of the German system of education. The world now sees that it was the schools and universities of Germany that made this terrible war possible. Mankind now recognizes the menace of a false educational policy. American universities must counteract any possible misinterpretation of their influence.

Moreover, the unescapable lesson of the war is that mankind will never tolerate any nation which seeks to erase the line of distinction between right and wrong. The duplicity, trickery, intrigue, and mendacity of Germany, combined with her deliberate effort to eliminate all ethical considerations from international relationships, explain fully the world's unqualified moral condemnation of a once honored and prosperous people. In fact, Germany's defeat is due in the last analysis to her lack of uprightness. The victory of the Allies makes clear that the only true efficiency is the efficiency of integrity.

Therefore, our universities, in training citizens for citizenship in America and the world, must be saturated and permeated with lofty, ethical standards. Plain, untarnished honesty and integrity must be exalted. They must become a part of the soul of every graduate. He must be so equipped that in the years to come he will instinctively and incessantly oppose all forms of trickery and corruption and will support every decent cause making for the benefit of all the people.

CONCLUSION

Surely, the record of the year is a good one and augurs well for further progress. The duties which must be performed are

fascinating. They are a vital part of the constructive work of the world.

I can not conclude without expressing very emphatically my sincere appreciation of the manner in which the members of the Board of Regents accept their duties and give without stint of their valuable time and abilities for directing the affairs of the University. They contribute constantly to the constructive solution of complicated problems. Few citizens realize the debt of gratitude which is due to these men who day after day give of their best for the people of Minnesota.

Likewise, I must record in no formal way my gratitude to the members of the Faculty and staff, and especially to the members of the Administrative Committee of the University Senate, for the whole-hearted way in which they have coöperated with the administration. The past year has placed heavier burdens upon our organization than it was expected to carry, but it has stood the test remarkably. Not once during the entire year, marked by rapid and transforming changes in organization, have I been conscious of strain in our very happy and cordial relationships.

Very respectfully submitted,

M. L. BURTON, *President*

September 15, 1919.

THE COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

To the President of the University:

SIR: I beg leave to submit the following report on the work of the College of Science, Literature, and the Arts for the year 1918-19:

All phases of the college work have been profoundly affected by the country's participation in the war, and the effects of the war have been much greater during the past year than during 1917-18.

The College expected a further decrease in the number of students and the number of the Faculty had accordingly been reduced to the equivalent of 127 full-time teachers.

The plans for the Students' Army Training Corps which were made in August and September, 1918, created an entirely new and unexpected situation for the College. It was evident at once that the enrollment in the College would be reduced by the number of all young men who were eligible for military service. When college opened, the registration showed 1,258 civilian students, 1,124 of whom were women and 134 men not eligible for military service. This enrollment was a little more than half that of the fall of 1917, but the work of the College is not measured by its enrollment.

The only source of accurate information regarding the work done by the College is found in the reports made by instructors showing the students actually taught in their classes. These reports are summarized in a table below. This table shows that the total teaching done in the College in the fall quarter of this year was greater than that done in 1917-18 and less than that done in 1916-17. The total number of student credit hours (39,326) is equal to the full time of 2,622 students. Of this total, one half (19,581 credit hours) represents teaching done for the S.A.T.C.; and nearly one half of this latter (9,540 credit hours) was in subjects which were not accredited in the departments of this College. In other words, one half of the work done in the fall quarter consisted of instruction for men registered in the S.A.T.C. and nearly one fourth of all the college work was in subjects not regularly offered to the students of this College. The task of the College was rendered unusually difficult by the fact that half of its students were civilians who desired regular college work, and half were S.A.T.C. men who had to be classified by age and according to the branch of service they intended to enter, and assigned to the lines of work most likely to be of use to them.

Certain special courses of study prescribed for the S.A.T.C. were organized and conducted by members of this Faculty. The "War Issues" course was organized by Professor A. B. White and the staff of instructors included forty members of this Faculty. In addition, four members of the Department of Rhetoric and Public Speaking taught 594 S.A.T.C. students in a combined course of rhetoric and war issues. The

work for the Quartermaster Corps and the Ordnance Corps was given chiefly by the Department of Economics, and that for the course in Map Reading chiefly by the Department of Geology. Special courses in Navigation and Aerial Navigation were given by the Department of Astronomy. The supervised study rooms were first organized by the Dean of this College and afterward put in charge of a committee of which Assistant Professor Burkhard was chairman.

The report on the Collegiate Section of the S.A.T.C. showed that about one half of the S.A.T.C. men enrolled in this College would not have come to college under normal conditions. Making allowance for those who stated that they were financially unable to go to college, it appears that between 800 and 900 young men, or about one third of all the students in the College, were not normal University material. They consisted of those high-school graduates who do not ordinarily come to college. These students even from the very first, when the spirit was good and the interest high, showed themselves unable to accomplish the usual tasks set before our college classes. They were unable to do the work regularly carried by college students, altho the young women successfully combined this work with a large amount of Red Cross work and other war service. The better half of the S.A.T.C. carried their academic work successfully until the latter part of the fall quarter, after the armistice was signed. From that time on the poorer, students habitually slept in their classes and the better ones slumped in their work until they became ashamed of it and most of them left for home when discharged, without taking examinations or claiming credit for the work of the quarter. From the point of view of scholastic attainments in the line of regular college work the S.A.T.C. was an unequivocal failure and the deleterious effect on student morale has been felt throughout the year.

What interests us now in this connection is not the bad planning and mismanagement of the S.A.T.C.,—all that is past and perhaps was unavoidable; but the influence of many men among our students who were unfit for University work. If all our students had been of University caliber the failure of the military staff to coöperate with the academic authorities, the withdrawal of men from classes and study rooms for extra military duties, the disparagement of studies by the military officers would not have had such ill effects. It is very probable that the presence of a large number of men who were not properly students at all and who would never have been in a University but for the S.A.T.C., furnished the essential conditions for the demoralization which the dual control and the low grade of military officers brought about.

This only points in a striking way to the danger which constantly attends the effort to give a University education to people who are unfitted for it. The University receives every year a certain number of such persons and this College drops from its rolls approximately 15 per cent of its students each year who belong to this class. The College will be able to do much better service to the state when it becomes possible to distinguish persons unsuitable for college education and bar them from entering.

It is a matter of common belief that there are many boys and girls throughout the state who would make good University students if they had the financial means to enable them to go to college. The answers made by the S.A.T.C. men to the questionnaire showed that fully 10 per cent of them would not have come to college because of financial obstacles. One of the most valuable services that the University could render the state would be to carefully study this matter, discover how many promising students require financial support and devise plans by which the state could educate these youths for the public good.

A. FACULTY

The unexpected volume of work falling upon the College during the fall quarter and the continued growth of certain departments during the winter and spring made necessary several emergency additions to the Faculty. Some of the special needs were met by the return of regular members of the staff from war service. As the following table indicates, the Faculty was increased during the year from the equivalent of 127 full-time teachers to 174 persons equivalent to 142 full-time teachers for the whole year.

The following table shows the constitution of the Faculty for the past three years:

	1916-17	1917-18	1918-19	
			No. of persons	Equivalent to full time
Professors	37½	42	45	39
Associate Professors	6	8½	11	9
Assistant Professors	35	35	32	28½
Professorial Lecturers	3	2	4	4
Instructors	58	43	39	34½
Lecturers .....	..	2	2	4
Assistants and Teaching Fellows equivalent to full time.....	15	19	34	23
	<hr/>	<hr/>	<hr/>	<hr/>
	154½	151½	174	142
Absent on leave.....	5½	17½	32	
	<hr/>	<hr/>	<hr/>	
In residence	149	134	142	

The following changes occurred in the professorial ranks of the Faculty during the year.

Resignations.—The following presented their resignations during the year: Hardin Craig, Professor of English, to accept appointment as Head of the Department of English at the University of Iowa; Henry T. Moore, Assistant Professor of Psychology, to accept a professorship at Dartmouth College; Joseph Peterson, Assistant Professor of Psychology, to accept a professorship at the George Peabody College for Teachers, Nashville; E. C. Robbins, Assistant Professor of Economics, to enter Red Cross Work; Hermon L. Slobin, Assistant Professor of Mathematics, to engage in work for the Jewish Welfare Board; and Robert M. Yerkes, Professor of Psychology, to become Director of a Division of the National Research Council.

Leaves of absence.—During the year many leaves of absence for war service were continued, some new ones were granted and some came to an end when men discharged from the United States Army were able to return to their work.

Sabbatical furlough: W. S. Davis for the spring quarter.

On leave without pay: Oscar W. Firkins, Professor of Comparative Literature, for the spring quarter, to become dramatic critic for *The Review*, New York; C. R. Stauffer, Professor of Geology and Mineralogy, to engage in field work in Texas and Oklahoma; and A. W. Johnston, Assistant Professor of Geology and Mineralogy, to do work in the mid-continent oil and gas field.

On leave for public service connected with war: Commissioned officers in the United States Army or Navy; Hardin Craig, Professor of English (returned January, 1919); L. W. McKeehan, Associate Professor of Physics; H. T. Moore, Assistant Professor of Psychology; George N. Northrop, Assistant Professor of English; E. H. Sirich, Assistant Professor of Romance Languages; A. L. Underhill, Assistant Professor of Mathematics; Herbert Woodrow, Associate Professor of Psychology (returned January, 1919); Robert M. Yerkes, Professor of Psychology.

For civilian service related to the war: George N. Bauer, Professor of Mathematics, for organization of War Savings Clubs and Societies; Roy G. Blakey, Associate Professor of Economics, for work with the War Trade Board; W. S. Cooper, Assistant Professor of Botany, for work with the Y.M.C.A.; E. Dana Durand, Professor of Economics, for work with the Federal Food Commission; Guy S. Ford, Professor of History, Director of the Division of Education of the Committee on Public Information (returned January, 1919); John H. Gray, Professor of Economics, Board of Appraisers, War Department; F. F. Grout, Associate Professor of Geology, for work with the United States Shipping Board (returned February, 1919); W. E. Hotchkiss, Director of Business Education, for work with the United States Shipping Board (returned April, 1919); Alfred E. Koenig, Assistant Professor of German, Americanization Director for the Y.M.C.A.; Wallace Notestein, Professor of History, for work with the Committee on Public Information and the Peace Commission; Chessley J. Posey, Assistant Professor of Geology, for work with the Bureau of Research of the War Trade Board (returned January, 1919); E. C. Robbins, Assistant Professor of Economics, for work with the Red Cross; John T. Tate, Associate Professor of Physics, for research work with the Bureau of Standards (returned January, 1919).

Promotions.—The following were promoted from the rank of Instructor to that of Assistant Professor: Ralph M. Barton, in Mathematics; James T. Hillhouse, in Rhetoric.

From Instructor to Professorial Lecturer: Pedro Henríquez-Ureña in Romance Languages; L. F. Miller in Physics.

To Assistant Dean: Royal R. Shumway, Associate Professor of Mathematics.

The names of several others whose promotions took effect at the beginning of the year 1918-19 are included in the Report of 1917-18.

New appointments.—The following were appointed to begin service during the year 1918-19: Lee I. Knight, Professor of Botany; Oscar W. Junek, Assistant Professor of Americanization; R. C. Line, Assistant Professor of Economics; T. H. Sanders, Assistant Professor of Economics.

The following were appointed to begin service with the academic year 1919-20: Dunham Jackson, Professor of Mathematics; R. E. Cushman, Associate Professor of Political Science; Richard Elliott, Associate Professor of Psychology and Chairman of the Department; William S. Foster, Associate Professor of Psychology; Manuel C. Elmer, Associate Professor of Sociology; Raymond B. Moley, Associate Professor of Political Science; Mabel R. Fernald, Assistant Professor of Psychology; Ross L. Finney, Assistant Professor of Educational Sociology; William L. Hart, Assistant Professor of Mathematics; J. A. Lundquist, Assistant Professor of Rural Sociology; John B. Morgan, Assistant Professor of Psychology; Norman J. Radder, Assistant Professor of Journalism; Quincy Wright, Assistant Professor of Political Science; Nathaniel E. Griffen, Professorial Lecturer in English.

Faculty advisers for students.—A committee of advisers was organized in January and has served through the winter and spring quarters of this year. The functions which this Committee has attempted to perform are: to advise students with reference to the requirements of the College, to the selection of studies and the sequence of studies, to their programs and registration; to be helpful to students with regard to their methods of study and with regard to the relation of their living conditions and their other activities to their University work; to direct the student to the best available sources of information regarding the choice of a vocation or profession and the requirements of adequate preparation therefor, and to place him in the hands of those who are best able to guide him; to arouse in every student an aspiration to do the highest order of work of which he is capable and to present to the better students the advantages of the Honors Course and of graduate study; and to help the student to understand his own problems and lead him to accept the responsibility for finding the best solutions.

An attempt has been made to select advisers with reference to their personal qualifications for dealing with students. It is intended that each adviser shall have his teaching schedule reduced and that he shall take care of a rather large number of students (up to one hundred in the freshman class). In the sophomore, junior, and senior years the work of the advisers becomes more and more limited in scope as the students come under the expert direction of various departments, or of the Vocational Adviser for Women.

The advisers carry on their conferences with students in a cheerful and well-appointed room where they are provided with clerical help and with bulletins, tables, and charts for the information of students.

THE PRESIDENT'S REPORT

B. STUDENT BODY

Enrollment.—The following table shows the attendance during the last two years:

	1917-18			1918-19		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
Seniors	53	209	262	53	257	310
Juniors	128	315	443	97	245	342
Sophomores	246	311	557	195	336	531
Freshmen	471	468	938	439	464	903
Unclassed	36	78	114	29	81	110
	934	1,381	2,315	813	1,383	2,196

Those registered in other colleges and taking work in this College equivalent to 353

The total number of men and women registered in the College for the past five years:

	1914-15	1915-16	1916-17	1917-18	1918-19
Men	864	1,089	1,192	934	813
Women	954	1,260	1,289	1,381	1,383
Total	1,818	2,349	2,481	2,315	2,196

The number of men in 1918-19 was greatly reduced by the fact that the S.A.T.C. men were not registered in the College, but in a special division.

The number of students coming from other states is still below normal:

	1914-15	1915-16	1916-17	1917-18	1918-19
Percentage of total.....	8.3	10	16	11	10.4

The following table shows the amount of teaching done by each department during the year in comparison with the first semester of the preceding two years:

	1916-17	1917-18	1918-19		
	First semester	First semester	Fall	Winter	Spring
Animal Biology	2,751	2,049	2,144	2,028	1,418
Astronomy	327	225	468	321	291
Botany	2,054	1,461	1,339	976	728
Comparative Philology	192	191	189	156	50
Economics	3,233	2,568	3,888	1,561	1,799
English	1,750	1,999	2,120	1,632	1,458
Geology and Mineralogy.....	1,966	1,770	995	1,053	1,343
German	3,486	2,196	995	938	859
Greek	129	86	63	153	134
History	3,157	3,604	3,967	3,595	3,068
Latin	402	354	411	189	237
Mathematics	2,876	2,126	2,658	2,150	2,184
Music	723	628	663	641	549
Philosophy	2,247	1,542	585	414	657
Psychology			993	1,227	973
Physics	1,735	1,501	1,981	1,245	1,414
Political Science	1,509	1,185	2,709	1,344	1,950
Rhetoric and Public Speaking.	5,950	4,850	4,956	3,935	3,363
Romance Languages	4,697	5,834	5,713	5,152	4,352

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	1916-17	1917-18	1918-19		Spring
	First semester	First semester	Fall	Winter	
Scandinavian	422	314	203	192	240
Sociology and Anthropology...	1,246	413	960	710	.....
Social and Civic Work.....	.....	1,074	459	589	.....
Anthropology and Americanization Work .....	.....	.....	.....	.....	702
Sociology and Social and Civic Work .....	.....	.....	.....	.....	1,277
Special Lectures for War Issues .....	.....	.....	405	.....	.....
Total	40,774	36,655	39,326	30,201	29,047

C. CURRICULUM

The decision of the University to adopt the four-quarter plan has required many minor adjustments to that system. The Faculty also began the discussion of the requirements in the curriculum and authorized its committee to make a fundamental study of the curriculum next year. Two significant changes were voted to take effect in 1919-20. By declaring the standard course in the Junior College to be the five-credit-hour course, the Faculty caused the usual student's program to be changed from five three-credit courses to three five-credit courses. It is the belief of the Faculty that the student has divided his attention among too many subjects, and that three-credit courses in terms of twelve weeks do not offer sufficient time to cover the ground that should be covered in elementary and foundational courses or to secure satisfactory training in the methods of a subject.

The second change was to increase the requirement in English throughout the freshman year from a three-credit course in Rhetoric to a five-credit course in which Rhetoric and English Survey are combined.

The Faculty instructed each group of departments to appoint a committee to work out groups of courses correlated with reference to typical major interests or vocations, these outlines to serve as guides to the advisers of students.

The following new courses of study have been approved by the Faculty:

A four-year course of training for Americanization Work leading to the degree of Bachelor of Science.

A five-year course of training for the Diplomatic and Consular Service.

A five-year course of training for State and Federal Administration.

A five-year course in Municipal Administration and Engineering. This course is offered also by the College of Engineering to its students and the general direction of the course is in the hands of a committee including members of both Faculties.

In each of these three courses the student may receive the Bachelor's degree at the end of four years and, if he complies with the requirements of the Graduate School, the Master's degree at the end of the fifth year.

A five-year combined course in Arts and Nursing, in which the student spends the equivalent of three years in this College and two years in the School for Nurses. The student will receive the degree of Bachelor of Science and the certificate of Graduate in Nursing.

These new courses are an expression of the continued policy of the College to outline for the guidance of students groups of studies extending through a period of years which will give adequate preparation for well defined vocations. If the College is enabled to do this as rapidly as the scope and requirements of new vocations become well understood, the semi-professional needs of all students can be properly met with the minimum of administrative machinery and with the least confusion for the student in arranging his course of study.

The Board of Regents decided at its June meeting to take the Department of Economics and the course in Business Education out of this College and to establish a new School of Business. The School of Business will admit students after two years of work in this College.

Upon the many supposedly new questions of educational policy it is too early for the College to formulate new plans. Most of them are not new but are merely old questions brought into a new light or a sharper focus by the conditions of the war. Some of them are already met by the policies regarding vocational education and guidance upon which the College had entered before the war. Others may well become the subject of study and discussion by the Faculty in succeeding years.

Respectfully submitted,

J. B. JOHNSTON, *Dean*

THE COLLEGE OF ENGINEERING AND ARCHITECTURE

To the President of the University:

SIR: I submit herewith my report for the year 1918-19:

Army training.—The College opened in the fall of 1918 with about 90 per cent of the students in the S.A.T.C. The fact that the Government paid all the students' expenses, and the army pay in addition, induced more young men to enter the College of Engineering and Architecture than ever before. At the opening of the college year, registration was as follows:

Freshmen	575
Sophomores	128
Juniors	68
Seniors	46
Total	817

The Government requirements increased the number of students, particularly in the Departments of Mathematics, Drawing, and Surveying. In Surveying, at one time there were approximately 900 students. This increase in the number of students required a large increase in the Faculty. We were very fortunate in securing practicing engineers and business men, many of whom had had teaching experience, to carry on the teaching work required by the Government. These men took up the work of teaching at considerable sacrifice to themselves and they are to be commended for the excellent work that was done under the circumstances.

The vocational training started on June 15 of the previous school year and was continued into the year 1918-19 with an added number of students. The following number of vocational men were taken into the Department:

June 15—	
Auto mechanics	260
Radio operators	49
Blacksmiths	23
Machinists	32
August 15—	
Auto mechanics	270
Radio operators	66
Telephone electricians	98
October 15—	
Telephone electricians	183

Owing to the epidemic of influenza the Government decided not to send the quotas during the height of the epidemic. The armistice was signed in November before the full quota of men had been received. Shortly after signing the armistice on November 11, the Government decided to give up the S.A.T.C., both college and vocational branch, and it

was discontinued December 22, 1919. This sudden dropping back to the regular collegiate work involved this College in a very difficult problem. It was necessary to drop 10 members of the Faculty who had been employed for the special army instruction. A few of the army instructors were continued to take up the regular collegiate work owing to the attendance being larger than in the previous year, and the fact that some members of the Faculty, during the year, had dropped out to go into Army service.

The regular collegiate work for the year began December 30 with an attendance as follows:

Freshmen	231
Sophomores	122
Juniors	81
Seniors	51
Post-seniors	4
Unclassed	8
Total	497

During the year the upper classes were increased in size, largely by the men returning from army duty to take up their college work, so that at the end of the year our attendance was approximately as follows:

Freshmen	215
Sophomores	120
Juniors	84
Seniors	53
Post-seniors	4
Total	476

The fact that many men who entered the army expected to return to college may have a material effect upon the attendance next year and I should expect the attendance in the year 1919-20 to be larger than we have ever had before in the College of Engineering and Architecture.

Curriculum.—The requirements of the Government changed considerably the regular course in the College of Engineering and Architecture, so that it was necessary, in order to coördinate the regular course with the work that the men had during their army training, to change the curriculum in the College. It was also changed in order to accommodate the men returning from the war and to allow greater flexibility in the arrangement of work. It has been the policy of many engineering colleges to make a very rigid curriculum. This, I believe, is a mistake and the curriculum of the Engineering College should be made more flexible than it has been in the past. The students should be given opportunity to take elective work, both in all the engineering branches and in other departments of the University. These electives should not be absolutely free but should be subject to the approval of the classifiers. In the senior year it would be desirable that the students' work should be largely elective.

Equipment.—One of the greatest needs of the College of Engineering and Architecture is for funds to properly equip the Experimental Laboratory. The Experimental Department has a splendid building and some good equipment but much of it is obsolete and only fit for a museum. It will take \$30,000 to \$40,000 to properly equip this laboratory. The most conspicuous items needed are an electric dynamometer and a refrigerating plant. The Corliss engine now in the old power plant and the steam turbines in the power plant can be eventually transferred to the Experimental Department, adding materially to its equipment.

Experiment Department.—During the year there has been an attempt made to reorganize the Experimental Department. There are two possible plans that should be considered in the reorganization of this Department. One is to make this Department essentially an Experiment Station and if the bills now pending before Congress should pass, there would be funds provided partly by the United States Government for carrying on this work. This has been done in other institutions of which the University of Illinois is the most conspicuous. If this is done it will be necessary eventually to establish separate laboratories for Civil and Mechanical Engineering, and for Architecture. The other plan is to divide the work of the laboratory into its natural divisions and give each department charge of the division of the laboratory pertaining to its own work. If this is done it is necessary to have someone to coordinate the work of the various departments which come under one roof. A step in this direction was made during the year. Testing machines were placed in charge of the Engineering Mechanics Department and Professor Holman was appointed to look after the work. The Civil Engineering Department took over the work of the hydraulic laboratory, of the cement laboratory, and of the Good Roads Department. Such members of the Experimental Faculty as could be transferred, were transferred to the Civil Engineering Department. I believe that the results obtained even in the short time, go to show that the change was warranted. The portion of the laboratories pertaining to Mechanical Engineering was put in charge of the Mechanical Engineering Department but the Faculty was not transferred.

There has been a tendency on the part of the Experimental Department to give too many special courses. For example, there has been a special laboratory course in Steam Engineering for Mining Engineers, a special course for Civil Engineers, and a special course for Mechanical Engineers, all under the same subject. With very little trouble these courses could be arranged so that they could all be given as one course. This is only cited as an example. There are many other courses that could be cited in this and other departments where combinations of courses can be made. Such a combination of courses would not impair the efficiency of instruction and would greatly increase the ease of classification, reduce the hours of instruction and the work of the Administration, besides tending to a greater unity in the College of Engineering and Architecture.

In carrying on the work of instruction in the Experimental Laboratory I believe there should be one or two fundamental laboratory courses teaching the use of instruments and the calibration of instruments with some fundamental experiments on steam and gas engines. These preliminary courses can be followed by a more detailed course in the various branches, such as gas engines, steam engines, hydraulics, etc. After a student has completed these one or two fundamental courses, I believe he should then take up an individual problem which should be complete in itself and oftentimes can assume the nature of research work. By such an arrangement of courses much of the work in this Department could be changed from routine work with great advantage both to the institution and the staff.

Laboratory work in mathematics.—During the last year, a distinct departure was made from the usual method of teaching mathematics, and a three-hour period was included in each section of freshman Mathematics. In this laboratory work, the student is given an opportunity to study the actual application of mathematics in the laboratory. It also brings the instructor in very much closer touch with the student and gives him an opportunity to correct the student's difficulties. This method was tried during the year with great promise of success and both students and Faculty were pleased with the results, and I believe it should be continued and enlarged to include laboratory work in all of the courses in Mathematics, including Calculus. Such a policy, however, will mean an increase of one or two men in the instruction force of the Mathematics Department. The increased efficiency obtained by this method of teaching will warrant any additional expense that may be incurred.

Scholarships.—There has been established, during the year, by the United States Radiator Corporation, a scholarship in heating research. During the year there were carried on a series of experiments on transmission of heat through plate glass, common glass, and with double windows. There were also carried on some experiments on the loss of heat by radiation in cast-iron radiators. These experiments were of a very unique character, no study of this kind ever having been made before to my knowledge. We have now two additional scholarships in prospect for the Department of Engineering and Architecture which will be established by manufacturers to carry on research along their own lines. These will be accepted with the distinct understanding that all research work done shall be public property. There is a possibility of establishing many scholarships of this kind and I believe they should be encouraged.

Affiliation with state departments.—During the year, at the request of the Tax Commission, the Civil Engineering Department of the University of Minnesota agreed to assist in the appraisal of the water power properties of the state, and arrangements have been made to carry on this work.

Arrangements have also been made with the State Highway Commission of the state to carry on their experimental work in the University laboratories, and this is now being done. The State Highway Commission is furnishing two men during the summer, and paying the salary of one

of the University instructors, to carry on this work. I believe that co-operation of this kind is very desirable and increases our research facilities as well as improving the work of instruction in the Department.

During the winter I was asked to accept the position as Director of Research Laboratories for the American Society of Heating and Ventilating Engineers located at the United States Bureau of Mines in Pittsburgh. The opportunity seemed so exceptional that I accepted the position and resigned as Dean of the College of Engineering and Architecture with great regret. I feel that the Department of Engineering and Architecture has a promising future and I shall always take great interest in its welfare.

Respectfully submitted,

JOHN R. ALLEN, *Dean*

THE DEPARTMENT OF AGRICULTURE

To the President of the University:

SIR: I submit herewith a report of the work of the Department of Agriculture for the eleven months ending June 30, 1919.

ORGANIZATION

The general plan of organization which was described in last year's report has been in successful operation for nearly two years and seems to meet well the need for definite assignment of administrative responsibility and outlining of individual fields of work.

Subject-matter groups.—One new group of this type, as described last year was organized during the current period; namely, the Agricultural Engineering Group, consisting of the Divisions of Farm Engineering and Drainage. Professor William Boss, the Chief of the Division of Farm Engineering was chosen as chairman of the new group.

Administrative assignments.—Because of the leave of absence of Dr. W. W. Cumberland, Dr. John D. Black, of the Department of Economics of the University was appointed as Acting Chief of the Division of Research in Agricultural Economics for the year. Following the resignation of Professor I. D. Charlton, William Boss was appointed as Acting Chief of the Division of Farm Engineering and Fred G. Dustin as Assistant Director of vocational training for army men, the latter appointment terminating with the discontinuation of the Students' Army Training Corps. During the absence of Professor A. V. Storm, the Dean of the Department was designated as Acting Director of Short Courses and Acting Head of the Department of Agricultural Education.

Changes in personnel.—The following changes in the membership of the teaching and research staff of professorial rank occurred during the year:

Resignations.—J. L. Mowry, Associate Professor of Agricultural Engineering; T. G. Paterson, Associate Professor of Animal Husbandry; R. C. Ashby, Assistant Professor of Animal Husbandry; Sylvia Campiglia, Assistant Professor of Textiles and Clothing; Grace I. Williams, Assistant Professor of Foods and Cookery; B. M. Gile, Assistant Professor of Agricultural Education; Richard Wellington, Assistant Professor of Horticulture.

Leaves of absence granted during the year.—Professor J. T. Stewart, for military service, leave extended from previous year; Assistant Professor W. W. Cumberland, for service with the War Trade Board; Professor J. H. Allison, for nine months beginning January 1, 1919, for war emergency work with the United States Forestry Service; Assistant Professor R. A. Dutcher, for service in the Sanitary Corps of the United States Army, beginning November 10, 1918 (returned to duty, January 1, 1919); Associate Professor F. W. Peck, for service in the United States Department of Agriculture, beginning May 1, 1919.

Professor A. V. Storm was on sabbatical furlough from January 1 to August 1, 1919, for the purpose of graduate study.

Appointments.—

Clarence Henry Eckles, Professor of Dairy Husbandry

B.S.A., 1895, M.S., 1898, Iowa State College; Graduate Student, University of Wisconsin, 1896-97, University of Goettingen, 1904-5; Assistant Dairy Bacteriologist, Iowa Agricultural Experiment Station, 1896-1901; Professor of Dairy Husbandry, University of Missouri, 1901-19.

Joseph Clayton Cort, Assistant Professor of Dairy Husbandry

B.S., 1914, M.S., 1915, Iowa State College; Extension Instructor Dairying, Iowa State College, 1915-18.

Walter Henry Peters, Professor of Animal Husbandry

B.S.A., 1908, Iowa State College; Professor of Animal Husbandry, Manitoba Agricultural College, 1908-14; Animal Husbandryman, North Dakota Agricultural Experiment Station, 1914-18.

Ward Vladimir Gousseff, Assistant Professor of Animal Husbandry and Dairying, at Crookston

B.S., 1914, Iowa State College; Instructor in Agriculture, Owatonna, Minn., High School, 1914-16; County Agent, Steele County, Minn., 1916-18.

Lee Irving Knight, Professor of Plant Physiology

B.A., 1902, B.S., 1909, Ph.D., 1913, University of Chicago; Assistant in Botany, University of Illinois, 1908-9; Assistant in Botany, University of Chicago, 1910-13; Plant Physiologist, West Virginia Agricultural Experiment Station, 1913-18.

Henry William Vaughan, Professor of Animal Husbandry

B.S.A., 1908, M.S.A., 1909, Ohio State University; Instructor in Animal Husbandry, 1909-10, Assistant Professor, 1910-12, Ohio State University; Assistant Professor of Animal Husbandry, 1913-14, Associate Professor of Animal Husbandry, 1914-17, Professor, 1917-19, Iowa State College.

Norman John Radder, Assistant Professor of Rural Journalism

B.A., 1917, University of Wisconsin; Instructor in Journalism, University of Arkansas, 1918-19.

William Boss, Professor of Farm Engineering

Instructor in Engineering, School of Agriculture, University of Minnesota, 1893-1907; Commercial Manufacturing Business, 1907-19.

Leroy Sheldon Palmer, Associate Professor of Agricultural Biochemistry

B.S., 1909, M.A., 1911, Ph.D., 1913, University of Missouri; Research Work in Dairy Division, United States Department of Agriculture, 1909-13; Assistant Professor of Dairy Chemistry, University of Missouri, 1913-19.

Harry Hazleton Knight, Assistant Professor of Entomology

B.S., 1914, Ph.D., 1919, Cornell University.

George Elmer Holm, Assistant Professor of Agricultural Biochemistry

B.S., 1914, Carleton College; M.S., 1916, Ph.D., 1919, University of Minnesota; Principal High School, Dawson, Minn., 1914-15; Research Assistant in Agricultural Biochemistry, University of Minnesota, 1917-18.

Forrest Williams McGinnis, Assistant Professor of Agronomy

B.S., 1912, Oregon Agricultural College; M.S., 1918, Cornell University; Instructor in Farm Crops, University of Minnesota School of Agriculture, 1918-19.

Promotions.—Phillip A. Anderson from Instructor to Assistant Professor of Animal Husbandry; Clara Brown from Instructor to Assistant Professor of Home Economics; Maude Miller from Instructor to Assistant Professor of Home Economics; E. O. Hanson from Instructor to Assistant Professor of Dairying; Willard L. Boyd from Assistant Professor to Professor of Veterinary Medicine; William P. Dyer from Instructor to Assistant Professor of Agricultural Education; Herbert K. Hayes from Associate Professor to Professor of Plant Breeding; Arthur G. Ruggles from Associate Professor to Professor of Entomology; P. E. Miller from Assistant Professor to Professor of Agronomy at Morris; Theodore A. Erickson, William A. McKerrow, and Frank E. Balmer from Assistant Professor to Associate Professor of Agricultural Extension; R. Adams Dutcher from Assistant Professor to Associate Professor of Agricultural Biochemistry; May Secretst from Assistant Professor to Associate Professor of Home Economics Extension; Harry B. Roe from Assistant Professor to Associate Professor of Farm Engineering; Louis B. Bassett from Assistant Professor to Associate Professor of Farm Management; Joseph C. Cort from Assistant Professor to Associate Professor of Dairy Husbandry; Marion Weller from Assistant Professor to Associate Professor of Textiles; Harriet Goldstein from Assistant Professor to Associate Professor of Drawing and Design; Alice Biester from Assistant Professor to Associate Professor of Nutrition; James B. Torrance from Instructor to Assistant Professor of Farm Engineering; Georgina Lommen from Instructor to Assistant Professor of Agricultural Education; Robert C. Dahlberg from Instructor to Assistant Professor of Agricultural Botany; George G. Glick from Instructor to Assistant Professor of Rhetoric; Phillip S. Jordan from Instructor to Assistant Professor of Animal and Dairy Husbandry at Morris.

PUBLICATIONS

During the year, members of the staff of the Experiment Station contributed a total of 56 articles to various scientific journals, these articles reporting progress which had been made on different problems which have been under investigation in the Station laboratories and fields. Eight other articles giving a less technical discussion of scientific information were authorized for publication in general popular magazines.

Experiment Station Bulletins nos. 175 to 182, comprising a total of 310 pages and 59,500 copies, were issued during the year; while three numbers, totalling 176 pages and 35,000 copies were reprinted. Four annual and special reports of the Central Station and Substations, containing 300 pages and totalling 13,000 copies, were also issued.

One number of the Farmers' Library series (no. 65), containing 12 pages was printed, in an edition of 75,000; and 10,000 copies of the twelve-page No. 10, were reprinted.

In the Special Series, 14 bulletins (nos. 30 to 43, inclusive), totalling 158 pages and 201,500 copies, were printed for the first time; while three numbers (23, 24, and 28), 32 pages, 23,000 copies, were reprinted during the year.

Six miscellaneous informational circulars, bulletins or posters, totalling 77 pages and 134,000 copies, were printed.

These publications are reviewed in the annual reports of the Director of the Experiment Station and of the Director of Agricultural Extension Work. They are mentioned here, however, as an indication of the volume of material which is annually published as a result of the investigational work or as a part of the extension work of the Department.

SPECIAL WAR-TIME ACTIVITIES

From the beginning of the year 1918-19 until after the signing of the armistice in November, the activities of the Department were largely directed toward the continuation of the war work detailed in the 1917-18 Report. A number of additional members of the staff were released for military or other Government service and a number of new experimental and educational projects were initiated.

The Division of Farm Engineering continued to serve the Government in the training of vocational units of the Student Army Training Corps. Three detachments of about 550 men each completed the course. The organization of the fourth detachment was delayed by the influenza epidemic and was finally countermanded upon the signing of the armistice. A total of 1,628 men completed the work in the three detachments.

The organization of the Collegiate Section of the Student Army Corps, with the attendant uncertainty of opportunity for assignment to officers' training camps of students who elected an agricultural course, made it seem desirable to advise students to register for one of the special war courses recommended by the Committee on Education and Special Training. As a result very few classes in Agriculture were organized during the first quarter. Some of the members of the staff thus released from teaching duties transferred their energies to experiment station work and made it possible to continue important war-time projects which otherwise would have had to be abandoned on account of the impossibility of obtaining other experienced station workers to fill the places of those who had left for military or other important Government service; while others were loaned to other colleges or departments of the University to assist in the instruction of the collegiate section of the Student Army Training Corps.

Edward G. Cheyney, Professor of Forestry, served as instructor in War Aims.

Edward M. Freeman, Professor of Plant Pathology and Botany and Dean of the College of Agriculture, Forestry, and Home Economics, served on a special committee of the Administrative Committee of the Senate to organize the Student Army Training Corps registration and advisory system.

Robert C. Lansing, Assistant Professor of Rhetoric, served as instructor in War Aims.

THE PRESIDENT'S REPORT

Clarence J. Morrow, Assistant Professor of Agricultural Biochemistry, served part time in the School of Chemistry as instructor in civilian classes in Chemistry to relieve School of Chemistry instructors for S.A.T.C. instruction.

Harry B. Roe, Assistant Professor of Farm Engineering gave instruction in the College of Engineering in Surveying.

William M. Shaw, Assistant in Soils, was temporarily transferred (part of salary paid from School of Chemistry budget) to the School of Chemistry for laboratory assistance.

Rodney M. West, Secretary of the Department, served on the Special Committee of the Administrative Committee of the Senate appointed to organize the registration of S.A.T.C. students, and later organized the class attendance reporting system and served as University Recorder in charge of this work.

John J. Willaman, Assistant Professor of Agricultural Analysis gave instruction in Chemistry in the School of Chemistry.

REGISTRATION OF STUDENTS

The following table compares the registration in the Department of Agriculture for the year 1918-19 with that for 1917-18:

	MEN		WOMEN		TOTAL	
	1918-19	1917-18	1918-19	1917-18	1918-19	1917-18
I. COLLEGE OF AGRICULTURE						
Agriculture						
Seniors	21	44	1	....	22	44
Juniors	34	51	....	1	34	52
Sophomores	37	64	1	....	38	64
Freshmen	45	73	....	1	45	78
Unclassed	9	3	....	....	9	3
Total	146	239	2	2	148	241
Forestry						
Seniors	3	4	....	....	3	4
Juniors	5	6	....	....	5	6
Sophomores	3	7	....	....	3	7
Freshmen	7	11	....	....	7	11
Total	18	28	....	....	18	28
Home Economics						
Seniors .....	....	....	50	74	50	74
Juniors .....	....	....	68	68	68	68
Sophomores .....	....	....	48	66	48	66
Freshmen .....	....	....	70	67	70	67
Unclassed .....	....	....	13	9	13	9
Total .....	....	....	249	284	249	284
Total for college year..	164	267	251	286	415	553
Summer Session	21	23	115	87	136	110
Extension Field Assts..	....	17	....	....	....	17
Total collegiate registra- tion	185	307	366	373	551	680
Duplicates	4	12	28	38	32	50
Net total	181	295	338	335	519	630

THE DEPARTMENT OF AGRICULTURE

	MEN		WOMEN		TOTAL	
	1918-19	1917-18	1918-19	1917-18	1918-19	1917-18
II. SCHOOL OF AGRICULTURE						
Three-Year Course						
Seniors	57	85	34	38	91	123
Juniors	100	136	37	48	137	184
Freshmen	190	201	47	64	237	265
Unclassed	26	33	2	7	28	40
Total	373	455	120	157	493	612
Discharged and wounded						
soldiers	34	....	....	....	34	....
Normal Course .....	....	1	7	12	7	13
Total School Course..	407	456	127	169	534	625
III. SHORT COURSES						
Vocation Section S.A.T.C.						
First contingent	504	....	....	....	504	....
Second contingent	554	....	....	....	554	....
Third contingent	570	....	....	....	570	....
Total	1628	....	....	....	1628	....
Dairy Short Course						
Creamery Butter Makers	15	21	....	....	15	21
Ice-Cream Makers	8	8	....	....	8	8
Short Course	14	26	2	....	16	26
Total	37	55	2	....	39	55
Duplicates	3	5	....	....	3	5
Net total	34	50	2	....	36	50
Journalism Short Course..	3	....	3	....	6	....
Farmers' & Home Makers'						
Week .....	....	1039	....	259	....	1298
Editors' Week .....	....	53	....	2	....	55
Elevators' Week	15	20	....	3	15	23
Boys' and Girls' Week....	....	188	....	91	....	279
Traction Engineering .....	....	46	....	....	....	46
Mess Sergeants .....	....	12	....	....	....	12
Teachers' Training	2	21	346	757	348	778
Consol. School Principals.	42	73	29	15	71	88
Rural Life Conference....	....	17	....	6	....	23
Home Nursing .....	....	....	110	....	110	....
Extension Gymnasium ...	87	45	30	32	117	77
Total of Short Courses	1814	1568	520	1165	2334	2734
Duplicates	8	11	....	6	8	17
Net total	1806	1557	520	1159	2326	2717
Total registration at Uni-						
versity Farm	2406	2332	1013	1707	3419	4039
Duplicates	25	102	44	72	69	174
Net total	2371	2230	969	1635	3350	3865

IV. NORTHWEST SCHOOL OF AGRICULTURE

School Course							
Advanced Class	.....	5	....	1	....	6	
Normal Training	15	7	15	7	
Seniors	7	18	5	5	12	23
Juniors	30	31	9	11	39	42
Freshmen	110	94	22	24	132	118
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Total School of Agriculture	147	148	51	48	198	196
Junior Short Course	69	55	54	33	123	88
Teachers' Training	3	6	103	134	106	140
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Total Short Courses..	72	61	157	167	229	228
Total registration Northwest School	219	209	208	215	427	424
Duplicates	2	2	2	2
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Net total	219	209	206	213	425	422

V. WEST CENTRAL SCHOOL OF AGRICULTURE

School Course							
Fourth year	4	3	1	4	4
Seniors	8	8	6	9	14	17
Juniors	15	25	17	8	32	33
Freshmen	115	86	62	32	177	118
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Total	142	122	85	50	227	172
Junior Short Course.....	99	61	171	39	270	100
Teachers' Training School	4	70	97	70	101
Farmers' Tractor Course..	87	....	....	....	87
Farm Women's Short Course	71	....	71	....
<hr/>							
Total registration at West Central School	241	274	397	186	638	460
Total registration Department of Agricul.	2863	2815	1615	2108	4478	4923
Duplicates	25	102	46	74	71	176
<hr/>							
Net total registration	2838	2713	1569	2034	4407	4747

It should be noted in connection with the Short Course attendance for 1918-19 that only those courses are included for which registrants pay fees to the University. This excludes a number of courses which have previously been counted such as the Boys' and Girls' Course, Editors' Week Short Course, and Farmers' Week Short Course.*

THE COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS

Administration.—It has been agreed in conformity with the University policy of bringing all teacher-training courses into the College of Education, that beginning with the year 1920-21 all juniors who expect to teach shall be registrants in the College of Education.

* Abandoned in 1918-19 on account of influenza epidemic.

During the year 1918-19, 21.4 per cent of the men and 88.1 per cent of the women in the junior and senior classes were registered for teacher-training courses. Under the above agreement these students after 1921-22 will be transferred to the College of Education at the close of their second year's work.

Academic credit for military service.—In accordance with the action of the University Senate in June, 1918, authorizing the various college faculties to grant credit for military service, the Faculty of the College of Agriculture, Forestry, and Home Economics has voted to allow one semester's credit (27 quarter credits) to students who were matriculated in this College at the time of entering military service and who have held the rank of a commissioned officer or who have been in service not less than nine months. This credit is allowed as elective credit to be applied toward the degree only so far as the prescribed work of the curriculum permits or where substitutions for such prescribed work is allowed by the Faculty. Eight of the twenty men who received degrees from this College in June, 1919, were allowed such credit.

Beginning with the winter quarter a system of weekly reports on absences was installed under the direction of the Dean of Student Affairs. Freshmen and sophomores with five scattered or three consecutive absences, and juniors and seniors with eight scattered or five consecutive absences are asked to report in person and give the reason for their absences. This system has proven of considerable value, particularly in the data which is furnished for, and the cases it has brought to, the attention of the Students' Health Service. For this College the work is handled by the Office of the Secretary.

Curriculum, general.—The change to the quarter system has necessitated a complete revision of the curricula of the College. Plans are under way to complete this revision for the college year beginning October, 1920. The new plan involves a change from a large number of closely prescribed courses of study to a system of group electives which will permit students to major in such groups as Plant Industry, Animal Industry, etc. The Faculty plans to establish certain fundamental science and general educational courses essential in all branches of Agriculture, Forestry, and Home Economics which will be required of all students and permit election of the balance of the work from groups of subjects so arranged as to safeguard the proper distribution of subject-matter.

With this projected change in view and the large amount of time necessary for a detailed study of the many problems involved, it was decided to make no radical changes for 1919-20 other than such adjustments in credits as were involved in the change from the semester to the quarter plan. In general courses have been organized on a three- and five-credit hour basis and so far as possible unit quarter courses have been established providing a more flexible curriculum than continuation courses extending over two or more quarters.

At the request of the Department of Public Health credit courses in hygiene will be provided for in the curricula of this College. For 1919-20 a one-credit course will be required of all freshmen. This will replace the series of hygiene lectures previously required.

Agriculture.—The number of credit hours required for graduation beginning with 1919-20 freshman class has been reduced from the equivalent of 216 quarter credits to 204 quarter credits. The non-credit course in Farm Practice introduced for those entering without farm experience has been discontinued.

Forestry.—The number of credit hours required for graduation has been reduced from the equivalent of 238½ quarter credits to 204 quarter credits for freshmen entering in 1919-20. This change involves the placing of the work given at Itasca and Cloquet on a credit basis comparable to that given at University Farm. A full quarter of this field work will count for eleven credit hours toward the degree.

Home Economics.—The number of credit hours required for graduation has been reduced from an equivalent of 198 quarter credits to 189 quarter credits for freshmen entering in 1919-20.

A new course of study for teachers in Related Art and a series of courses for students majoring in social work have been introduced.

THE SCHOOLS OF AGRICULTURE

The introduction into the Legislature last winter of a bill requiring the Board of Regents to establish a fourth school of agriculture at Waseca raised the question of the future policy of the University with reference to the maintenance of secondary schools of this type and of the establishment of additional secondary schools of agriculture and home economics under the jurisdiction of the University.

Accordingly several conferences were held with members of the Legislature, with representatives of the State Department of Education, and members of various branches of the University administrative and instructional forces. As a result of these conferences a committee was appointed to draw up a statement of the position of the University administration with reference to these matters. This committee finally presented the following as their statement:

1. Exceptions to the general principle that educational work of collegiate grade shall be in the University, of secondary grade in the high schools, and of elementary grade in the public schools, have already been made by the establishment of our three Schools of Agriculture and by both the University Extension work and the Agricultural Extension work. This latter agency has been built up under a clearly defined system of Federal and State support. It is proper, therefore, for the State University to continue to carry on vocational work of less than collegiate grade, whenever such work can best be developed through a centralized agency like the University.

2. Vocational education and general education for citizenship of the grade school type are different in purpose and require different faculties and equipment.

3. Instruction in Agriculture should be continued as a part of the graded school system, as a subject having equal educational value with other unit subjects, and as proper citizenship training. But the necessary faculties, equipment, and environment for special vocational training in agriculture can not be developed as a part of a graded curriculum.

4. Rather than only the very narrow vocational training afforded by so-called "trade-schools," there ought to be publicly supported vocational education in agriculture which shall properly articulate with citizenship training and give the proper educational and scientific groundwork upon which to build vocational skill.

5. To meet this need, there has been established in at least thirty high schools in this state, within the past year and a half, a new type of vocational education in agriculture, home economics, and trades and industries, with Federal and State aid under the terms of the Smith-Hughes Act. Before this experiment in vocational education of high school grade was adopted as a national policy, it had only been tried out in two or three eastern states where farms are small, high schools near at hand, and the rural town life is fairly typical of the conditions under which the pupils will have to work after their vocational education is completed. Whether it will succeed as well in western states can only be determined by experience. The great bulk of pupils who should receive this type of education will have to go away from home for it even if Smith-Hughes schools are finally established in as many as one hundred high schools in the state. Further, it would seem to be impossible to provide in a Smith-Hughes school in Minnesota as favorable environment for vocational agricultural education as is now provided by the State Schools of Agriculture at Crookston and at Morris, located on farms and in an environment which dignifies agriculture and home making as a life work.

6. Further, schools like those at University Farm, Morris, and Crookston, are especially suited to the giving of vocational education to young men and women of more mature age and experience than the usual high school pupil; and afford the best place for such education for pupils who have dropped out of the graded system of education and who can not well get back into it in either high schools or Smith-Hughes schools because of the younger age of the regular pupils in these latter schools.

7. However, since the Smith-Hughes schools are now in the earlier stages of their experimental development, we deem it unwise to extend further the system of University schools of agriculture until the Smith-Hughes schools have demonstrated either their ability to satisfactorily meet the need for vocational education of secondary grade in agriculture, or their inadequacy to meet this need on the part of a large group of students who can be so taught only in University schools of agriculture, and who can not be economically and efficiently taught in the three schools now in operation. In any event, the need for future university schools of agriculture is not so urgent that serious loss would result from postponing action for two or four years, by which time the Smith-Hughes schools will have developed beyond the experimental stage and a clearer knowledge of their possibilities will be available.

This statement was carefully considered by the Board of Regents of the University and by them transmitted to members of the Legislature as representing the University's views in the matter. However, the Legislature enacted the bill which was before them into a law requiring the Board of Regents of the University to establish and maintain a school of agriculture at Waseca. No funds were appropriated for the establishment and maintenance of the school, however, and it has been determined to postpone the actual establishment of the school until plans for its development can be perfected and a request for proper appropriation for that purpose presented at the next meeting of the Legislature.

This action by the State Legislature led to the necessity for a more thorough and careful investigation of the facts with reference to the place of secondary schools of agriculture and home economics as departments of the University in the educational system of the state. Such a study has been made and a voluminous report concerning it has been prepared and submitted within recent weeks. The more important conclusions of this report may be briefly summarized as follows:

First, the general plan of vocational education in agriculture and home economics of the type which was first developed by the Minnesota

School of Agriculture has filled an important need and met with general public approval.

Second, the introduction of courses of study in agriculture and in home economics as a part of the regular curriculum of many of the high schools of the state has not satisfactorily met the need for intensive vocational education in these fields.

Third, the passage by the United States Congress of the so-called "Smith-Hughes Bill" providing for federal appropriations to each of the several states for the support of vocational education in agriculture, home economics, and the trades industries in the secondary schools of the state is an important step in the development of this general idea.

Fourth, the "Smith-Hughes schools" will undoubtedly offer opportunity for secondary vocational education to many of the young people who live in the vicinity of high schools where vocational courses under the support of the Smith-Hughes funds are established. However, the general plan of these schools does not contemplate the establishment of dormitories and other facilities for the care and instruction of students outside the territory served by the high school itself.

Fifth, it is probable that Smith-Hughes schools will always be limited by available funds to a small group of instructors and a meager equipment for general vocational training.

Sixth, vocational education as a part of an ordinary high school will almost invariably be carried on in an atmosphere which is primarily devoted to other interests than vocational training and generally among students and instructors in other subjects who will be inclined, either consciously or unconsciously, to give the impression that the vocational courses are of inferior grade or purpose to the other courses of study which are being developed as a part of the high school curriculum. In other words, the general environmental conditions will not be most favorable to the development of respect for and understanding of vocational education.

Seventh, the schools of agriculture as established by the University of Minnesota and supported by state funds will, on the other hand, usually be equipped with a faculty of several instructors who have been especially trained for the giving of instruction in different branches of vocational work, will be located on or in connection with farms where practical laboratory and demonstration work can be carried on in a very satisfactory way, will be provided with dormitories for the non-resident students, and will maintain an atmosphere most favorable to the cultivation of an interest in and liking for the vocation which is being studied, this being an essential feature of successful vocational training.

Eighth, Furthermore, recent careful surveys of many typical townships scattered throughout the state of Minnesota show that there are thousands of young men and women who have completed the rural school courses of study and who have no opportunity to attend a high school of any kind by reason of the fact that they are located outside, too far away to be able to go from their homes to the daily sessions of the school, and there are no facilities or provision for living within the district served

by a high school. These rural young people are of the type for whom vocational education such as is given in our schools of agriculture is most desirable and the dormitory systems established in connection with our schools of agriculture provide the opportunity for suitable supervised living conditions while the students are in school.

Finally, it seems clear from the consideration of the facts which have been thus very briefly discussed, that there is a large and growing need for publicly supported secondary schools of agriculture and home economics located in connection with farms which are in actual operation and provided with suitable dormitory facilities and equipment for vocational instruction of the best type and in the most suitable environment. Since the three schools of agriculture now maintained by the University of Minnesota are the only schools of this type in Minnesota and furnish a proper precedent and excellent example for further schools of this kind, it seems that it would be a wise policy to establish a sufficient number of these University schools of agriculture to meet the need for this type of instruction as it develops and so locate them in different parts of the state that they will be easily accessible to residents of all parts of the state. Such schools should be established only as rapidly as the demand for them will insure a suitable minimum number of students at the outset and should be located at strategic points in parts of the state which are remote from the existing schools of agriculture.

The following brief statements describe the condition and progress of the work at the three existing Schools of Agriculture during the period covered by this report.

THE CENTRAL SCHOOL AT UNIVERSITY FARM

The School of Agriculture at University Farm shortened its fall term to two months on account of the necessity of releasing as many farm boys as possible for harvesting and caring for the crops. When school opened in October students and instructors made every effort to overcome the handicap of the shortened term. Altho results were not entirely satisfactory, and some sacrifice in completeness was inevitable, the increased production of foods, and the spirit of service stimulated, fully justified the change.

As it was expected that many of the students who entered in the fall would enter the army before the close of the School, all male students were given intensive military training for eleven hours each week. The hours and regulations were the same as those adopted for the training of the Students' Army Training Corps at the University. The young women of the School were given physical exercises in the form of military drill, for four hours per week. Special lectures on War Aims were also given during the year at the regular assembly hour.

By request of the District Vocational Officer of the Division of Rehabilitation of the Federal Vocational Board, the School of Agriculture courses were opened to such disabled soldiers as were deemed fitted for agricultural work, commencing May 5 and continuing until September 12. An average attendance of thirty-five students was maintained. This

group of men showed great interest in the work, and had presented to it vocational opportunities which will lead the men to successful life work, notwithstanding their disabilities.

They have pursued successfully the following subjects: Corn, Study of Breeds, English, Farm Motors, Blacksmithing, Arithmetic, Electricity and Heat, Farm Mechanics, Cereal Crops, Physiology and Hygiene, Chemistry, Poultry, Beekeeping, Botany, and Dairy Breeds. With but few exceptions all of the men have successfully completed the subjects pursued and received credit in the corresponding courses in the School of Agriculture curriculum. When the School of Agriculture opens for the fall term, such members of this group as have shown fitness for the work, will become regular members of the School of Agriculture, and may be graduated after earning the required number of credits.

One of the auxiliaries of the War Camp Community Service of St. Paul has rendered valuable service in providing wholesome entertainment and social events, and the soldiers have shown a commendable spirit in managing the entertainments given weekly in the Auditorium under the auspices of the School Entertainment Association.

THE NORTHWEST SCHOOL AT CROOKSTON

There were 198 students enrolled during 1918-19, 147 young men and 51 young women. This was an increase of two over the preceding year. The number would have been considerably higher had it not been for the fact that some of the students were called to the colors and that others who intended to attend school were needed at home to take the places of their brothers who were in service. The epidemic of influenza tended to reduce the enrollment greatly. The records indicate that over 50 students withdrew their registration on this account.

From a survey made recently it is evident that in each of the 300 or 400 well populated townships in this section of the state there are from 20 to 50 young men and women between the ages of 16 and 20 who have not attended any school beyond the rural schools. There are, therefore, large numbers of young men and women who should attend the School of Agriculture in the future. It is expected at least 250 will be enrolled in the fall of 1919.

W. V. Gousseff assumed the work as dairy and animal husbandryman on the first of October, succeeding William Dietrich who resigned. A. H. Larson and A. M. Christensen resumed their positions of registrar and as home projects leader respectively, following their discharge from service. Jeanette Quale and May E. Kimberly were new instructors in English and Music respectively.

The work of the year was subject to serious interruption on account of the influenza. The best kind of spirit prevailed, however, and every effort was made to give as full a course as was possible under the circumstances. The Christmas vacation was eliminated and six-day sessions were conducted during the months of November, December, and one-half of January. This reduced the net loss of time to five weeks.

Experience has shown that a slight modification of the elective system is necessary. This change will be effective at the beginning of the next

school year. The normal training department had its highest enrollment, with a registration of fifteen. A splendid year's work was recorded in that department.

The 1918 home project work was not as successful as was hoped that it might be. This was because of labor conditions and of lack of supervision following Mr. Christensen's entry into the service. A total of 168 have registered for the 1919 home project work. All report good progress.

The short and special courses held by the School were well attended. The Northwestern Farmers' Week was one of the most successful that has ever been held. The Junior Short Course enrolled 122. The attendance at the summer session was greatly reduced on account of limitations placed upon credit work that could be offered.

In coöperation with the Red River Valley Development Association, the Red River Valley Livestock Association, the Northern Minnesota Poultry Association and other organizations considerable development work was accomplished. A livestock pavilion was constructed in Crookston, to house a winter exhibit of livestock and sales. The Superintendent and station livestock man are president and secretary respectively of this organization. The farm bureaus of the Northwestern Minnesota counties also actively coöperated in this and other educational work of the School.

An addition was built to the Owen building to provide more room for the farm engineering work. No other building was done. The 1919 Legislature made appropriations for a new dining hall to cost \$100,000 and \$10,000 to improve the campus roads and to pay the institution's part of paving the roadway from Crookston to the School. The Polk county board of commissioners voted to pay the balance of the cost, securing federal aid for one half. The city council of Crookston voted to pave the street leading to the roadway. When this work is completed there will be a paved road from the city of Crookston to the School campus and improved graveled campus roads. This improvement will be of great value to the institution.

THE WEST CENTRAL SCHOOL AT MORRIS

There were substantial increases in the enrollment in all sessions at the West Central School during 1918-19. The total attendance in the regular session was 227 or an increase of 28 per cent over any previous year. Of these 227 students, 142 were boys and 85 were girls. All but 17 came from farm homes. Two hundred and seventy were enrolled during Boys' and Girls' Week. This is an increase of 170 per cent over 1918.

The housing conditions at the School were inadequate during the past year. About 40 students were forced to live in the city of Morris under conditions that were far from satisfactory. The Legislature has now made provision for a second Boys' Dormitory which will partially relieve the present crowded condition. It is certain that additional dormitory room will be needed in the immediate future to care for the increasing

number of girls who are now applying for admission. The present physical equipment is sufficient for the immediate future.

The School was closed for twenty-one days during November because of influenza. During the year there were 116 cases of this disease in the student body, resulting in three deaths from influenza-pneumonia. The epidemic was cared for in a most efficient manner with competent nurses and physicians in charge at all times.

The grade of work done throughout the year was most satisfactory and a high average of scholarship was maintained. The elective system introduced two years ago is proving very satisfactory and few changes have been made in the course of study during the past year. Home Project Work was begun with boys in 1918 and with girls in 1919. One hundred and twenty-five students are now taking this work on the regular supervised project basis.

The location of a district leader for Boys' and Girls' Club Work at the West Central School in 1918 has resulted in a decided stimulus in club work. Not only has the enrollment been substantially increased but more efficient work has been made possible. Throughout the year several boys and girls meetings, demonstration schools, etc., were held at the School.

There have been few changes in the personnel of the staff during the past year. Much extension work in the form of Boys' and Girls' Club Work, student visitation and home project work has been done. Faculty members have also answered many calls by county agents, farm clubs, etc., throughout the district.

The School is now in a position to give thoro technical training in both agriculture and home training. A recent survey of the graduates shows that over 90 per cent of the young men are now successfully operating farms on their own behalf and throughout the district the young women who have attended the School are successfully demonstrating their ability as home-makers.

SHORT COURSES

During the year, it was decided to make the work of the various short courses more definite in purpose and character by regarding and enrolling as "sub-collegiate students" only those persons who signified their intention to pursue a definitely outlined program of studies during their attendance at the short course and who paid the prescribed fee for this course. This resulted in some decrease in the total number of enrolled short-course students, but in a clear differentiation between those persons who came to the campuses of the institution for a definite course of lectures and study and those who attended only an occasional lecture, and permitted a much more definite organization of the material presented to these students.

The following short courses were held during the year: Creamery Buttermakers, two weeks in December; Cheese Makers, three weeks in December; Ice Cream Makers, one week in December; Dairy Short Course,

two months beginning January 6; Home Nursing, two lectures per week during the month of April; Boys' and Girls' Week, the second week in April; Boys' Working Reserve, two weeks in April; Traction Engineering, five weeks in April and May; Threshermen's, one week in May; Grain Elevator Accounting, four days beginning June 30.

Farmers' and Homemakers' Week at University Farm, which is held annually during the first week in January, was omitted this year because of the influenza epidemic. Several of the state associations, clubs, and societies, which usually hold their annual meetings during this short course, came to University Farm for one- or two-day meetings later in the year; but these are not considered as a part of short course activities.

In addition to the short courses conducted at University Farm, similar short courses were held at Crookston and Morris as indicated by the registration statistics and reports from the schools there.

AGRICULTURAL EXTENSION WORK

During the year ending June 30, 1919, the Agricultural Extension Service had on its state staff 26 men and 8 women for full time, and six men were employed for part time during the winter. From 84 to 88 county agents were employed during the full year, from 6 to 10 home demonstration agents, from 10 to 32 county club leaders on part time, besides 11 farmers' institute workers, who were employed by the week through the winter, and the regular office force.

Sources of revenue.—The following sources of revenue were available for the year 1918-19:

State appropriations for extension work in agriculture and home economics, to be expended only for agricultural extension work under the supervision of the Board of Regents of the University of Minnesota	\$25,000.00
State appropriation for farmers' institutes.....	16,000.00
State appropriation for county agents, to be expended under the supervision of the Dean of the Department of Agriculture in sums not to exceed \$1,000 per county in any one year, and only in counties that have raised a like amount.....	17,000.00
Appropriations by county commissioners for county agent work and local funds subscribed to support county agent work.....	82,500.00
Federal Smith-Lever funds to be expended under projects submitted by the Director of Agricultural Extension approved by the States Relations Service of the United States Department of Agriculture	62,146.43
Federal funds appropriated to the United States Department of Agriculture and used for cooperative extension work in Minnesota under the following projects:	
County agents and county agent leader.....	\$154,097.00
Boys' and girls' club work.....	19,510.00
Farm management demonstrations	2,900.00
Cow-testing associations	2,500.00
Emergency home economics work.....	19,750.00
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	198,757.00
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	\$401,403.43

Offices and equipment.—The Agricultural Extension Service is furnished offices in the Administration Building of the College of Agriculture, University of Minnesota, with light and heat free. The additional work put on the Division by the emergency projects, and the need of providing room for the Food Administration, has over-crowded the office space at times so that it is difficult to handle the work to best advantage. The office equipment has been purchased with funds appropriated by the State for extension work and from Federal Smith-Lever funds, and consists of needed desks, chairs, filing cases, book-cases, typewriters, adding machines, multigraph, stationery, etc.

Twelve sets of lantern slides are owned by the Division and are used by the field workers, also loaned to county agents, high-school agriculturists and others for use in the state. Three stereopticons are owned by the Division and used wherever needed. Many of the county agents and practically all of the agricultural high schools have stereopticons, and in many cases these agricultural high schools have moving picture machines. The Division owns two moving picture films and rents others as occasion demands. These are used at short courses, at the State Fair, and at other gatherings where machines and proper light can be secured. The Division has full equipment for chart making, and all field workers are supplied with charts as needed. Models of buildings and farm equipment are used, also materials for various demonstrations such as cooking, canning, pruning, grafting, etc.

Publications.—Popular extension bulletins are published from time to time, as well as revisions or reprints of former bulletins for which the demand has been such as to exhaust the supply. These bulletins contain from 4 to 24 pages, usually 8 to 16 pages. In the Minnesota Farmers' Library series, 75,000 copies are published of each new bulletin. In the Special Series, bulletins from 10,000 to 25,000 copies are published. The Minnesota Farmers' Library bulletins are sent to people on the regular mailing list, there being approximately 53,000 names on the list. The Special Series bulletins are not sent to any regular list, but are distributed where there is special need for a certain bulletin, and in answer to direct requests.

University Farm Press News, a one-page five-column sheet, is published semi-monthly and sent to all papers published in the state. This news sheet is made up of notes and short articles of timely interest.

Forty thousand copies of *Farmers' Institute Annual* no. 31 were published and distributed at farmers' institutes and other farmers' meetings throughout the state. This is a book of 256 pages, bulletin size, and was devoted to the subject of "Meadows, Pasture, and Forage Crops."

The following have been printed in Farmers' Library Series:

- No. 65 *Attractive Farmsteads*, by LeRoy Cady, 12 pp., 75,000 copies. Sent out on regular mailing list of 53,000.
- No. 10 (Reprint) *Care and Management of Dairy Herd*, by George P. Grout, 12 pp., 10,000 copies.

The following were printed in Special Series:

- No. 30 *Factors of Cost in Pork Production*, by F. W. Peck, popular edition of Experiment Station Bulletin no. 133, 8 pp., 20,000 copies.

- No. 31 *Shall I Buy a Tractor?* by C. D. Patterson, J. L. Mowry, and W. L. Cavert, 12 pp., 25,000 copies.
- No. 32 *Combating Rats and Mice*, by F. L. Washburn, 4 pp., 4,000 copies.
- No. 33 *The Bread-Making Project* for 1918-1919, by Mrs. M. B. Baker, and Miss Weigley, 16 pp., 15,000 copies.
- No. 34 *Phosphate Demonstration in Stevens County in 1918*, by P. R. McMiller, P. E. Miller, and G. H. Nesom, 8 pp., 12,000 copies.
- No. 35 *Improve the Potato Crops*, by A. G. Tolaas, and G. R. Bisby, 8 pp., 15,000 copies.
- No. 36 *Minnesota Sugar Products*, by J. J. Willaman, 12 pp., 15,000 copies.
- No. 37 *Belgian Hares as Meat Producers*, by F. L. Washburn, 12 pp., 5,000 copies.
- No. 38 *Management of Bees*, by Francis Jager, 4 pp., 10,000 copies.
- No. 39 *Computing Food for an Average American Family*, by Lucy Cordiner, 8 pp., 10,000 copies.
- No. 40 *The Minnesota Orchard*, by K. A. Kirkpatrick, a revision of Farmers' Library Bulletin no. 22, *Establishing the Orchard*, enlarged and brought up to date, 20 pp., 15,000 copies.
- No. 41 *Making Cider and Cider Vinegar*, by W. G. Brierley, popular edition of Experiment Station Bulletin no. 185, 4 pp., 10,000 copies.
- No. 42 *How to Make and Analyze an Annual Report for Country Elevators*, by Frank Robotka, 16 pp., 4,500 copies.
- No. 43 *Silos*, by A. D. Wilson, 16 pp., 25,000 copies.

The following Special Series bulletins were reprinted:

- No. 23 *Experiments with Phosphate Fertilizers in Minnesota*, by F. J. Alway, 8 pp., 5,000 copies.
- No. 24 *The Pig Club Project*, by L. H. Fudge, and R. C. Ashby, 4 pp., 15,000 copies.

The following miscellaneous publications were issued:

- Hog Feeding Record Book*, by W. L. Cavert, 24 pp., 4,000 copies.
- Seed Corn Poster*, 10,000 copies.
- Treating Grain for Smut*, by E. C. Stakman, 4 pp., 50,000 copies.
- Coöperative Laundries*, by Mary Bull, 4 pp., 10,000 copies.

In addition to the 53,000 copies of Bulletin no. 65 sent to the regular extension mailing list, 3,500 of Special Bulletin no. 34 were sent out on mailing lists provided by Dr. F. J. Alway, and 128,995 Extension bulletins of all sorts were mailed out in answer to special requests.

In pursuance of the plan of the Agricultural Extension Service to carry its educational information to as large numbers as possible throughout the state, the office of publications maintained a weekly, semi-monthly, and special news service to the daily, weekly, and agricultural papers in Minnesota and the Northwest.

County agent and farm bureau work.—Progress beyond the hopes of those who were most optimistic has been made through the county agent and farm bureau work during the past year. On July 1, 1918, every county in Minnesota had perfected a farm bureau organization or similar association to coöperate with the Agricultural Extension Division and the States Relations Service of the United States Department of Agriculture to promote and administer improved agricultural practices as conducted by this organization.

On the date above mentioned only eighty-four of the counties were able to find well qualified persons to serve as county agricultural agents. Not until November 1, 1918, was an agent employed in every county.

Two of the counties, St. Louis and Beltrami, because of the large area involved are each employing two agents.

The following outline sets forth the outstanding accomplishments of the year ending December 1, 1918. A farm bureau membership has been maintained of approximately 30,000 farmers. During the fall of 1918 the seed corn selection campaign conducted through the farm bureaus, according to reports submitted, resulted in 23,141 Minnesota farmers selecting 540,112 bushels of seed corn.

Assistance was given in a state-wide cereal disease survey in coöperation with the Division of Plant Pathology, University of Minnesota, and the Bureau of Plant Industry, United States Department of Agriculture, covering practically every county in the state, revealing that the maximum infection of grain with smut was as follows: twenty-three counties with wheat affected with smut from 15 per cent to 50 per cent; thirty-seven counties with barley affected with smut ranging from 4 per cent to 14 per cent; twenty-nine counties with oats affected with smut ranging from 10 per cent to 20 per cent.

Additional plantings of alfalfa were made on 1,217 farms, 6,420 acres being seeded.

In seventeen counties 52 swine pasture demonstrations were conducted.

Forty-five livestock breeders' associations were formed with 1,044 members.

Twenty sales of pure bred and high grade livestock were conducted.

Livestock shipping associations organized by farm bureaus during 1918 and previous years resulted in a saving to stockmen of \$181,200.

Assistance was given to the farmers of the state in obtaining pure bred sires as follows: Stallions, 33; bulls, 674; cows, 2,479; rams, 105; boars, 562. In addition to the above, registered sires were transferred from one locality to another, numbering 743.

Balanced rations figured and adopted by 378 farmers.

Animals tested for tuberculosis as result of farm bureau effort, 5,825.

Animals treated for blackleg as result of farm bureau effort, 2,659.

Hogs vaccinated for cholera by county agents, 11,282, or by veterinarians or farmers on suggestion of agents, 21,473.

Drainage projects were promoted in 40 counties with 165 projects involved and 19,328 acres drained.

Crop rotations were planned and adopted in 44 counties involving 255 farms.

Soil tested for acidity in 51 counties, involving 422 farms.

Limestone applied on 115 farms; 905 tons of lime applied.

Sweet clover grown in 36 counties on 2,924 farms; 31,928 acres.

Sixty-three farmers' clubs organized with 3,328 members.

Purchasing and marketing—39 associations formed in 20 counties—\$2,220,240 amount of business transacted, resulted in a saving of \$210,050.

Farm labor supplied—requests for labor, 15,177—number of men supplied, 13,752. Persons applying for labor, 9,020. Number persons found in addition to those applying for labor, 4,732.

Different farmers visited on their farms during the year by county agents, 19,257. Total farm visits made, 33,667.

Office calls at farm bureau headquarters, wherein assistance or information was given, 71,671.

Meetings held under auspices of farm bureaus, 3,161.

Total meetings in which county agents took part, 8,248. Total attendance at all meetings, 327,487.

Agricultural articles written by county agents, 5,490.

Number letters written by county agents, 114,354.

There were conducted 2,776 demonstrations in field crops, livestock, orchard, gardening, or home demonstrations—with estimated increase of value aggregating \$550,539.

In securing the results outlined above the county agents and farm bureau organizations have had the coöperation and assistance of the specialists employed by the Agricultural College, the United States Department of Agriculture, and other state and federal departments.

Proposed program of farm bureau activities for 1919.—County agents and one or more farm bureau officials from each county were called for a conference at University Farm, February 5 to 8, 1919. At the close of this conference a proposed state-wide program of work for the farm bureau associations was recommended. The development of a permanent peace-time agriculture was deemed a problem to which the farm bureaus of Minnesota will immediately turn their attention. The program for the year agreed upon might be termed as temporary. However, it looks forward to the development of a permanently sound agriculture in Minnesota. The general program calls for special attention to such points as follow:

To the development of desirable strains of seeds; to the maintenance or enlargement of crop acreages; to the encouragement of fair prices for farm labor by liberal employment of labor on productive enterprises; by expenditures for profitable improvements of drainage, buildings, household conveniences, better livestock and good roads; to the fostering of careful repairs of farm implements with special attention to an annual implement inspection and repair week; to the keeping of farm records; to the building of community centers and the promotion of local co-operative enterprises.

Minnesota Farm Bureau Law enacted.—An event of particular importance in farm bureau history in Minnesota consists of the passage of the new farm bureau law enacted by the Minnesota Legislature on April 24, 1919. The passage of this measure anticipates an ultimate full development of the farm bureau organization in Minnesota. This Act, Chapter 427, Laws of 1919, repeals and replaces Chapter 376, Session Laws 1913, under which the work of county agricultural agents has been administered in Minnesota since August 1, 1919. The new act delegates the duty of general administration of this measure to the Dean of the Department of Agriculture of the University of Minnesota.

Changes effected by the new legislation.—The new Act provides:

1. For county coöperative extension work in Agriculture and Home Economics; that is, any form of extension work desired, such as home demonstration, boys' and girls' club work, as well as county agent work, may be supported by county appropriation.

2. For the formation of a county farm bureau association in each county, its incorporation, and the filing of a certificate of incorporation with the register of deeds of the county. To enable a county to secure funds appropriated by the county or state, a farm bureau association must be formed and incorporated and must have at least 100 members in good standing and have on hand at least \$200 in funds raised annually by membership.

3. That when a county farm bureau association is formed and funds raised as described above, the county commissioners may appropriate from \$1,000 to \$3,000 annually to support coöperative extension work in Agriculture and Home Economics in the county.

4. That no agent may be employed for a county under this Act unless approved by the officers of the County Farm Bureau Association, or their duly accredited representatives, and the Dean of the Department of Agriculture of the University of Minnesota.

5. That all bills to be paid out of funds appropriated by the county shall be approved by the officers, or accredited representatives of the County Farm Bureau Association and by the Dean of the Department of Agriculture.

6. For the application of state funds appropriated for promoting the purpose of the Act in sums not exceeding \$1,000 annually to any one county. (Under the Act, \$1,000 state aid is available annually for the two-year period beginning July 1, 1919, to any county in Minnesota meeting the requirements of the Act.)

Boys' and girls' club work.—Boys' and girls' club work has been carried on in Minnesota during the past year in practically every county in the state. The work has been under the direction of the state leader, with 6 assistant state leaders and 32 leaders part time and more than 150 volunteer local leaders whose territory has been a county, or less. Splendid assistance has been given by farm bureaus, schools, county fairs, farmers' clubs, commercial and other organizations.

Demonstration teams.—One feature of the club work in Minnesota which has brought more definite results than perhaps any other single phase of the work, has been the demonstration teams. The training of at least one demonstration team for every club has been urged by club leaders. As a result of this effort, nearly 400 canning demonstration teams were organized and trained which gave more than 1,000 public demonstrations in canning fruits, vegetables and meats by the cold pack method of canning, and whose members canned 58,400 pints of products.

Bread demonstration teams in the same way helped teach how to use the substitute flours in the best ways to get good war bread by giving 300 public bread-making demonstrations.

In the same way demonstrations have been given by teams in poultry work, drying, making sirup from sugar beets, etc. Nearly every county fair had these live demonstrations by our club demonstration teams. Pipestone County made their team demonstration contest a feature of the annual county graduation day with much success. They have been a part of poultry shows, district fairs, and club achievement days.

At the State Fair, 58 teams gave demonstrations the entire week in canning, bread making, corn work, potato work, etc. The State Horticultural Society has appropriated a special fund of \$200 with which to bring in the best teams to its annual meeting for drying and canning demonstrations. The State Educational Association asked for a program of these team demonstrations.

The champion canning team of the state took part in the Interstate contest at Sioux City, Iowa, and won second place.

The work has been carried on under 10 different home and farm projects, as indicated in the table below:

SUMMARY OF PROJECT RESULTS

Project of work	Clubs organized	Enrollment	Members reporting	Value of products	Cost of production	Net profit
Bread	282	4,100	2,479	\$ 7,437.00	\$ 4,462.20	\$ 2,974.80
Corn	101	710	394	42,418.00	15,989.12	29,397.88
Potato	146	1,548	864	29,992.00	7,880.96	18,704.74
Garden	520	14,240	9,968	128,017.60	56,817.60	71,200.00
Canning	248	5,982	3,589	70,017.20	35,008.60	35,008.60
Cow-Testing	12	54	37	7,254.61	3,462.70	2,865.09
Poultry .....	.....	.....	175	3,317.00	1,575.00	1,742.00
Pig	255	1,112	810	27,880.00	14,868.00	13,612.00
Calf	64	512	395	25,657.28	9,049.69	16,607.59
*Sewing .....	.....	.....	.....	.....	.....	.....
Totals	1,628	28,258	18,711	\$341,990.69	\$148,513.87	\$192,112.70

* No reports have been made; Red Cross work.

Coöperating agencies.—In Minnesota, club leaders generally feel that the successful results secured in boys' and girls' club work are largely due to the close coöperation of other public institutions, organizations, and individuals. Among the agencies coöperating are the public schools, farm bureaus, county agents, home demonstration agents, state and county fair associations, the Minnesota Livestock Breeders' Association, the State Horticultural Society, farmers' clubs, commercial clubs, and many individuals.

Demonstration farms.—The Agricultural Extension Service directed the management of 18 demonstration farms during the year. On 10 of these farms the milk was weighed and tested for butter-fat through the year, and full reports were made of all receipts and disbursements.

On a majority of the farms nearly all of the work was performed by the family as it was impossible to secure help. No improvements in

the way of new buildings were made altho much needed on several of the farms.

A careful inventory was taken at the beginning and close of the year, and an accurate account kept of all farm transactions. An annual report is made of the work of each farm. These reports were published in the local papers and discussed at farm club meetings in the vicinity of the demonstration farms.

Livestock judging, seed corn selection contests and stump- and stone-blasting demonstrations were held at different farms.

Land clearing by the use of dynamite was demonstrated at meetings held at Long Prairie, Brook Park, and Bagley. The attendance was large at each place and much practical information was given.

At all the farms large quantities of seed corn were gathered. Especial mention should be made of the quality of seed corn on the Carver, Fairmont, New Prague, Little Falls, and Dawson farms. The Carver, Fergus Falls, and Dawson farms were well represented at the county fairs.

A number of the farmers spent much time in war work activities, the most active were W. G. Brown, of Fairmont; Gunder Byhaug, of Dawson; Sam Hammerbeck, of Little Falls; and H. C. Woolson of Thief River Falls.

Incomplete reports from a few of the farms made it impossible to get labor incomes for the year's work.

On July 1, 1918, Mr. Baker resigned and only one inspector made the visits the remainder of the year, hence lessening the number of visits.

Attached will be found a table giving the labor income on ten of the demonstration farms:

LABOR INCOME OF MINNESOTA DEMONSTRATION FARMS
1918

	Acres	Land value	Working capital	Total capital	Interest at 5 per cent	Labor income
Bagley	172	\$ 4,800.00	\$ 3,942.22	\$ 8,742.22	\$ 437.11	\$ 652.05
Carver	268	16,700.00	10,516.87	27,216.87	1,360.84	4,218.65
Dawson	160	16,200.00	10,667.12	26,867.12	1,343.36	3,663.10
Fergus Falls	310	26,750.00	21,907.25	48,657.25	2,432.86	5,985.00
Fairmont	200	29,500.00	9,533.12	39,033.12	1,951.66	1,261.63
Little Falls	120	5,400.00	4,827.37	10,227.37	516.37	2,244.32
Mapleton	160	24,000.00	5,035.50	29,035.50	1,451.78	1,071.21
New Prague	117	20,606.25	7,520.75	28,127.00	1,406.35	4,453.37
Thief River Falls..	160	7,275.00	5,967.44	13,242.44	662.12	1,368.71
Wadena	120	8,100.00	5,299.50	13,399.50	669.98	583.35

Farm management demonstrations have been continued with one man in the field all of the year, and one man part of the year. Because of war demands and other unusual conditions, many things somewhat outside of farm management demonstrations were done, some of which are as follows: Assistance in securing local help for the 1918 harvest; attendance at 94 meetings of various kinds, at which 4,142 were in atten-

dance. Income tax, farm organization, and cost of producing livestock were discussed. Farm crops and farmers' club booths were judges at 10 county fairs. Farm leases were studied at 2 conferences with 43 landlords, and 2 cases were investigated for the State Securities' Commission; one a proposed sheep ranch company, another a proposed cooperative potato warehouse plan.

STATISTICAL REPORT OF FARM MANAGEMENT DEMONSTRATIONS

Farm account books:

Distributed in coöperation with State Bankers' Association.....	50,000
Distributed by Extension Service.....	1,000

Income tax:

Circular letters to Farm Bureaus, outlining status of farmers' and cooperative organizations with reference to income tax.....	4
Conference of County Agents attended for explaining income tax and giving suggestions in regard to farm management extension work..	6

Assistance to State Association of Farmers' Mutual Fire Insurance Companies:

Number of companies whose officers were visited.....	24
Estimated number of letters written.....	100

Cost of tractor operation:

Number of farmers in Kittson County assisted to summarize cost of operating their tractors	13
Circular letter to 86 farm bureaus as to results of Kittson County demonstration	1

Assistance in farm help matters:

Manuscript prepared for Extension bulletin, giving suggestions in regard to handling help problem in 1919. (Publication cancelled because of armistice.)	
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Miscellaneous:

Letters written to county agents and farmers in response to specific requests for information relating to farm records, income tax as related to individuals and cooperative organizations, farm leases, etc., estimated at	200
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Home economics.—During the year six home economics instructors were employed in extension work. During August, September, and October a large part of the time of these specialists was devoted to county fair work, judging exhibits, and giving demonstrations by means of the exhibits—in many cases by arranging canning or baking demonstrations. In the fall and early winter much time was devoted to attending local meetings, largely farmers' club meetings. Lectures and demonstrations were given, largely along food conservation lines. During January, February, and March all of these instructors were employed in attending Agricultural Extension Short Courses, farmers' institutes, and other meetings. From April until July their time was devoted largely to farmers' club meetings, meetings arranged by county agricultural agents, home demonstration agents, and other local leaders. At such meetings both lectures and demonstrations were given. The chief interest of the housewives during the year has been in the direction of food conservation and the use of substitutes, and practically all of the effort of the home economics workers was devoted to food work.

Home demonstration agents.—On July 1, 1918, there were home demonstration agents in the following counties: Anoka, Hennepin, Morrison, Olmsted, St. Louis, and Sherburne. District agents were located at

Crookston, Bemidji, Morris, Pipestone, and at University Farm. State specialists numbered four. Because of an irregularity Anoka was dropped for a time, but was organized and an agent again placed in the county in October.

During the year the following counties employed home demonstration agents: Dakota, Stearns, Carlton, and Clay. The organization back of the agent was either the Council of National Defense or the County Home Economics Association. On the first of February all the district work was given up. The agents were called home demonstration agents at large, with headquarters at University Farm. These in turn were also dropped, and at the time of this report the staff consists of 8 county and 4 urban home demonstration agents, and 5 specialists, with state leader and assistant state leader.

Food conservation projects.—Up to the time of signing of the armistice the work of both the specialists and the home demonstration agents was almost entirely along the line of food conservation. Demonstrations were given in the canning and drying of fruits and vegetables, meat, fish, and poultry canning, storing vegetables, eggs, etc. Also the uses of substitutes for wheat were demonstrated and methods of saving sugar and using sugar substitutes.

Clothing projects.—The conservation of textiles and clothing thrift were taught, and many excellent exhibits arranged. This work was carried on by both the specialists and the home demonstration agents at short courses, farmers' institutes, and at specially called meetings.

Health projects.—Much work was done along this line throughout the year. The home nursing specialist gave talks and demonstrations at the short courses and on many other occasions. The home demonstration agents arranged many meetings in their counties for the weighing and measuring of babies, and the examination of school children. This work was done by the home nursing specialist. Clinics conducted by officials from the State Board of Health were also arranged in several of the counties by the home demonstration agents.

Many lessons in proper feeding and menu making have been given. Other projects taken up were: a fly campaign, boys' and girls' club work, household conveniences and step savers, work at state and county fairs, and relief work in the fire district.

Livestock and dairy extension.—The dairy and livestock projects of the extension service have been somewhat limited on account of lack of funds to maintain a complete staff. There have been three specialists employed for dairy extension service, two of whom are paid jointly by the United States Department of Agriculture, Dairy Division; and for five months an additional man has been employed for bull association work. There has been employed for five months one specialist on marketing problems. Due to the rapid change from the one crop to the diversified system, the importance of livestock and dairy extension service is well known, and no doubt the state realizes the need of giving greater opportunities for assistance from this Department.

It has been the endeavor of this service to coordinate livestock and dairy extension work with various other forces, including the county agents, State Livestock Breeders' Association, breed and county breeders' associations. Assistance in holding these various types of meeting of breed and breeders' associations has been given by this Department. Approximately 25 county breeders' associations have been organized and about the same number have been given assistance in holding their annual and semi-annual meetings.

A campaign has been begun for the greater use of pure-bred sires in two counties, and preparations have been made for a state-wide campaign in the fall of 1919. In cooperation with the county agricultural agents, assistance has been given in many cases in the purchase of pure-bred dairy sires.

Coöperative livestock shipping associations have received assistance in problems at the terminal markets. This office has been instrumental in holding two meetings before the Railroad and Warehouse Commission, and legislative matters have been taken care of through the State Co-operative Livestock Shippers' Association, of which a member of this staff is secretary.

In northeastern Minnesota, which was devastated by forest fires in the fall of 1918, the Forest Fires Relief Commission, assisted by this Division, has placed approximately 50 pure-bred dairy sires, replacing inferior stock. The work of purchasing these bulls was handled entirely by a member of the extension staff.

Cow-testing association work has shown rapid growth since the close of the war, the number of associations being increased from 13 to 22. Nearly 9,000 cows, owned on approximately 650 farms, are on test in testing associations. A cow-testing association exhibit was prepared for the state fair, to demonstrate the increase in profit per cow, brought about by the proper method of feeding and management by keeping cow-testing association records.

The decrease in the use of dairy products has demanded attention and, as a result, the Minnesota Dairy Council was organized, consisting of various agencies directly and indirectly connected with dairying, including the dairymen, milk distributors, and manufacturers of various classes of dairy products of the cow. Butter posters have been prepared and distributed, and a large number of meetings held with lectures on the importance of advertising the products of the cow. An exhibit was prepared for the state fair, showing the result of Dr. E. V. McCollum's work on nutrition which proves the absolute necessity of dairy products for proper nutrition.

A boys' and girls' calf-feeding contest was prepared and promoted by the Minnesota Livestock Breeders' Association, under the direction of this office. About 450 calves were on feed in various counties of Minnesota, county contests were held, and the winners from each county exhibited their calves at a state show held in South St. Paul. The same plan has been developed for the fall of 1919, and about 1,000 calves are now on feed. Boys' and girls' livestock and dairy judging contests have

been prepared and developed. Twenty-five counties will have boys' and girls' livestock judging contests. The winners from each contest will come to the state contest, and from there the winners will go to participate in a national contest held in Chicago. The same plan will be followed with reference to the dairy-judging contest, and the winners from the state contest will attend the National Dairy Show.

Coöperative creamery work.—Seventy-one coöperative creameries were visited during the year, and suggestions were given as to improvements in operation, business methods, and coöperation. Three new coöperative creameries were given assistance in organizing. Correspondence has been conducted with the creameries and cheese factories throughout the year, and an effort has been made to get monthly reports from each one. This effort has been quite successful; 516 out of the 631 coöperative creameries in the state have reported, and 27 of the 50 coöperative cheese factories. These reports are summarized each month and sent to all of the creameries whether they report or not. This summary enables each creamery to know just how it stands in comparison with the other creameries in the state as to the amount of business, prices paid for butter-fat, prices received for butter, etc. These reports indicate that of the 631 coöperative creameries 450 are in a prosperous condition; about 100 are doing fairly well but can be improved; and the balance of 81 are much in need of improvement.

Prices paid for butter-fat by coöperative creameries in Minnesota for the year 1918, were as follows: 71 creameries paid from 58 cents to 60 cents a pound; 179 creameries paid from 55 cents to 57 cents; 211 creameries paid from 51 cents to 54 cents; 96 per cent paid from 47 cents to 50 cents; 44 per cent paid from 41 cents to 46 cents. The average price for the year for New York extras was 51½ cents. Centralizers usually buy cream on a basis of 2 cents below New York extras. From the figures above it will be seen that 461 of the coöperative creameries paid more for butter-fat than centralizers paid.

The creameries that have paid lowest prices for butterfat are those that are lacking in some one of the three essentials of creamery operation: first, quantity of product; second, quality; third, management. The amount of butter-fat received by the various coöperative creameries during the year varied from 648,522 pounds received by the largest creamery, to 10,995 pounds, the smallest. Most of the creameries received from 100,000 to 200,000 pounds of butter-fat.

Reports from cheese factories show that the price paid for butter-fat for cheese making varied from 72 cents as an average for the highest to 61 cents for the lowest. The amount of butter-fat received by cheese factories was usually under 80,000 pounds each.

Prices received for butter by coöperative creameries varied from an average of 63 cents to 39 cents. This difference is largely due to quality of butter, but to some extent to difference in ability of the management and amount for sale.

Three counties have organized county creamery associations for the purpose of getting all the creameries of the county together to talk over

methods of improving their business, of attempting to standardize their product, and of working out the plans for mutual helpfulness.

Short courses.—Twenty-two Agricultural Extension Short Courses were held during January, February, and March. The influenza epidemic prevented the holding of more courses this year.

The total attendance was 12,006; 7,763 men and 4,243 women. In order to fill most of the requests from county agents and high-school agriculturists, the length of the courses was reduced from five to three days.

The topics discussed this year were: livestock management, feeding and improving herds, the coöperative creamery, pure seed, culture of corn, potatoes, and other feed and forage crops, tile drainage, cost of operating tractors, studies of profitable farms, treating for grain smuts and potato diseases, food needs, the home demonstration agent, infant and child welfare, home care of the sick, home sanitation, step savers, and keeping home records.

Poultry extension.—Poultry judges were supplied most of the counties. At five county fairs culling demonstrations in selection of breeders and prolific layers were conducted. Culling campaigns were put on in various counties coöperating with the county agents. W. E. Stanfield, Government poultry expert, assisted in these demonstrations until the work was stopped by the ban on public meetings on account of the influenza.

Several poultry associations have been organized during the past year, a model constitution and by-laws were furnished each one, and a personal visit was made to aid in organization in seven counties. Many poultry shows were judged during the year. At the present time 63 counties are on the list to receive State Aid to the extent of \$400 for premiums awarded at poultry shows. These poultry associations and the shows conducted offer an opportunity for poultry extension work within the counties.

The constant aim of all activities during the past year has been to increase poultry production. An educational campaign has been carried on through farmers' clubs in coöperation with county agents, commercial clubs, summer schools, institutes, boys' and girls' clubs, schools, and Farmers' and Homemakers' Week and Junior Short Course at University Farm.

Demonstrations were given at the state fair, and at six poultry shows on culling the flock, feeding for eggs, and the work of the community at Barnum in practical poultry production. This work met with much favor and created much interest.

Close contact has been maintained with the Poultry Demonstration Community at Barnum, and aid has been given by personal interviews and suggestions. "Chicken chats" were published during the year in the *Barnum Herald*. The community is making decided progress and has furnished many hatching eggs, day-old chicks, and breeding stock to other communities over northern Minnesota. The farmers have formed

a coöperative association for the purchase of feed, etc., and soon will be doing business.

Several excursions have been made to Barnum from other communities to see the practical manner in which the farmers there care for their poultry.

As a result of the "poultry special" on the Minnesota and International Railway in June of 1918, much interest was awakened in poultry in several towns, as Pine River, Walker, Bemidji, Hines, Kelliher, and Northome. Follow-up work has been done and much progress has been made during the past year. Walker has organized a poultry association and purchased standard-bred stock at Barnum.

Horticultural extension work.—The work of stimulating interest in home gardening was continued during the year. The chief topics considered were the gathering and storing of the vegetables for winter use. In coöperation with Miss Burgan of the St. Paul Community Food Center, a very attractive window display was prepared, illustrating how vegetables should be stored. This attracted much attention and many persons asked for additional information and bulletins.

The home gardens in most parts of the state yielded a large crop of vegetables. In some towns it was almost impossible to find any land not used for gardening.

On August 2, 1918, Mr. E. W. Reckerd, of Brooklin Center, brought in samples of muskmelon plants affected with anthracnose. Immediate steps were taken to spray the plants with Bordeaux mixture. Several days were spent at this work, but it was impossible to check the disease. Probably Mr. Reckerd's loss was over one thousand dollars. Messrs. Kirkpatrick, Bisby, and Assistant County Agent White assisted. This season we are trying to prevent injury from this disease by following the best known methods of sanitation, rotation, and spraying.

During the spring (1919) special attention was given to spraying and pruning demonstrations in coöperation with the county agents in the following counties: Kanabec, Steele, Meeker, Rice, Redwood, and Anoka.

Many minor topics, as the following, were taken up during the year: planning school and home grounds, score cards for judging gardens and farmers' club booths, coöperative marketing of vegetables, and preparation of a model premium list for county fairs.

The material for a new home gardening bulletin was prepared and submitted for publication.

Farmers' clubs.—The farmers' club work has been quite seriously interrupted because of war activities interfering with their regular meetings, and during the greater part of the fall and winter public gatherings were prohibited. However, a large number of the clubs have continued to hold meetings and many new clubs have been organized.

The farmers' club seems to meet a real need for community organization in the country, and this movement is worthy of every encouragement. There are about 1,200 of these clubs in the state, and in normal times most of them hold 10 or 12 meetings each year. This is an important

educational factor. The farmers' club community is always found more progressive than the community in which there is no organization.

Plant pathology.—Work along this line has been continued as formerly. One man has devoted full time to the work. Special effort has been devoted to control of potato diseases, and to development of the potato seed certification. This work was authorized by the last Legislature, and we hope that it will do the same for the potato industry that registration of livestock has done for the development of pure breeds of livestock.

Work has been conducted in connection with county agents, very largely by means of demonstration plots. During the spring of 1919 an intensive campaign for treating grain for smut was inaugurated. The only measure of results is the fact that there is such a demand for formaldehyde in the state that many of the dealers could not keep a supply.

Educational work was done along the line of plant diseases through public meetings, such as short courses, institutes, farmers' club meetings, etc. Numerous articles were written. Special Bulletin no. 35, dealing with diseases of plants, was published.

Soils.—Extension work in soils has been continued throughout the year under the following heads:

1. Continuation of the phosphate project in southeastern Minnesota.
2. Phosphate project in Stevens County.
3. Use of fertilizers, manure, and legumes on sandy soil at Nickerson.
4. Fertilizers on potatoes in Anoka County.
5. Use of phosphate in Chippewa and Kandiyohi counties, in cooperation with county agents.
6. Peat demonstration plots, including use of manure and phosphate with different crops in northwestern part of the state.
7. Continued observation of the effect of lime on alfalfa near Nerstrand.
8. Use of fertilizers with sugar beets at Chaska, Arlington, and Glencoe.
9. Use of fertilizers on potatoes in western part of state.
10. Short courses or institutes and farmers' clubs.
11. Correspondence.

As many of the plots laid out in 1917 as could be reached before the crops were harvested were checked for yields.

On three fields of hay, one at Lewiston, one near Elkton, and one near Adams, the phosphate showed a very beneficial effect. On the plots receiving 400 pounds of phosphate per acre there was an increase of 1.36 tons of hay per acre, on the farm of Mr. Gust Jacobson at Elkton.

Mr. P. R. McMiller and Mr. Barker checked up the phosphate fields in Stevens County. A marked increase in crop yield was obtained on some of the fields. In a general way the demonstrations indicated that phosphate is profitable in Stevens County on land that has not been manured recently. Special Bulletin no. 34 gives a report of the demonstrations.

The work at Nickerson has been continued. The experimental tract has demonstrated conclusively that lime is necessary for both alfalfa and sweet clover on that soil. During the last week of May, 1918, we inoculated 20 acres for alfalfa and seeded the alfalfa. There is now a very good stand of alfalfa on the 20 acres. Lime was applied on the entire 20 acres.

In 1918 phosphate produced an increase of about 40 bushels of potatoes per acre and it increased the tonnage of corn.

Yields of potatoes on the fertilizer plots in Anoka County on sandy soil were checked. The fertilizers did not show any marked effect.

The peat demonstration work is being conducted in cooperation with Mr. Morris and the county agents of Kittson, Roseau, Beltrami, Marshall, Pennington, Polk, Clearwater, and Becker counties. Most of the plots were selected during October, 1918, and the spring of 1919. The phosphate was applied with the assistance of county agents. This work is based on the results obtained on the experimental tract at Golden Valley last summer. In all, there are demonstration plots on 35 farms in the various counties. Two or more crops are being tried on most of the sets of plots. Manure is being used on one plot, phosphate on another, and a third plot receives neither phosphate nor manure.

EXPERIMENT STATION

It has been customary in former years to present here a brief review of the progress which has been made during the year upon the more important research projects of the Experiment Station. Inasmuch as these matters are fully covered by the annual report of the Director of the said Experiment Station it seems to be unnecessary to duplicate the publication of these reports by presenting such statements here. There are, however, certain general principles and tendencies in the development of experiment station work to which attention should be called.

In the first place there is urgent need for a better understanding of the purposes of the Experiment Station. It should be clearly understood that this is an agency for research, for ascertaining of facts with reference to agricultural science by the scientific method. Legislative committees, delegates from farmers' organizations, and many individual citizens, after visiting experiment stations have made reports or statements exploring wasted money, impracticability of work, foolishness in management, failure to secure profitable results, and similar critical statements. The necessities of the war emergency have brought them to realize more keenly that we must have suitable agencies for ascertaining facts for public use. The value of the agricultural experiment stations to the development of agricultural instruction and farm practice ought to be more strongly impressed upon the people of the state.

Since the experiment stations have, in most states, been established in connection with the College of Agriculture, there has been a general idea that the function of these experiment stations was to teach better agriculture. This impression is erroneous, however. It is not the function of the experiment station to teach but to ascertain facts and correct

application of these facts to agricultural practice, which information is to be disseminated through educational agencies.

Furthermore, it should be realized that the ascertaining of facts is an expensive business, that no worth while fact can be purchased at a low price, and that the field of modern scientific agriculture is so complicated that a thoro knowledge of its underlying facts and principles can only be ascertained at the expense of long, careful, and thoro investigation. Fortunately, however, we have ample results from past experience upon which to base an argument for the support of this kind of investigational work; we can point out how the results of experiment station work in the past have contributed to agricultural knowledge and have worked out successfully and profitably in actual farm practice.

Up to the present time it has been generally understood that the field and function of the agricultural experiment stations was to investigate only problems of agricultural production and utilization of farm products, and not problems of agricultural economics or rural sociology. Recently, however, there has arisen a great public demand for information and investigation in the field of agricultural economics, practical farm management, marketing practices, price fixing, etc., affecting the distribution and final utilization of farm products. The question now is, shall the experiment stations take up this line of investigational work. It would appear that the experiment stations are the agency best suited for the study of these problems since they are provided with or can secure investigators who are qualified by scholastic preparation and by experience and who have the unbiased and impartial attitude of mind which is essential for proper investigation of these problems. These investigations, however, must deal with underlying causes, with the actual measurable economic factors which should control market practices, rather than with the practices as they now exist. They should deal with problems of finance, of land tenures, of marketing, of cost of production of crops, of labor requirements for crop production, and of all similar matters which may properly be classed as agricultural economics and perhaps even with certain problems of rural sociology and rural life.

It will at once be recognized that investigations of problems of this type require men of excellent training in economics, of sound judgment and of even temper in order that their findings may not be influenced by personal prejudice or the human element which enters so largely into these matters.

DISTRIBUTION OF EXPENDITURES AT UNIVERSITY FARM

The foregoing report indicates clearly that the five lines of work provided for in the organization of the department as outlined in last year's report are being consistently and harmoniously developed. These lines of work are collegiate instruction, secondary instruction, short courses, agricultural extension work and experiment station work. The proportionate expenditure of the funds allotted to the Department of Agriculture for the work which is administered at University Farm is

shown in the attached table. This indicates that 20 per cent of our funds are expended for collegiate instruction, 14 per cent for instruction in the School of Agriculture, 33 per cent for Experiment Station work, 25 per cent for Agricultural Extension work, 3 per cent for short courses, and 5 per cent for miscellaneous, and gives a general idea of the relative volume and importance of the different types of work as they have been developed during the past year.

Respectfully submitted,

R. W. THATCHER, *Dean and Director*

SUMMARY OF DISTRIBUTION OF 1918-1919 BUDGET

SECTION V—DEPARTMENT OF AGRICULTURE*

Budget or pay roll	Names	Budget Amount	Transferred	Unexpended	Dis-tributed	College	School	Station	Extension	Short Courses	Miscel-laneous
I	Administration	\$21,155	--\$238	\$1,705	\$19,212	\$5,560(29)	\$3,761(20)	\$4,214(22)	\$3,315(17)	\$1,404(7)	\$958(5)
II	Agricultural—General ..	34,605	—245	1,237	33,123	6,365(19)	7,594(23)	16,158(49)	2,265(7)	246(1)	495(1)
III	Publications & Mail...	8,700	—33	436	8,231	3,044(37)	22(—)	4,781(58)	102(1)	282(4)	.....
IV	Agricultural Extension	104,146	+7	7,781	96,372	435(—)	.....	468(1)	94,393(98)	251(—)	825(1)
V	College—General	6,075	—180	858	5,037	4,812(96)	225(4)	.....	.....	.....	.....
VI	School—General	14,685	+1,040	1,006	14,719	629(4)	13,702(93)	.....	253(2)	135(1)	.....
VII	Station—General	1,200	.....	100	1,100	.....	.....	1,100(100)	.....	.....	.....
VIII	Short Courses—General	8,710	.....	2,642	6,068	64(1)	3(—)	.....	9(—)	5,992(99)	.....
IX	Agr. Biochemistry.....	19,870	+555	2,683	17,742	4,732(27)	580(3)	12,001(68)	429(2)	.....	.....
X	Agr. Economics.....	5,200	+440	1,452	4,188	1,574(37)	.....	1,279(31)	1,262(30)	73(2)	.....
XI	Farm Engineering.....	25,225	.....	4,252	20,973	4,271(20)	7,155(34)	1,019(5)	3,045(14)	2,234(11)	3,249(16)
XII	Agron. & Farm Mgt....	41,190	+154	7,198	34,146	3,966(11)	3,383(10)	19,746(58)	6,425(19)	281(1)	345(1)
XIII	Animal Industry.....	107,670	+44,279	21,868	130,081	29,691(23)	25,379(20)	33,919(26)	8,110(6)	3,739(3)	29,243(22)
XIV	Beekeeping	6,270	.....	444	6,276	1,051(17)	432(7)	3,471(55)	1,156(18)	166(3)	.....
XV	Ent. & Econ. Zoology..	17,550	+685	2,363	15,872	2,194(14)	244(1)	10,144(64)	2,480(16)	.....	810(5)
XVI	Forestry	19,480	+1,386	2,668	18,198	5,294(29)	.....	12,060(66)	737(4)	.....	107(1)
XVII	Home Economics.....	28,895	—540	2,051	26,304	18,862(72)	5,313(20)	.....	999(4)	256(1)	874(3)
XVIII	Horticulture	23,705	—67	1,664	21,974	1,800(8)	1,177(5)	16,858(77)	1,484(7)	31(—)	624(3)
XIX	Plant Pathology.....	26,105	+1,463	4,700	22,868	1,962(9)	448(2)	18,119(79)	2,339(10)	.....	.....
XX	Rhetoric	7,960	.....	783	7,177	4,846(67)	2,331(33)	.....	.....	.....	.....
XXI	Soils	21,500	+1,745	1,893	21,352	995(5)	241(1)	18,605(87)	1,424(7)	87(—)	.....
	Totals	\$550,346†	+\$50,451‡	\$69,784	\$531,013	\$102,147(19)	\$71,990(14)	\$173,942(33)	\$130,227(24)	\$15,177(3)	\$37,530(7)††
	Maintenance(a) .....	.....	.....	.....	8,652	1,687(20)	1,193(14)	2,892(33)	2,154(25)	251(3)	475(5)
	Grand Totals(b)..	.....	.....	.....	.....	\$103,834(20)	\$73,183(14)	\$176,834(33)	\$132,381(25)	\$15,428(3)	\$29,353(5)

* Figures in parentheses indicate per cent.

(a) Maintenance included in charges to Miscellaneous distributed in proportion to balance.

(b) Totals, including Distribution of Maintenance charge.

THE PRESIDENT'S REPORT

SUMMARY OF DISTRIBUTION OF 1918-1919 BUDGET
SECTION V—DEPARTMENT OF AGRICULTURE—Continued

† Printed budget \$120 error in addition in Div. XX.

‡ Credited to Section V from:

1917-18 balances	\$11,634	
Fees and sales.....	38,436	
Transferred from Budget 1.....	835	
Transferred from Allotment 63.....	8	
Transferred from Section VII.....	153	
		\$51,066

Transferred from Section V:

To Section XV.....	\$540	
To Section XVIII.....	75	
		615

Balance	\$50,451
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†† Miscellaneous chargeable to:

Station Service and Maintenance.....	\$8,652
War Emergency Work.....	3,493
Hog Cholera Serum Production.....	24,933
Seed Case Manufacture.....	345
State Forestry Board.....	107

Total	\$37,530
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THE LAW SCHOOL

To the President of the University:

SIR: I beg leave to submit the following brief report of the work of the Law School of the University during the session 1918-19:

Attendance.—The session opened with the war at its height. Strong patriotic impulses had caused the law students to eagerly enlist for two years; the selective draft had been in operation for two years. These causes, together with the influenza and the introduction of the Students' Army Training Corps, reduced the student body to almost a vanishing point. In the fall term only 17 civilian students enrolled; 47 of the Students' Army Training Corps students enrolled in the special course for law students, and 939 received instruction in Military Law in the Law School. The signing of the armistice, the discharge of the Students' Army Training Corps, and the gradual demobilization of the army starting before the second term opened, brought the registration for that term up to 98, and the third term brought the total registration up to 117, only 17 less than the total registration for 1917-18.

It is impossible to make any satisfactory forecast as to the probable attendance during the next year. So many factors must be considered—some favorable, some unfavorable—that one hesitates to venture an estimate as to the probable attendance. It depends on the rapidity with which demobilization proceeds and the overseas men are permitted to return, on the extent to which the adventure of war has upset the life plans of the young men and caused them to be deflected from their former fixed purpose, and also on business conditions. A fair consideration of all factors would indicate an early return to pre-war registration, and a steady increase thereafter. The total registration in the Law School for the year 1915-16 was 171; for 1916-17, 222. In 1916-17, 112 first-year men entered. If demobilization is practically completed by August 1, 1919, and the young men resume their education, a conservative estimate would give us 125 entering men, and counting the men we can reasonably expect for the second- and third-year classes will give us a total in 1919-20 of 220, and the number may be very much increased.

TABLE I. REGISTRATION

	REGULAR		SPECIAL		TOTAL	
	1917-18	1918-19	1917-18	1918-19	1917-18	1918-19
First year	42	45	24	15	66	60
Second year	29	31	13	6	42	37
Third year	25	18	1	1	26	19
Unclassed .....	..	..	..	..	..	1
					134	117

The preceding Table I shows the registration as compared with that of last year. In computing these figures, the figures for the first term are not included as they are so involved with the Students' Army Training Corps as to be of no value as authoritative figures.

Faculty.—The teaching load of the Faculty was very heavy throughout the year. Professor E. S. Thurston, who entered military service as a Captain, later promoted to Lieutenant-Colonel, was still in the service. Dean W. R. Vance was absent in Washington, D. C., as counsel for the War Risk Insurance Bureau. Their courses were assigned to the other members of the Faculty as equitably as convenience and ability would permit. Mr. Waldron M. Jerome of the Minneapolis bar, together with Professor C. D. Allin and Mr. A. J. Lobb of the Political Science Department, assisted the Faculty in the teaching of Military Law during the first term.

Mr. Waldron M. Jerome, Professorial Lecturer, died December 22, 1918. By his death the Law School suffered a heavy loss. He was a graduate of the University and of the Harvard Law School. He had for six years preceding his death taught the law of Evidence in the Law School most acceptably. The editor of the *Minnesota Law Review* in most delicately chosen words says of him most fittingly: "He had an unusually sound legal judgment, a habit of judicial fairness, a noble conception of duty as a lawyer, and in his private character, an elevation of spirit, a charity, tolerance, and generosity which impressed his personality deeply upon all who came within the circle of his influence."

The course in Evidence was assigned for the year to Professor Andrew A. Bruce. Judge Homer B. Dibell of the Supreme Court of Minnesota has continued his unselfish devotion to the cause of legal education by giving, without compensation, most valuable courses in Mortgages and Wills and Administration. Judge Bert Fesler of Duluth, Minnesota, gave for the first time this year an unusually successful course of lectures in Legal Ethics. These lectures were likewise given without compensation. For the next session the teaching strength of the Faculty has been much increased by the election to a professorship of Mr. M. T. Dowling, formerly of the Department of Legislation, Columbia Law School, and during the war, associate counsel, War Risk Insurance Bureau.

Instruction.—Notwithstanding the fact that the teaching power of the Faculty had been reduced by the absence of members, still every effort was made to maintain previously established standards of efficiency and scholarship, and I trust, in a measure successfully, for all put forth every endeavor in a conscientious devotion to duty. Amid the most distracting influences and surrounded by most disquieting conditions the students showed a fidelity and steadiness of purpose most admirable. Even while breathing the unscholastic atmosphere of the Students' Army Training Corps the civilian students worked with a commendable zest and zeal, and when the war cloud lifted, the armistice was signed, and the second term opened, then all settled down to pre-war conditions; a calm steadiness of purpose marked the demeanor of the students, manifested by the results of the examinations at the end of the term.

Library.—The growth of the library during the last five years is shown by the figures given immediately below:

Volumes added during 1914-15.....	2,702
Volumes added during 1915-16.....	1,639
Volumes added during 1916-17.....	1,144
Volumes added during 1917-18.....	1,967
Volumes added during 1918-19.....	673

The temporary shelving erected in the reading-room in the summer of 1917 has provided for the library's growth during 1917-18 and 1918-19. These shelves being now full, some temporary provision must again be made to care for the natural increase during 1919-20. This condition, with the stackroom overloaded, makes imperative the early solution of the question as to how the law library can be adequately housed.

New building.—From year to year in each report the Dean of the Law School has presented the urgent need for a new building. This year most capable and conscientious builders making a most painstaking examination reported that the load in the stackroom could not be increased. The building is ill adapted for a modern law school. The library within it can not grow normally, and may at any time be totally destroyed by fire. The Board of Regents has acted wisely in placing a new law building on the ten year building program of the University, and it is greatly to be hoped that this building will be erected at a very early date.

Minnesota Law Review.—The *Law Review* has completed its third year. It has established its position among the law reviews of the country as a legal publication of literary merit and sound legal research. While many law reviews were compelled to suspend owing to the war, the *Minnesota Law Review* came regularly from the press. The *Review* has been self-sustaining from the first and will close the year with a surplus in the treasury. It has for another year proved a valuable magazine to the legal profession and the best possible stimulant to scholarly research and writing among the students.

Statistics of scholarship.—The figures given in the following tables have been compiled without including those of the first term of the year. These tables are valuable primarily for purposes of comparison. If the figures for the first term with the Students' Army Training Corps were included they would be useless for comparative purposes. Conditions have been so abnormal during the war that these tables are, as Mr. Vance said in his last report, of little value except as they show the effect of war upon the work of such a professional school as this.

TABLE II. CONDITIONS, FAILURES, AND INCOMPLETES

	REGULAR	SPECIAL	TOTAL
Second term			
Incompletes	4	0	4
Conditions	53	15	68
Failures	6	3	9
			81
Third term			
Incompletes	7	5	12
Conditions	26	7	33
Failures	3	0	3
			48

THE PRESIDENT'S REPORT

TABLE III. SCHOLARSHIP STATISTICS

	FIRST YEAR		SECOND YEAR		THIRD YEAR	
	2nd term	3rd term	2nd term	3rd term	2nd term	3rd term
1. Total enrollment	54	57	29	37	14	19
2. Number taking examinations.....	49	53	29	34	13	19
3. Number passing all examinations.	18	38	24	24	11	14
4. Number delinquent in one subject only	13	12	5	9	2	4
5. Number delinquent in three or more subjects	13	1	0	0	0	1
6. Percentage of conditions and failures to total examinations.....	25	10	4	6	3	8
7. Percentage of successful students to total enrollment.....	33	66	82	64	78	73

TABLE IV. PRELIMINARY TRAINING AND SCHOLARSHIP
(FIRST-YEAR CLASS)

	REGULAR				SPECIAL	
	Acad. seniors and graduates		Having two years of college		Less than two years of college	
	2nd term	3rd term	2nd term	3rd term	2nd term	3rd term
1. Total enrollment	18	20	22	25	14	12
2. Number taking examinations.....	18	19	21	22	10	12
3. Number passing all examinations.	9	17	5	15	4	6
4. Number delinquent in three or more subjects	3	0	6	1	4	0
5. Percentage of failures and conditions to examinations taken.....	20	3	29	14	28	15
6. Percentage of successful students to total enrollment.....	50	80	22	60	28	50

Respectfully submitted,

JAMES PAIGE, *Acting Dean*

THE MEDICAL SCHOOL

To the President of the University:

SIR: I submit the following report of the Medical School for the eleven months beginning August 1, 1918, and ending June 30, 1919.

The School has had to record an unusual number of deaths in the ranks alike of the staff and the student body.

Dr. James E. Moore, Chief of the Department of Surgery, closed his long term of signal service as a member of the Faculty.

Dr. Frank C. Todd, Chief of the Department of Ophthalmology and Oto-Laryngology, died in the service of the country, holding the rank of Lieutenant-Colonel in the Army Medical Corps and the position of Commanding Officer of the Base Hospital at Camp Dodge.

Dr. Oscar M. Klingen, Lieutenant in the Corps of Base Hospital No. 26, Dr. John H. Schroeder, Assistant in the Department of Medicine, and Dr. Albert G. Alley, Teaching Fellow in Pediatrics, succumbed to the epidemic of influenza-pneumonia.

These men have left a record of personal character and professional skill which has won the respect and esteem of their fellows. It is greatly to be desired that measures may soon be taken to create a fitting memorial to those who died in the service of the country.

Sixty-three members of the Faculty have been in military, naval, or Red Cross service during the year, nearly all of whom have now returned to take up their duties. They have filled important positions and many of them have rendered conspicuous service. A record of their work in the war should form a part of the University's history.

Into that history should be written, also, the story of the response of the student body to the occasion. Two hundred and forty-five medical students enrolled in the Medical Enlisted Reserve Corps; 232 were transferred to the Students' Army Training Corps; 11 seniors took commissions in the United States Navy; and 16 students of all classes entered the enlisted personnel of the University Base Hospital No. 26. A group, also, of 12 senior students volunteered for temporary clinical service in the burned and disease-swept districts of northern Minnesota.

The teaching work of the School has suffered as a result of the disruption of its teaching staff and the interference with student programs. It has been no easy task for the 60 per cent of the Faculty remaining at home, even with the generous assistance of emeritus members and the temporary substitution of new assistants, to do duty for the full force.

To the ordinary teaching work, moreover, have been added special courses for S.A.T.C. classes and Naval Hospital Corps men. The latter, in detachments of one hundred, continued to come to us for training up to the close of the war. Mention should be made of the able direction of the school for Naval Hospital Corps men by Miss Marion L. Vannier, Assistant Superintendent of the School for Nurses.

In this period, resignations have been fortunately few, only that of Dr. T. L. Birnberg, Instructor in Pediatrics, being on record.

In the major positions vacated by death, Dr. Arthur C. Strachauer has been appointed as Acting Chief of the Department of Surgery and Dr. William R. Murray as Acting Chief of the Department of Ophthalmology and Oto-Laryngology.

A new Department of Bacteriology and Immunology has been created, separated from the Department of Pathology and Public Health. The former has been placed in charge of Dr. Winford P. Larson, while the latter remains under the direction of Dr. Harold E. Robertson.

New appointments have been made as follows: Dr. John Sundwall, as Professor of Hygiene and member of the Administrative Board; Dr. J. W. George, as Assistant Professor of Surgery; Dr. Rood Taylor, as Assistant Professor of Pediatrics; Dr. Gustave J. Noback, as Instructor in Anatomy; Dr. Albert G. Schulze, as Instructor in Obstetrics and Gynecology; Dr. Frederick C. Rodda has been promoted as Assistant Professor of Pediatrics; Dr. Louis E. Daugherty, as Instructor in Surgery; Dr. Henry E. Michelson, as Instructor in Dermatology and Syphilis; Mr. Hjalmar L. Osterud, as Instructor in Anatomy; Dr. Frederick K. Schaaf, as Instructor in Medicine; Dr. Ivar Sivertsen, as Instructor in Obstetrics and Gynecology.

During the past school year, 286 students have been registered in the Medical School; 54 students have earned the Degree of Bachelor of Medicine; and 60 completing the required internship, have received the Degree of Doctor of Medicine.

The Degree of Bachelor of Medicine, established as a war measure to enable students at the end of the senior year to secure military or naval commissions, has been abolished.

Students of the Graduate School, to the number of 64, have taken major or minor courses in the Medical School; and 16 have filled teaching fellowships in the several laboratory and clinical departments.

The School, with the approval of the Board of Regents, has assigned 50 beds in the Elliot Memorial Hospital, to the use of patients able to pay per diem charges; thus introducing the plan which is to be applied to further extensions of the hospital service.

The Administrative Board of the Medical School has again recorded its judgment that the University Hospitals should have an increase to not less than 550 beds, with the necessary accompaniments of housing for nurses and enlarged administrative and service features.

Arrangements are in progress for the removal of the Department of Pathology and Public Health and the Department of Bacteriology and Immunology to the medical laboratory buildings on the new campus.

These departments will be so housed with severe contraction of the quarters of those already occupying the buildings—a temporary disturbance justified only by the immediate devotion of the Institute of Public Health and Pathology to other imperative needs and by the expectation of the early completion of Millard Hall and the Institute of Anatomy.

The Medical School, with the present summer, adopts the four-quarter system. For the present, incoming students will be received under the limited registration rules, at the opening of the fall and winter quarters. Competent students will be enabled to pursue their courses through four quarters and thus to complete the School curriculum including the required internship in four instead of five years.

With the adoption of the four-quarter system, the School has undertaken, experimentally for one year, a new method of clinical teaching which will attempt to put the student into earlier and closer contact with clinical cases in the wards of the University and affiliated hospitals. The fifth and sixth years—the so-called clinical years—will be divided for this purpose into three periods: (1) a didactic period; (2) a clinical clerkship period; and (3) a student internship period; each covering two quarters. While the work of the first two periods will be regrouped and more or less massed, the student internship is the real innovation of the plan. It is to be noted that it does not take the place of, but serves as an introduction to, the regular internship which Minnesota requires for the M.D. degree.

A new course in hospital dentistry has been undertaken jointly by the Medical School and the College of Dentistry.

A combined course for nurses, similar to that which is required of medical students, has been arranged by the College of Science, Literature, and the Arts and the School for Nurses, with the approval of the Board of Regents. This course, optional for the present, will cover a period of five years and will lead to the degrees of Bachelor of Science and Graduate in Nursing.

The School for Nurses has offered, during the past year, provisional courses in Public Health Nursing, in periods of four months each. It has secured splendid coöperation from the public health agencies of the Twin Cities and from the University departments of Sociology, Educational Psychology, Hygiene, etc.

The Medical School has now recommended to, and has received from, the Board of Regents approval of permanent courses in Public Health Nursing; courses approved also by the American Red Cross, which, together with the Minnesota Public Health Association, will contribute to their support; the former by way of scholarships, and the latter by additions to the budget for maintenance.

The new undertaking is responsive to very urgent public need in the several fields of public health service.

The Social Service Department, organized two years ago, has proved its great value. The recognition of this has inspired an extension of the department to cover the entire field of hospital and dispensary clinics, and to provide a larger human laboratory for students alike in sociology and public health nursing. To this project the Minneapolis War Chest, administered by the Council of Social Agencies, has contributed the sum of \$5,820 as an addition to the budget provided by the University.

The Medical School has offered its services to the Federal Interdepartmental Social Hygiene Board in the pursuit of researches in the

prevention and treatment of venereal diseases. The offer has been accepted and the Board has remitted to the University the sum of \$8,250 in support of these studies.

The only department in which the Medical School has felt the effect, upon its registration, of the war, is the School of Embalming; for which in its past three months' session but 18 students were entered. Recovery of numbers may be anticipated with the return of peace. The report of the University Hospital is appended.

Respectfully submitted,

E. P. LYON, *Dean*

THE UNIVERSITY HOSPITAL

The following report of the activities of the University Hospital is submitted covering the period of eleven months beginning August 1, 1918, and ending June 30, 1919:

COMPARATIVE STATISTICAL STATEMENT HOSPITAL

	1916-17 (12 months)	1917-18 (12 months)	1918-19 (11 months)
Patients in the Hospital at beginning of period, August 1	163	159	148
Patients admitted during the period.....	2,627	2,754	2,187
Patients treated during the period.....	2,790	2,913	2,335
Total days hospital care.....	59,130	58,765	47,548
Average days per patient.....	21	20	20
Highest daily census.....	183	181	184
Daily average number of patients.....	162	161	142.36
Daily average cost per patient.....	\$1.467	\$1.63	\$2.12
Daily average cost per capita for provisions for all persons supported.....	.269	.323	.361

OUT-PATIENT DEPARTMENT

	1916-17 (12 months)	1917-18 (12 months)	1918-19 (11 months)
New patients treated.....	15,860	16,584	13,669
Total patients' visits made.....	55,997	59,503	53,522
Average visits per day.....	184.8	196.37	194.63
Average cost per patient's visit—gross...	.277	.34	.281
Average cost per patient's visit—net (after deducting receipts).....	.057	.105	.087
Total prescriptions issued:			
Drug	21,604	23,690	21,424
Optical	1,344	1,271	757

MOVEMENT OF POPULATION

	In Hospital 8-1-1918	Admitted	Discharged	Died	Remaining 6-30-1919
Medical	37	725	596	108	43
Neurological	17	81	85	4	12
Dermatology	1	20	21	0	0
Pediatric	21	430	386	46	27
Surgical	43	330	332	21	40
Eye and Ear	4	90	79	1	8
Nose and Throat...	2	119	118	0	4
Urology	5	28	26	5	2
Gynecology	7	106	88	3	8
Obstetrics	11	249	246	2	15
	148	2,178	1,977	190	159

The fact that the period covered by this report consists of eleven months instead of twelve, renders it impossible to make accurate comparisons of cost or other statistics with preceding periods. The figures show, however, that there was a smaller relative number of patients cared for at a relatively higher cost.

The smaller number of patients cared for is explainable in part by the fact that from September 25 to November 27 admissions were limited to influenza cases only. This resulted in a marked decrease in the daily average number of patients in the Hospital during the months of October, November, and December and this is reflected in the daily average for the year which shows a decrease of over 11 per cent.

The increase in the daily average cost per patient is partly due to the lower daily average and in part to the increased cost of all commodities used by the Hospital.

The work for the greater part of the year was made difficult in all departments of the Hospital by the incidence of the influenza epidemic and absence of staff members who were in the service of the Government. A large number of nurses and other hospital employees suffered attacks of influenza while the epidemic was at its height, thus reducing the efficiency of the care of patients.

Dr. Edward P. Slater, an intern, and Miss Alice Ostergren, a nurse who had completed her training the day she was taken ill, both died of influenza, and I transmit an expression of appreciation of their competent and faithful service for all those with whom they were associated in their hospital work.

As for some months previously, Miss Louise M. Powell was in charge of the administration of the Hospital as Acting Superintendent from August 1, 1918, until March 10, 1919, at which time I resumed my duties as Superintendent after an absence of fourteen months.

Attention is invited to the reports of the Superintendent of Nurses and Director of the Social Service Department submitted herewith.

Respectfully submitted,

L. B. BALDWIN, *Superintendent*

THE PRESIDENT'S REPORT

THE SCHOOL FOR NURSES

The following report of the School for Nurses for the period beginning August 1, 1918, and ending June 30, 1919, is submitted:

Applications received	87
Student nurses matriculated	39
Student nurses withdrawn or dropped (preliminary).....	14
Student nurses withdrawn or dropped (undergraduates).....	11
Students graduated	20
Accredited nurses accepted	20
Certificates to accredited nurses.....	9
Army affiliates accepted.....	4
<i>Nursing Staff in Hospital and Out-Patient Department</i>	
Registered nurses:	
Superintendent, School for Nurses.....	1
Assistant Superintendent	1
Instructor	1
Operating Department	1
Obstetric Department	1
Night Supervisor	1
Pediatric Department	1
Surgical Supervisor	1
Medical Supervisor	1
Out-Patient Department	3
Seniors	18
Intermediates	20
Juniors	16
Accredited	6
Army affiliates	4

Owing to the influenza epidemic the total number of days of illness reached 678, almost double the record of last year. There has been one major operation and seven operations for removal of tonsils.

The most notable development in the work of the past year has been the organization of a Department of Public Health Nursing. This course was opened November 5, 1918, under the direction of the School for Nurses in coöperation with the Minnesota Public Health Association, to supply the increasing demand for nurses qualified to undertake service in public health fields.

Graduate nurses holding the diploma of an approved training school, or senior students in these schools, recommended by their superintendents for admission, are eligible to registration. Applicants of either class must present evidence of a four-year high-school course. The report for the year is as follows:

First semester, November 5, 1918, to February 28, 1919—	
Graduates	2
Senior students	11
Certificates granted	13
Second semester, March 5, 1919, to June 21, 1919—	
Graduates	12
Senior students	8
Withdrew on account of illness.....	1
Certificates granted	19

Another important development in the past year has been the organization of a five-year course in Arts and Nursing leading to the degrees

of Bachelor of Science and Graduate in Nursing. Already a number of students just out of high school and too young to enter the School for Nurses have signed up for this combined course.

Respectfully submitted,
MARION L. VANNIER, *Acting Superintendent*

THE SOCIAL SERVICE DEPARTMENT

The following report of the Social Service Department covering the period ending June 30, 1919, is submitted:

During this year the Department was obliged, as a war measure, to withdraw specially assigned clinic workers and pool all energies in the "General Department," in order to handle the calls made upon us.

We began the fiscal year by answering an unexpected call to check up the University men's boarding-houses, to help out the Housing Bureau.

Following this, our attention was turned to a special study of conditions and needs in our Pediatric Department, upon which we reported in November, the report having been delayed because of the influenza epidemic.

Considerable time was also given to consideration and study of the problem of the admitting and filing systems in the Dispensary which, while outside our immediate responsibility, is nevertheless very vital to our possibilities for good work.

During and following the influenza epidemic, we carried on a follow-up campaign of patients who were influenza patients at the University Hospital. Of course, the main facts which we were anxious to discover were any possible after-effects of the disease. At the same time, we could and did learn of many cases of social need due to broken families, long financial strain, etc. The group was a selected one only in so far as we eliminated nurses, physicians, and University students who might have the care of the University Health Service.

About three hundred visits were made, and the need of medical and social after-care surely justified our efforts. It also gave us an unusual opportunity to stress good health measures and reach a group who were in a receptive mood.

In spite of the school year, shortened by influenza and rearranged because of the S.A.T.C., the Department has been utilized at every opportunity for student work and has done more in this line than ever before. This included lectures and supervised field work, and many personal conferences and group discussions. In all, some sixty students have done work in the Department, and they included medical students, sociology students, nurses, and students from the Home Economics Department.

It was due to the coöperation of the latter volunteer group that we were able to undertake an experimental bit of intensive work with a dozen patients who, for want of a better term, might be called "nutrition" cases. These people often have no disease by which they can be classified, but they have not secured the proper balance of wholesome living, and we usually have found that their general debility hinges upon lack of sufficient and properly selected food.

Working out the dietetic program as a nucleus, we add the fundamentals of a hygienic régime of life and then supervise our patients while

they "take the cure." The results of the work have not yet been correlated, but we already know enough about the success of the work done to convince us that our Department must very shortly develop this line of work further.

And finally, as a Department of the Hospital and the Out-Patient Department, the primary task of medical-social service after all, would seem to be to know what it is the doctor wants and to impart it to the patient in such a way that he understands it and coöperates fully, that he may be restored to health and usefulness in the community at the earliest possible moment. This means establishment of personal relationship and an absolute confidence which demands time and patience; it means utilization of existing agencies which may help solve the problem. It means continuous education along the lines of general health and hygiene, and coöperative effort to make our education bear results.

Medical-social service work, as in many other fields, can not be measured by figures, but the increase of home visits over last year (668) is not discouraging considering our lack of staff in the Department and the Dispensary, and the continual change in personnel of our coöperating physicians and social agencies which necessarily delayed the work.

Ninety-five agencies were coöperated with in case work during this period, and 1,239 reports were given to inquiring agencies and individuals, an increased demand of 25 per cent upon us in this respect.

The clinics in which we have handled the largest number of cases are Dermatology, Medicine, Obstetrics, and Pediatrics, altho all others have been represented.

The work in the clinics can not be even suggestively recorded by figures, as we keep none to show the number of patients or physicians assisted there among our Dispensary attendance of 53,522.

Outside the clinics, the following figures may perhaps convey some idea of the time consumed in reaching our patients, who are scattered all over the city:

Total number of visits per patients.....	1,990
Reports to coöperative agencies.....	1,239
Number of agencies coöperated with.....	95

Several hundred new families came under our intensive care and the average number of visits to each patient was 6.

The types of cases and the services rendered each group do not change materially from year to year, but the task grows in size.

The personnel of the Department during the period has been as follows: Miss Marion Tebbets, Director; Miss Lydia Christ, Worker; Miss Ethel Jones, Worker (August, 1918); Mrs. Frances Lynch, Worker (February 15 to April 11); Miss Marjorie Adams, Worker (April to June); Miss Vera Warren, Worker (May 15); Miss Emma Joncas, Stenographer; Miss Corinne Plouf, Clerical Assistant (May 15).

This report is not complete without an acknowledgment of the coöperation of all workers in the Dispensary, Hospital, and outside agencies, without which the untiring efforts of our departmental workers could not have achieved the degree of success which has obtained.

Respectfully submitted,

MARION TEBBETS, *Director*

THE COLLEGE OF DENTISTRY

To the President of the University:

SIR: I beg to submit the following report for the year 1918-19:

The year seems to have evolved a certain climax in the development of dentistry on both the educational and the scientific sides. In this Minnesota has played its part, particularly in the establishment of a five-year course furthering a closer relationship between dentistry and medicine. This year Minnesota had the honor of graduating the first four-year class in dentistry.

On the scientific side, there has been a noteworthy verdict against certain long-established forms of technique, which has necessitated a re-orientation of clinical practice.

A graduate course has been established, and a graduate fellowship in Dentistry at Rochester. Extension work has been increased in scope.

A two-year course for dental nurses is well under way, in accordance with the act of the Legislature requiring dental nurses to be licensed.

No collegiate report for this year would be complete without a mention of military and naval activities. As nearly as can be determined from incomplete figures, at least 40 per cent of the alumni of the College were in some form of Government service. Practically all students were members of the S.A.T.C., and there was a noteworthy spirit of loyalty and devotion displayed in many ways.

Respectfully submitted,

ALFRED OWRE, *Dean*

THE SCHOOL OF MINES

To the President of the University:

SIR: I herewith submit my report for the University year 1918-19.

STATE MINING EXPERIMENT STATION

Personnel.—On December 10, 1918, Mr. E. W. Davis, formerly Instructor in Mine Plant and Mechanics, returned to the University to accept the position of Superintendent. Mr. Davis had been away on a two years' leave of absence, in order to perfect his magnetic log washer which he invented while connected with our staff. During his absence from the University, Mr. Davis was employed by Mr. W. G. Swart of Duluth, representing Mr. D. C. Jackling, who is closely identified with the organization which is going to mine and concentrate the low-grade eastern Mesabi magnetites. Mr. Davis, therefore, returns to the School well informed on Minnesota's many important mining and concentration problems, and has a thoro appreciation of the necessity of iron-ore conservation and its relation to the technical problems falling within the scope of our Experiment Station.

Recently acquired equipment.—Mr. W. G. Swart of Duluth, representative of the East Mesabi Syndicate, has deposited at the Mines Experiment Station approximately \$5,000 worth of experimental machinery, which is now available for testing samples received at the Station.

The Oliver Filter Company of San Francisco, California, has presented the Experiment Station with a 3'x2' Oliver Continuous Filter. The value of this machine is approximately \$500.

A new type of iron-ore concentrator is being developed. This machine will make available a considerable tonnage of low-grade "wash" ore which can not be handled by processes now used on the iron ranges. The machine has been examined by many competent mining engineers and has received much favorable comment. A full-sized machine will shortly be in the hands of the mining companies, who will then give the machine a thoro test on a commercial scale.

Activities.—The work of the Mines Experiment Station may be grouped as follows:

- A. Work submitted by citizens of the state:
 - a. Tests on large lots (1 ton or more)..... 7
 - b. Tests on small lots (under 1 ton)..... 310
 - c. Hand samples submitted for assay and examination..... 152
- B. Coöperation with the Minnesota Geological Survey:
 - a. Concentration tests on the titaniferous iron ores of the Lake Superior district.
 - b. Assays of reported gold-bearing material from various locations in the state.
- C. Experimental work for the conservation of the mineral resources of Minnesota:
 - a. Work in which United States Bureau of Mines coöperates
 - 1. Mechanical concentration of Lake Superior hematites.
 - 2. Concentration of the iron and manganese in the Cuyuna manganiferous iron ores.
 - 3. Concentration of the iron and the titanium in the titaniferous iron ores.
 - 4. Magnetic concentration of the Lake Superior magnetites.
 - 5. The consideration of the cost of the removal of silica from iron ores.
 - Mechanical processes versus the blast furnace.

6. Magnetic roasting and concentration of the Lake Superior hematites.
 7. Agglomeration of fine iron ore.
 8. Comparative reducibility of various iron ores and ore products.
 9. The design of an efficient roasting furnace for hematite ores.
 10. The smelting of fine iron ore.
 11. Removal of phosphorus from iron ore by leaching.
 12. Comparison of the gravimetric and volumetric methods for determining the phosphorus in iron ores.
 13. Lixiviation of manganese iron ores.
- b. Independent experimental work
1. Electrolytic deposition of iron from ores.
 2. The development of a high power wet magnetic separator.
 3. Magnetic head motion for tables.
 4. Methods for determining the amount of iron in the magnetic state in iron ores.
 5. Magnetic assayer.
 6. Utilization of fine magnetite in the manufacture of paint.
 7. A proper design of magnetic poles for magnetic separators.
 8. Technological investigation of peat.
- D. Coöperation with the United States Geological Survey:

The coöperative agreement with the United States Geological Survey still continues. From time to time, we have furnished the Survey official information concerning the mining industry of the state. During the past year, at the request of the Survey, we investigated the occurrence of potash in the Lake Superior iron ores, cokes, fluxes, and various furnace products.

Assays.—The total number of assays made in connection with all these activities during the past year was 8,569.

Publications.—A twelve-page pamphlet entitled, *The Mines Experiment Station and Its Relation to the Iron Mining Industry of Minnesota*, was published in February, 1919. It was well received by the mining public and has been the cause of a renewed interest in the conservation of the low-grade iron ores of the state.

The manuscript on magnetic concentration of the eastern Mesabi ores is about completed. It is expected to have the printed bulletin in the hands of the public early next year.

A complete card index of all the mines in the state, together with pertinent information regarding them is being compiled. This information, together with small maps of the iron ranges showing the location of the various mining companies, will be published later in small bulletin form.

New building.—The last Legislature made it possible for us to build a new Experiment Station building and equip it. The appropriation provides \$175,000 for this purpose. Work has already been started on the plans which will provide most practical and up-to-date laboratories for the treatment of ores.

UNITED STATES BUREAU OF MINES

Object.—The Lake Superior Station of the United States Bureau of Mines was established in July, 1917. The purpose of the Station is to investigate the mining and metallurgical problems of the Lake Superior district (Minnesota, Michigan, Wisconsin) and the iron-ore problems of the entire country.

Personnel.—Mr. Edmund Newton, first Superintendent of the Lake Superior Station of the United States Bureau of Mines, resigned September, 1918. Mr. C. E. Julihn was appointed his successor. Mr. Julihn's mining and metallurgical experience in the West and South well qualifies him for the work of the Station.

Associated with Mr. Julihn are Mr. G. E. Ingersoll, Assistant Metal Mining Engineer, Mr. P. H. Royster, Physical Chemist, Mr. C. E. Plummer, Chief Analyst, Mr. J. F. Fleischut, Chief Clerk, and Miss Z. L. Jones, Clerk.

Activities.—During the past year the work of this Station was largely confined to war problems, as indicated by the following publications of the War Minerals Investigations Series:

- No. 4, *Note on the National Importance of Allocating Low-Ash Coke to the Manganese-Alloy Furnaces* by P. H. Royster.
- No. 5, *Production of Ferromanganese in Blast Furnaces* by P. H. Royster.
- No. 6, *Production of Spiegeleisen in Blast Furnaces* by P. H. Royster.
- No. 9, *Problems Involved in the Concentration and Utilization of Domestic Low-Grade Manganese Ore* by Edmund Newton.
- No. 11, *The Use of Manganese Alloys in Open-Hearth Steel Practice* by Samuel L. Hoyt, Professor of Metallography, Minnesota School of Mines.
- No. 12, *The Jones Process for Concentrating Manganese Ores*. Results of laboratory investigations by Peter Christianson, Professor of Metallurgy, Minnesota School of Mines, and W. H. Hunter, Professor of Organic Chemistry, School of Chemistry.

The following problems have been undertaken by the Lake Superior Station of the Bureau of Mines with the coöperation of the State Mining Experiment Station:

1. Experimental smelting of manganese ores.
2. Fuel testing.
3. Beneficiation of low-grade gold ores of the Black Hills.

MINNESOTA TAX COMMISSION

Object.—The School of Mines still continues its service to the State Tax Commission. The ore estimates, as checked and submitted, are used as a basis for the valuation of mineral properties in the State of Minnesota.

Services.—Owing to the fact that our reports to the Tax Commission are made biennially, instead of annually, no detailed statement of services rendered by the School will appear in this year's report.

Personnel.—Mr. E. M. Lambert, assisted by Mr. A. J. Carlson, is in charge of the work. Both have established most cordial relations with the officials of the various mining companies, and this branch of service to the state continues to inspire a feeling of confidence in everyone concerned.

Recently acquired equipment.—Office conditions have been given considerable attention during the past year, with the result that a most reliable and up-to-date system of filing has been developed. A complete card index has been made, giving descriptions of and listing all information concerning the properties that have been estimated, and also the

properties on which we have not yet formally reported, but concerning which we have been given information. The so-called non-mineral reports are also included. Another index shows all the properties on the ranges, giving names, descriptions, and locations according to townships. A cross index has been made of all office correspondence and the system of filing the calculations made in estimating properties has been greatly improved. Much time was required on this work, but the ease and accuracy with which information on a given property can be obtained justify the installation of the necessary equipment.

EDUCATION

Registration.—The total registration during the year was 104, distributed as follows:

Graduate special.....	1
Seniors	8
Juniors	12
Sophomores	17
Freshmen	43
First-year	23
Total.....	104

Geographical distribution of students.—The above students were registered from Minnesota counties as follows:

Blue Earth	1	Redwood	1
Clay	1	Rock	1
Crow Wing.....	5	Saint Louis	20
Freeborn	2	Stearns	1
Hennepin	38	Swift	1
Lyon	1	Todd	1
Marshall	1	Wabasha	1
Nobles	1	Winona	2
Ramsey	14		

Students registered also from outside of the state as follows:

China	2	Pennsylvania	1
Michigan	2	South Dakota.....	1
New York.....	1	Spain	1
North Dakota.....	2	Wisconsin	2

Withdrawals.—During the year, 30 students withdrew. These students were distributed by classes as follows:

Seniors	2
Juniors	2
Sophomores	2
Freshmen	13
First-year	11

The reasons for these withdrawals were as follows:

Closing of S. A. T. C.....	18
Financial	2
Transferred to other colleges.....	3
Ill health	3
Dropped	1
Unknown	3

The Faculty.—The continued demand for technical men in the field is responsible for the resignation of Professor Samuel L. Hoyt, Associate Professor of Metallography, and the temporary absence of Mr. Francis B. Foley, Instructor in Metallography.

Mr. R. L. Dowdell, a graduate of the School of Mines, was appointed Instructor in Metallography to assist Professor Hoyt, who remained with us until the close of the year.

Mr. J. C. Sanderson, formerly associated with the University, returned to the institution to take the position of Instructor in Mine Plant and Mechanics.

The title of Mr. Thomas M. Bains was changed from Assistant Professor of Mining to Associate Professor of Mining, and the title of Mr. Anders J. Carlson was changed from Instructor of Mine Plant and Mechanics to Assistant Professor of Mine Plant and Mechanics.

Curriculum.—The changes made in the curriculum were largely brought about by the regulations laid down by the Government for the Students' Army Training Corps. As soon as this organization was disbanded, the School of Mines returned to its former curriculum and a determined effort was made to retrieve the educational losses incurred during the military control. Owing to the untiring efforts of the Faculty and the loyal response on the part of the students, each class completed satisfactorily the year's work and received a full year's credit toward the requirements for technical degrees.

The curriculum for the coming year was only slightly modified to meet the requirements of the new quarter system.

Attendance.—We are to be congratulated that, in spite of war conditions, our student attendance did not fall off and that members of our Faculty considered it as one of their greatest privileges, as well as their duty, to maintain efficiently their educational organization. Great sacrifices were made by all to carry on some war work, but they were made with a cheerfulness and determination that was clearly reflected in the overworked student body. The hearty coöperation of students and Faculty leaves no doubt as to the success of the institution during the years of reconstruction.

Respectfully submitted,

W. R. APPLEBY, *Dean*

THE COLLEGE OF PHARMACY

To the President of the University:

SIR: I herewith submit my report for the University year 1918-19.

Registration.—The College of Pharmacy completed its twenty-seventh year on June 19, which was also the twenty-sixth commencement of the College. A total of 11 students graduated; 1 from the course leading to the degree Graduate in Pharmacy (this graduate, J. B. Sugarman, matriculated for the Phm.G. degree before the course leading to the degree was abolished); 9 from the course leading to the regular college degree, Pharmaceutical Chemist; and 1 from the four-year course leading to the degree Bachelor of Science in Pharmacy. The war conditions account for the small number of graduates. Three members of the group taking the Pharmaceutical Chemist degree had graduated from other colleges of pharmacy and were given advanced standing here toward our degree. The number of students and graduates from other colleges of pharmacy coming to us for degrees is increasing. This is because of our higher standards and, therefore, greater value of our degrees. Mr. Ram Lal Bajpai, a student from India, took advanced standing in the four-year course (he left Corvallis, Oregon, to enter here two years ago), but did not quite qualify. He had earned enough credits however, to entitle him to the Pharmaceutical Chemist degree. Mr. Clifford F. Taplin and Miss Ethel Rasmussen of the group who took the Pharmaceutical Chemist degree were graduates respectively of the Highland Park College of Pharmacy and of the South Dakota State College. When the College opened last fall, of the students who registered, 18 were seniors and prospective candidates for graduation. Of these 18, only 11 graduated. The remaining 7 did not qualify for various reasons. Two left on account of illness, 2 decided to do the senior work in two years, 1 went through the entire course but did not earn ratings to entitle him to graduate. Two others could not resist the temptations of offers of positions at relatively high salaries. The total registration during the year reached 126: 89 first-year, 19 second-year, 14 third-year, 3 fourth-year, and 1 special second-year student. The total enrollment of last year was 72 and of the year before 105. The heavy freshmen enrollment was due to the war and the opportunity offered to young men of draft age possessing the required qualifications to enter the S.A.T.C. When the latter was disbanded, many of the freshmen in this College, as in others, found themselves financially unable to go on with the work of the regular course, and the enrollment, after the disbanding of the Corps, fell to less than one half. The College could not have accommodated the original 89 for more than the first quarter, during which the military and scholastic work was running concurrently, allowing only sufficient time for didactic work in Pharmacy. Most of the laboratory work usually done in the beginning of the school year had to be postponed. The College has an accommodation of only 62 laboratory desks for freshmen, and if the 89

freshmen had remained, a serious problem would have resulted. The Faculty gave instruction to a total of 202 students, including 76 medical students. Lectures were given also to high-school students, botany classes of the Arts College, to some Navy men taking training on the campus, and to nurses. These lectures related largely to the work being done in our medicinal plant garden.

Geographical distribution of students.—The student body represented the following political divisions: India 1, United States 125, the latter distributed among the states as follows: Arkansas 1, Minnesota 102, Montana 4, North Dakota 2, South Dakota 11, Wisconsin 5. From Minnesota counties: Anoka 1, Big Stone 1, Chippewa 1, Chisago 3, Dakota 1, Douglas 2, Fillmore 1, Faribault 1, Hennepin 36, Houston 1, Itasca 2, Kandiyohi 2, Lac qui Parle 1, LeSueur 1, Morrison 1, Marshall 1, Mille Lacs 1, Meeker 3, McLeod 3, Olmsted 2, Otter Tail 4, Pine 1, Pope 1, Polk 1, Ramsey 2, Redwood 2, Renville 1, Rice 4, Sibley 1, St. Louis 3, Scott 2, Swift 1, Steele 3, Traverse 3, Waseca 3, Wright 4.

Instruction.—The regular University year was divided into three approximately equal periods, instead of as heretofore into two semesters. This was brought about primarily through the establishment of the S.A.T.C., whose work from the military side was scheduled in quarter-year periods. The experiment, carried on during the first quarter, of having students do scholastic and military work concurrently, was not a success in Pharmacy altho the Faculty did its utmost toward an affirmative outcome of the experiment, especially in view of the fact that the Dean of the Faculty had twice been called to Washington by the Committee on Education and Special Training of the War Department, to advise and assist the Department in outlining and determining a war course in pharmacy. This latter course, as approved by the Government, was based upon the four-year University course in Pharmacy, but on account of the need of speedily producing more thoroly trained pharmacists for the Army, had to be intensified to a degree that required concentrating the work of a semester, or half a University year, into a quarter. The eight-semester course in Pharmacy was, therefore, condensed into an eight-quarter one. The students, as members of the S.A.T.C., were therefore expected to do this intense scholastic work and at the same time carry a fairly heavy military schedule, all under conditions of scholastic and military discipline and life to which they were entirely unaccustomed and to which many had not the strength and health to adapt themselves quickly. All were willing, and earnestly endeavored to meet the strenuous requirements made necessary by the war. By establishing and approving a war course in pharmacy, the Government for the first time recognized the professional nature of pure pharmacy and its basic need of a better educational foundation.

Because of the war conditions it was not possible to carry on the normal work during the period constituting the first quarter, but after the disbanding of the S.A.T.C. the regular work was continued in such a way that by commencement time the usual year's work in all classes had been completed. The usual special lectures to the entire student body,

however, were omitted, as were the usual educational trips to local drug millers, manufacturers, and jobbers. The extensive and important Government work which the College again carried this year, as during the previous year, made it possible to increase and emphasize the instruction bearing upon medicinal plant culture and to increase research work in that connection. As in former years the several classes attended the sessions of the Scientific and Practical Section of the Minnesota Pharmaceutical Association in February at St. Paul. No additions were made to the Faculty. The vacant instructorship was not filled because no suitable candidate could be found for the salary available. Three student assistants were engaged instead: senior James B. Mayo to assist in Pharmacognosy, and senior Margaret H. O'Connell and junior Charles V. Netz to assist in Pharmacy and Pharmaceutical Chemistry.

Pharmacy prizes.—The Minnesota State Pharmaceutical Association prize of \$75, which last year was awarded to Miss Edna V. L. Newhouse, was this year won by Miss Elizabeth M. Malerich.

Free dispensary.—The seniors of the College, under the supervision and instruction of Instructor Blossmo and assistants, dispensed a total of 21,424 physicians' prescriptions during the eleven months, August 1, 1918, to June 30, 1919, inclusive. The numbers of prescriptions dispensed during the respective months are as follows:

August, 1918	2,003
September	1,755
October	1,571
November	1,586
December	1,723
January, 1919	2,192
February	1,950
March	2,460
April	2,222
May	2,080
June	1,882
Total	21,424

The influenza epidemic accounts for the heavy prescription work during the spring months.

The departmental library.—The library was placed in charge of Charles E. Smythe with the consent of the University Librarian, and was kept open daily from 8:00 to 9:00 a.m., and from 4:00 to 5:00 p.m., on Tuesdays and Fridays from 7:00 to 9:00 in the evenings, and on Saturdays from 8:00 to 12:00 in the morning. Mr. Smythe was released from his other regular duties during these hours. This arrangement grew out of the inability of the University Librarian to furnish a departmental librarian.

Because of the abnormal conditions the library was not utilized as extensively as it otherwise would have been. Owing to lack of lecture and recitation rooms in the Pharmacy Building, the library reading-room was used daily for instructional purposes.

Pharmaceutical service.—The activities of the College are increasing in all directions. During the year it has supplied in wholesale quantities

the needs of the Free Dispensary and the Hospital of Pharmacopoeial and National Formulary preparations. It also supplied in increasing proportions the preparations needed by the Dental College, the Health, Veterinary, Pharmacological, and other departments. The extensive service to the War Department of the United States is mentioned in another paragraph. The number of wild medicinal or supposedly medicinal plants sent in from all parts of the state for identification was greater than ever. Calls for digitalis of our production from pharmacists upon physicians' specifications increased measurably. Requests for analyses of medicinal and proprietary preparations are increasing. In a few meritorious cases we complied with the requests but the rest we refused. Our staff is not large enough to do much of this kind of work and if it were, I question whether we could consistently use it for this purpose. Most of these requests are based upon ignorance of the time, skill, and work involved. Many who make the requests are merely curious to know what a preparation is made of; others want to know the formula to enable them to manufacture the thing themselves; some want to use us for advertising purposes, etc. We conducted for the Minnesota State Pharmaceutical Association, and in a limited way for the State Board of Pharmacy, inquiries by examination into the more important and largely used medicinal and household remedies. The report on this work can be found in the proceedings of the State Pharmaceutical Association. The inquiries concerning the cultivation of medicinal plants are continuing. We restrict ourselves to giving cultural and other directions to those only who are qualified to handle drugs. Others we discourage. We have supplied during the spring an increasing number of our graduates and other pharmacists and a few physicians with digitalis seed or plantlets. A number of pharmacists throughout the state are now cultivating their own digitalis, hydrastis, and other vegetable drugs because of our help in this direction. In the near future we ought to publish a bulletin or a series of bulletins relating to the pioneer work we are doing in connection with the Medicinal Plant Garden.

Outside activities.—This year, as last year, because of the war conditions, the Faculty's outside activities were somewhat more limited than usual, but nevertheless were fairly extensive. They included only such activities as could not be refused, such as the identification of wild plants; advice and suggestions on medicinal plant culture; the examination for adulteration or strength of pharmacopoeial and other strictly medicinal drugs and preparations; the formulation and conduct of the proceedings of the Scientific and Practical Section of the Minnesota State Pharmaceutical Association; the editing and publishing of the entire proceedings of the 1918 convention of the Association; the editing of the *Northwestern Druggist* through all of its monthly issues; the giving of advice relating to difficult prescriptions and formulae; the attendance upon, and the taking part in the meetings of the American Pharmaceutical Association, the National Association of State Boards of Pharmacy, the National Association of Retail Druggists, the Conference of Pharmaceutical Faculties, the National Drug Trade Conference, the Northwestern

and the Chicago Branches of the A. Ph. A., the Iowa, Wisconsin, North and South Dakota State Pharmaceutical Associations, the Accident Prevention and other Committees of the Civic and Commerce Association, the United States War Department Committee on Education and Special Training, the Liberty and Victory Loan and the War Chest drives; the giving of 21 lectures and addresses to local and national bodies, including (1) the principal address before the War Department Committee on Education and Special Training Conference at Washington, September 30, in the matter of the establishing of a war course in pharmacy in connection with the S.A.T.C. at the principal universities, (2) the principal addresses at three meetings of the State Legislative Committees of the House and the Senate, which address in a large measure resulted in the passage of the Pharmacy College Prerequisite Bill, (3) the principal address before a joint meeting of the American Conference of Pharmaceutical Faculties and the National Association of State Boards of Pharmacy, which address was reproduced in the leading pharmaceutical journals and reprinted by the Boards Association and distributed to 5,000 pharmacists, associations, and other bodies; the writing of over 20 papers and essays which were printed in the journals or association proceedings; participation in work incident to membership in 4 executive and council and in 17 ordinary committees of various pharmaceutical associations.

War work.—The war work of the College, begun soon after war was declared by the United States, continued during the greater part of the year. A wider area of digitalis was planted and practically the entire crop converted into tincture for the Army. The War Department also sent us some wild digitalis collected in Washington State and Oregon, but this was not comparable in quality with our own. Part of it, however, was mixed with our own and made into the tincture. Last year we furnished the Government with 8,208 eight-ounce bottles of the tincture, assayed and standardized physiologically according to the Hatcher cat method. This year we furnished about 50 per cent more of similarly standardized tincture. Altogether we furnished 21,060 bottles (585 cases) and shipped them according to directions of the Surgeon General's office to many parts of the country and to France.

To produce 21,060 bottles of this tincture was a factory job and at times the College laboratories looked like a wholesale drug manufacturing concern. The entire force, including the Faculty, service men, and student body, worked loyally and uncomplainingly not only during the daytime but frequently until late at night. All were more than glad of this opportunity to do a little something toward winning the war.

A member of the professional staff, with your approval, did considerable work for the United States Shipping Board. He applied tests for identity, purity, and strength to nearly all of the quite large list of pharmaceuticals contained in the official chests of medicines for use on shipboard.

Respectfully submitted,

FREDERICK J. WULLING, *Dean*

THE SCHOOL OF CHEMISTRY

To the President of the University:

SIR: I beg to submit herewith my report for the college year 1918-19 (August 1, 1918, to June 30, 1919). Because of absence on leave my contact with the School of Chemistry was not an intimate one until January 1, 1919. It is only by reports which have been given me of the work of the first quarter that I can speak of the conditions which prevailed in the department at that time. The organization of the S.A.T.C., with the necessity of offering a curriculum designed by the War Department, made it necessary to reorganize most of the courses offered in the School of Chemistry. A number of members of the teaching force were absent on leave in war work, and scarcity of teachers made it very difficult for the School of Chemistry to obtain sufficient assistants to carry on the courses offered during the first quarter. In some cases undergraduate students were called upon to act as assistants in the laboratories because of the impossibility of securing more mature assistants. At the beginning of the second quarter it became possible to arrange a curriculum more nearly in accordance with the usual plan of the School, but considerable duplication of courses was required to accommodate beginning classes in professional schools and to take care of continuation courses for those who had commenced their work under the S.A.T.C. plan. This confusion has prevailed throughout the year, and as a result of it the normal curriculum which has been planned for next year will not apply in all cases, since many irregular students will have to be taken care of and courses planned for them.

The Faculty.—During the past college year a number of new appointments were made: M. Cannon Sneed, Associate Professor in charge of the Division of General and Inorganic Chemistry; Frank C. Whitmore, Instructor, now Assistant Professor of Chemistry; G. B. Heisig, Instructor in Chemistry; Lawrence M. Henderson, Instructor in Chemistry, reapointed after his return from war work; Frank W. Bliss, Assistant Professor of Chemistry.

The following members of the Faculty have been absent on leave in connection with war work: L. W. Jones, Dean, G. B. Frankforter, Professor of Chemistry, Sterling Temple, Associate Professor, R. A. Baker, Assistant Professor, and F. W. Bliss, Assistant Professor.

During the school year the following members of the department presented resignations: Sterling Temple, Associate Professor; R. A. Baker, Assistant Professor. At the close of the school year Dr. F. L. Bardwell, Lecturer, appointed as a substitute, handed in his resignation. The appointment of Mr. C. L. Schumann was terminated at the close of the college year.

The personnel of the Faculty was found to be entirely inadequate to carry out the purposes of the School of Chemistry in a large University. On that account requests were made in the budget for next year for the

appointment of new men to fill important positions and the appointment of additional instructors and assistants to advance the standing of the School of Chemistry both with respect to quality and quantity of work it plans to offer. It is hoped that before the end of the next school year the staff will be materially strengthened and increased so that plans for the future may be formulated and some beginning made towards a more complete realization of the usefulness of the School of Chemistry.

Student body.—The following table shows the attendance of students in the School of Chemistry during the three quarters of the school year. It does not include students enrolled in the Graduate School.

	First quarter	Second quarter	Third quarter
Freshmen	28	37	35
Sophomores	27	28	27
Juniors	15	21	22
Seniors	10	11	11
Post-seniors	2	2	2
	—	—	—
	82	99	97

It is also to be noted that a large number of students taught by instructors in the School of Chemistry come to us from other schools and colleges of the University, and that the number indicated above is merely a list of those who are specializing in the School of Chemistry. The large burden of teaching which falls upon the School is that which is associated with the teaching of students from other schools and colleges. There is every reason to believe that the number of students enrolled in the School of Chemistry will increase materially during the year 1919-20.

Curriculum.—At the beginning of the second quarter many changes were made in the curriculum of the School of Chemistry. In the first place a great diversity of courses offered in General Inorganic Chemistry made it necessary to duplicate the lecture courses, which was found to be an intolerable burden. Some success was met with in persuading the various professional schools to use standard courses which would eliminate the duplication of lectures. We have attempted to put in the same lecture courses students from various colleges, and during the next school year I anticipate that it will be possible to cut down the number of lecture sections from 14 to 8, at the same time taking care of all the students from the schools and colleges with better success than we have had in the past. If our plan for the next year is successful we may even reduce the number of sections to a still greater extent.

Many short specialized courses which never had an enrollment of more than five or six students have been eliminated entirely from the curriculum, and have been replaced by a few substantial courses which are designed to give students real discipline in the fundamental principles of chemistry. A large number of analytical courses highly specialized in character have been merged into more combined courses which can be better organized and give real discipline to the student. A few graduate courses have been introduced and it is expected that in the near future better facilities for graduate work will be available in the department.

Building equipment.—In order that the work of the School of Chemistry may progress successfully it will be necessary to make many modifications in the rooms and laboratories as they now stand. This is particularly true of those laboratories which are planned to accommodate the students beyond elementary courses; viz., those taking courses in Physical Chemistry, Organic Chemistry, and Industrial Chemistry. Plans are now prepared for the enlargement of the laboratory of Physical Chemistry, which will make a beginning along this line, but will not provide laboratories for Physical Chemistry at all adequate to take care of the students who enroll in this division. It is also arranged to enlarge the space provided for students who are pursuing advanced work in Organic Chemistry, and to provide a laboratory which will accommodate fifteen or twenty students in place of three small rooms which now accommodate about six students without proper facilities for their work.

A number of the rooms in the present School of Chemistry are to be adapted for the use of laboratory purposes in Industrial Chemistry. The appointment of an Associate Professor, Professor C. A. Mann, to act as director of the Division of Industrial Chemistry will make it necessary to provide laboratories in which the work may be conducted. This may be accomplished temporarily and very inadequately by moving certain partitions in the basement laboratories. Even then only a meager beginning will be possible. I wish to urge that the plan for the erection of a building suitable for Chemical Engineering be taken into consideration, and that some assurance may be given that the time will not be far distant when its erection may become a reality. Until that time I feel that it will not be possible for us to instruct our students in Chemical Engineering as they should be taught at a large university offering a Chemical Engineering course.

Stockroom service.—During the past year the service rendered in the various laboratories in the School of Chemistry by the stockroom has been entirely reorganized. It is my conviction that there is no one factor in the large department of Chemistry more important than the organization of this service. In the fall of 1918 the appointment of Mr. H. H. Barber to supervise the reorganization of the stockroom service and lecture demonstration made it possible for me to begin this important reconstruction. During the school year Mr. Barber has reorganized the stockrooms and has eliminated a number of the separate ones which have been merged into larger rooms. He has commenced an inventory of our stock and supplies, has organized the lecture demonstration work, and has arranged the service so that students have been more satisfactorily supplied than in the past. During the summer it is our plan to convert the museum of the School of Chemistry into a main general stockroom from which most of the supplies issued to students will be dispensed. At the same time, we contemplate the introduction of a breakage system which will make it necessary for the student to be accountable for the care and use of his materials and will introduce a new element into the pedagogical aspect of the work of the School of Chemistry.

Business office.—During the past year the business' office of the School of Chemistry has been reconstructed and will be arranged to serve as a central office through which the details of the administration of the entire school will be conducted. The enlargement of the business office and the plan of it will make it possible to handle registration more efficiently and keep more accurate records of the students' work and of the business affairs of the department.

Respectfully submitted,

LAUDER W. JONES, *Dean*

THE COLLEGE OF EDUCATION

To the President of the University:

SIR: I herewith submit my report as Dean of the College of Education for the year 1918-19.

REGISTRATION

The College of Education registers: (1) students who have completed at least the freshman and sophomore years of the College of Science, Literature, and the Arts, or some other college at the University of Minnesota or elsewhere; (2) graduates of the advanced course of approved normal schools, to whom it grants sixty credits of advanced standing; (3) graduate students; (4) unclassified students, chiefly teachers who are engaged in service, and who do not yet possess a Bachelor's degree.

In addition, the College of Education, during the year now closing, had supervision of the students registered in the Handicraft Guild.

The following table shows the registration for the years 1915-16, 1916-17, 1917-18, 1918-19.

REGISTRATION IN THE COLLEGE OF EDUCATION

	1915-16	1916-17	1917-18	1918-19
Juniors	39	47	39	39
Seniors	41	38	42	33
Graduates	14	29	25	17
Unclassed	13	92	111	75
Handicraft Guild (Art Education) .....	..	..	..	48
Total	106	206	217	212

Registration according to courses.—Registrations in all courses not including the special methods courses, totalling 1,227, were distributed as follows:

	S., L., & A.	EDUCATION	GRADUATES	AGRICULTURE
History of Education	147	26	1	..
History of Education (Adv.)	3	5	1	..
American School .....	..	..	..	43
School Organ. and Admin. ....	..	31	5	..
Social Aspects of Education	118	23	1	..
Industrial Education	49	16	..	..
Technique of Teaching	186	45	..	..
Seminar Courses .....	..	..	6	..
Educational Administration .....	..	5	1	..
Theory of Supervision .....	..	23	3	..
Practice Teaching	122	25	1	..
Psychol. of Elem. Sch. Subjs. ....	..	7	4	..
Elem. Educational Psychol.	50	23	..	..
High School Problems	31	8	5	..
Experimental Education .....	..	6	3	..
Psychol. of Sec. Sch. Subjs.	10	7	1	..
Adv. Educational Psychol. ....	..	6	4	..

	S., L., & A.	EDUCATION	GRADUATES	AGRICULTURE
School Curricula	4	11	..	..
Psychol. of Learning.....	6	3	3	..
Psycho-Educ. Clinic	1	2	3	..
Educational Diagnosis	7	11	2	..
Psychol. of Trade Educ.....	1	5	..	..
Reconstruction Program	7	29	9	..
School Sanitation	23	2	..	..
Methods of Research.....	..	4	6	..
Mental Tests .....	..	8	5	..
History of Elem. Educ.	2	1	..	..
Educational Classics	8	1	..	..
Foreign Schools	7	3	..	..

SUMMARY

College of Agriculture.....	43
College of Science, Literature, and the Arts.....	782
Education	336
Graduate students	66
Total	1,227

REGISTRATION IN THE UNIVERSITY HIGH SCHOOL

	1915-16	1916-17	1917-18	1918-19
Freshmen	32	56	82	57
Sophomores	26	29	28	65
Juniors	14	25	21	41
Seniors	26	26	26	28
Totals	98	136	157	191

Leaves of absence.—Leaves of absence granted Dr. M. E. Haggerty and Dr. W. S. Miller in the spring of 1918 to engage in war work were continued for the year 1918-19.

In August the Regents granted Dean L. D. Coffman an indefinite leave to serve as head of the Department of Education in the Division of Physical Reconstruction in the Surgeon General's Office. Upon completion of the organization of the educational service for the education of disabled soldiers, Dean Coffman returned to the University, January 1, 1919.

Professor A. V. Storm was given leave of absence, January 6, 1919, to pursue graduate study at Peabody College, Nashville, Tennessee.

New appointments.—New appointments for the year 1918-19 were as follows: College of Education—Raymond W. Sies, Professor of Education; Hermione L. Dealey, Assistant Professor of Educational Psychology; Elizabeth Fish, Lecturer in Trade and Industrial Education; Agnes Fryberger, Assistant in Public School Music; Raymond N. Carr, Assistant in Public School Music; Helen Marr, Assistant in Art Education; Hazel Small, Assistant in Art Education. University High School—W. Ray Smith, Instructor in Mathematics; James Mackell, Instructor in Science; Ethel Dustin, Assistant in Art; Sybil Fleming, Instructor in History.

Superintendents' and Principals' Short Course.—The College of Education, in conjunction with the State Department of Education, offered at the University during the spring, February 12 to 15, a sixth annual

short course for city and county superintendents and high-school and graded-school principals. Addresses were delivered by Dr. W. W. Chartres, Dean of the College of Education of the University of Illinois, and Dr. W. F. Russell, Dean of the College of Education of the University of Iowa.

The conference of teachers of secondary subjects usually held at the time of the short course for superintendents and principals was abandoned for the year, because the public authorities felt, on account of the fact that their schools had been closed by the influenza epidemic for several weeks and in some cases months, that they could not release teachers to attend the conference.

Bureau of Coöperative Research.—The coöperative study with high-school teachers of English described in the report of last year was completed and published. The report gives an evaluation of the Harvard-Newton Scales for grading English composition and tentative standards of achievement for the various years of the high school as measured by the Thorndike Extension of the Hillegas Scale, and the amounts of gain in ability to write English Composition that occurs from year to year.

During the past year tests have been given to the freshman class in several representative high schools of Minnesota to measure the ability of students entering the high school to write English composition, to read for comprehension, and to score in the Trabue Language Completion Tests, in opposites tests and in analogies tests. These results will be available to measure the progress of the same students through their high-school course, to give another means of determining the causes of school failure and the dropping out of students.

Degrees and certificates.—The degree of Bachelor of Arts (in Education) was conferred upon 23 candidates in June, 1919. Twelve students are now completing work for their degrees and will receive them at the close of the Summer Session of 1919. Of these students, 11 were granted supervisor's certificates, 2 rural training certificates, 1 a certificate for kindergarten work, 2 certificates in commercial subjects, and 1 in art education. The remaining graduates of the College of Education were certificated in the various secondary school subjects which they had prepared to teach.

In addition, certificates were granted by the College of Education to graduates of other Colleges as follows:

COLLEGE OF AGRICULTURE	
In agriculture	5
In home economics	37
COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS	
In secondary school subjects	80
SCHOOL OF MUSIC	
In public school music.....	7
Total	129

Graduate registration and the Library.—The graduate registration with Education as a major dropped from 25 students in 1917-18 to 17 students in 1918-19. Only surgery at Rochester exceeds Education in the number of students taking graduate work. In last year's report we

called attention to the difficulties under which these students do their research work. No seminar room is provided for graduate students in education in the University Library—in fact, no room is provided for any students in Education. Seminar rooms are provided for some departments, and every college with the exception of the College of Education, has a paid librarian. A room, badly needed for class work, has been set aside in the College of Education building for the use of graduate students. Members of the staff have devoted much time and attention to providing source material for these students. The situation was improved somewhat this last year due to the fact that the President of the University provided that a student be employed at twenty cents an hour to take charge of this room. The services of Miss Judith Jacobs, a former employee of the main Library, were secured. There was a noticeable improvement at once in the character of the library work done by students. Miss Jacobs kept the files straight, sent for missing copies of school reports and the publications of educational associations, and assisted graduate students in finding source materials. But the situation will never be fully satisfactory until a permanent librarian is employed.

Handicraft Guild.—On April 12, 1919, the Regents formally took over the Handicraft Guild, making it the Department of Art Education in the College of Education. The work of this Department has commended itself to every one who has inspected it or studied it.

An honorary society, known as the University Art Club, was organized during the past year, with an initial membership of ten students.

Smith-Hughes Bill.—The Smith-Hughes Bill, enacted by Congress in 1917, provides, among other things, for training of teachers in home economics, agriculture, and trades and industries. Federal funds amounting to \$5,097.25 in home economics, \$5,351.50 in agriculture, and \$5,351.50 in trade and industrial education will be available during the year 1919-20. These funds must be matched dollar for dollar by state money. Completely organized curricula in home economics and agriculture were already in existence; a curriculum for the training of teachers in trades and industries (see Bulletin 1917-18) was prepared and adopted. As this curriculum was adapted to the needs of students of non-collegiate grade, it was offered in cooperation with the Extension Department in four centers—Minneapolis, St. Paul, Duluth, and Virginia. Ninety-eight students registered for the work.

A curriculum for physical education.—Within the past two years twelve states have made laws which require the teaching of prescribed exercise in all elementary and secondary schools in the state; without doubt other states will shortly follow suit. At present there are not more than 5,500 teachers of physical education in the entire country. Forty-three thousand teachers will be necessary to deal with the elementary and secondary school problem alone.

The reason for the new laws is the disclosure through the statistics compiled in the army draft that one third of the young manhood of this country is unfit to serve its country in military service. Lack of physical development, accompanied by low vitality and endurance, was found to be one of the most important factors in this unfitness.

It was recognized that during the growing years the physical development and efficiency of these young men had been neglected, and also that the schools had been at least as neglectful of its girls as of its boys in this respect. Therefore interest was aroused all over the country to include in the education of every boy and girl proper physical training and a knowledge of the laws of rational hygienic living. It is more clearly recognized all the time, moreover, that the young adult in sedentary occupations that entail scarcely any muscular activity is in danger of acquiring early in life degenerative diseases of heart, kidney, liver, etc., and therefore that regularly organized exercise should be a part of his daily routine. Hence the need for sixty thousand leaders for factories and other industrial plants.

The acute need for teachers and the good salaries offered will tempt half-trained people or even untrained persons to accept positions in one of these fields. The disadvantage of this to the community will be great, and the teachers will themselves suffer in that they will probably never receive recognition by their colleagues or rise to positions of responsibility. Their presence in the field, however, will intensify the demand for persons of broad preparation who can act as directors and supervisors.

Facts such as these have led to the organization of a course for the preparation of teachers and supervisors of physical education.

Committee on Appointments.—I am including a few of the more essential items of the report of the Committee on Appointments in this report for two reasons: (1) because they convey information of interest and value to members of the Faculty and citizens generally, and (2) because the Committee on Appointments by virtue of the policy established this year is now assigned to the budget of the College of Education. The tabular material was supplied by Mr. George A. Selke, Secretary of the Committee.

This is the first year that the Committee on Appointments has employed a person to give his entire time to its work. A secretary was engaged to take charge commencing January 1, 1919. From August 1 to December 31, 1918, no one was employed and consequently the records for that period are incomplete and unreliable, so accurate accounts can not be compiled from them. The statistics cover only the period of January 1 to June 30, 1919. The advisability of having a secretary who can give his entire time and attention to the affairs of the Committee is easily shown by a comparison of this year's business with that of former years. The total amount of business transacted for the entire year of 1916-17 was \$43,623; for the entire year of 1917-18, \$73,532.50; while for the six months, January 1, 1919, to June 30, 1919, the business totalled \$126,992.50. This amount would be greatly increased if that done between August 1 and December 31, 1918, were included. The commissions which would have been charged for this service by commercial agencies would amount to \$6,349.63. The service of the Committee on Appointments is free to students; the University pays the salary of the secretary and the stenographer. Subtracting their salaries, the cost of postage, stationery,

and printing from the commission commercial agencies would charge, there remains \$4,800, a net saving for the six months' period.

TABLE I. SUMMARY OF THE VACANCIES REPORTED FOR THE SIX MONTHS, JANUARY I TO JUNE 30, 1919

REQUESTS FOR TEACHERS	
Teachers in rural schools.....	0
Teachers in grades	38
Teachers in junior high schools.....	7
Teachers in high schools.....	618
Teachers in normal schools.....	9
Teachers in colleges and universities.....	13
Music supervisors	23
Principals of junior high schools.....	0
Principals of grade schools.....	46
Principals of high schools.....	76
Superintendents of high-school systems.....	30
Total	860

TABLE II. YEARLY SALARIES OF REGISTRANTS PLACED

	MODE	MEDIAN	AVERAGE
Secondary teachers	\$ 810.00	\$ 891.00	\$ 863.72
Principals	1,400.00	1,300.00	1,300.58
Superintendents	1,500.00	1,566.00	1,657.14

TABLE III. TOTAL SALARIES OF REGISTRANTS PLACED

108 Teachers	\$ 93,282.50
17 Principals	22,110.00
7 Superintendents	11,600.00
Total	\$126,992.50

TABLE IV. REGISTRANTS PLACED ACCORDING TO DEGREES

B.A. degree	127
Advanced degree	5
Total	132

TABLE V. REGISTRANTS PLACED, ACCORDING TO EXPERIENCE

Experienced	56
Inexperienced	76
Total	132

Needs.—The liberal appropriation of the Legislature for the University will enable the College of Education to provide for some of the things for which it has been seeking assistance during the last four years. Certain needs, however, remain or will arise in the near future. They are:

1. *Provision for the training of teachers in commercial education.*—Every year for four years we have called attention to this need. The University is now making provision for the establishment of a School of Business. The chief contact which the College of Education would have with the School of Business would be in the training of teachers of

commercial subjects. This contact can not be made without some one in charge of the teacher training end of this work.

The Legislature made an appropriation of \$10,000 two years ago for equipment for the College of Education. It was intended to use most of this money to secure equipment for commercial education. Due to the necessity of retrenching and of saving funds during war times the money was diverted to a general equipment fund. None of it was spent for the original purpose for which it was intended.

2. *A professor of elementary education.*—Many normal school graduates attend the University for the purpose of taking more advanced work than the normal schools afford. In most cases these students expect to remain teachers in the elementary grades, and should be encouraged to do so. Four years of training beyond the high school will be regarded as the minimum training for elementary teachers in the near future. We are not prepared to offer these students the kind of work they need.

3. *A professor of comparative education.*—It is becoming increasingly imperative that more attention be given to the comparative study of foreign school systems.

4. *A professor of higher education.*—This represents an undeveloped field. Progress in higher education is made largely on the basis of cut and dried methods when it ought to be made on the basis of carefully made, scientifically conducted studies. Some one should make such studies and offer courses covering various aspects of the administration of higher institutions.

5. *The development of public school music.*

6. *Provision for training of librarians for the public schools of the state.*—Every librarian in a high school in Minnesota must be a college graduate trained for her work.

7. *The development of the Bureau of Coöperative Research.*—Minnesota is falling behind other state universities in the development of this Bureau. Support for it is quite as essential as support for coöperative research in any other college and will pay quite as large dividends.

8. *Provision for physical directors for the High School.*

9. *A teacher of the biological sciences in the High School.*

10. *The establishment of an elementary school.*—We should plan for an experimental school which provides facilities for instruction and experimental work with all classes of grade-school children. We should concern ourselves with the problems relating to the administration and supervision of every department of the public schools.

II. *Increased space for college classes.*—The College of Education building is now used to its maximum. No expansion of the High School is possible unless the college classes can be removed from the building. And no more college classes can use the building unless they are scheduled after four o'clock.

Respectfully submitted,

LOTUS D. COFFMAN, *Dean*

THE GRADUATE SCHOOL

To the President of the University:

SIR: I submit herewith my annual report showing the registration and usual statistics covering the work of the Graduate School for the year 1918-19.

For a considerable part of this year, that is, until January 1, the work in the Graduate School was under the direction of Dr. C. M. Jackson, as Acting Dean. I can not express too highly my appreciation of Dr. Jackson's efficient service in this capacity, both this year and throughout the preceding year. In both his management of the administrative affairs and in his relations to the students he has carried on admirably the functions of the office. I am sure he would agree with me when I add that much of the continuing efficiency was due to the unremitting services of my secretary, Mrs. F. E. Pierce, whose long experience in the details of the office has enabled her to carry a considerable burden in the usual office routine.

Conditions in the matter of the Graduate School have been so abnormal during the past year that I shall make no extended comments nor attempt to draw any particular conclusions from our experience in the immediate past. The Graduate School of the University of Minnesota, both in its teaching staff and in its student body, has been, during the past year and a half, like every other agency, chiefly concerned and especially active in the prosecution of war work. The part that they have played, both instructors and students, in the successful prosecution of the war, is a creditable page in the history of Minnesota and of the University.

I am delighted to see so many of the instructional staff and also of the students returning to pursue their pre-war activities on the campus, and I rejoice to see the effective work that has been done in strengthening many departments. As each new situation is cleared up it leaves us freer to concentrate on the departments where personnel and equipment may need the support of new appointments and larger funds. It should not be, I believe, our purpose to attempt to cover all fields, but rather, having undertaken certain things here, to develop them to a creditable point of academic efficiency.

I am much concerned for the future of university work. Altho our fellowship list is not large outside the Mayo Foundation, we usually have a very respectable number of applications for these stipends. There were fewer applications this year, and on the whole the material offering itself seemed less competent and promising than two years ago. More disturbing still is the news that comes to us once in a while that graduate students who have taken their degrees in fundamental work are either now turning to professional courses or are deserting academic work for the more profitable fields of private enterprise. I doubt if they can be blamed considering the present status of academic salaries in general contrasted with the returns in other work, now much increased by the rising

appreciation in the outside world of the value of the specialist. I think a perfectly typical case is afforded by the fact that we have recently appointed as Teaching Fellows in Medicine men who had already taken their degrees and done teaching in fundamental laboratory branches. No department, for instance, has done better work or turned out a more adequately trained group of graduate students than the department of Anatomy, but I think I am safe in saying that at the present time every graduate student who has taken his degree in Anatomy is now either pursuing the study or the practice of medicine, finding in this a more adequate financial return. What this means for the future, not only with ourselves, but with every other institution, can easily be imagined. It is with some difficulty that I have held graduate students as assistants in various departments, for the pressure for instructors in certain fields has reduced colleges to the necessity of taking younger teachers, even tho they have not their degree or any appreciable amount of graduate training.

Academic salaries are advancing, of course, in some of the larger institutions, but the smaller ones find themselves in a distressing situation, in which their income, hitherto none too generous, has now shrunk to the point where their teaching staff will surely suffer. This again will react upon the quality of graduate students here and elsewhere, as all of us draw to a considerable extent from the graduates of smaller institutions.

I am happy to say that the work on the Mayo Foundation is going on in a generally satisfactory condition. I have had just one misgiving in regard to it, and that is that the amount of service work now required in Rochester is so large and so exacting that it leaves relatively too small an amount of time for study and research. I understand that plans are under way to remedy this condition. I hope in the early fall to be able to visit Rochester for some days in order to follow at first hand some of the typical work done by the students. The interchange of students has continued, but it will be a happy condition if this might be made more general.

I think the statistics that I submitted require a little comment. It will be a happy augury of increasing interest in advanced work, on our own campus when a larger percentage of the registration is represented by Bachelor's degrees from the University of Minnesota. I think I am safe in saying that our proportion of local graduates registered in the Graduate School is rather lower than in the average graduate school whose reports are published and available.

REGISTRATION 1914-19

YEAR	GRADUATE STUDY	MASTER	DOCTOR	MEN	WOMEN	TOTALS
1914	10	123	42	118	57	175
1915	22	159	56	160	77	237
1916	31	206	139	270	106	376
1917	29	328	107	347	117	464
1918	21	200	155	248	128	376
1919	19	219	134	218	154	372

GRADUATE STUDENTS DOING FULL OR PART TIME WORK

	FULL TIME	PART TIME	TOTAL
Men	108	110	218
Women	64	90	154
Total	172	200	372

DISTRIBUTION ACCORDING TO YEARS OF GRADUATE WORK

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR AND OVER
236	101	30	5

MEMBERS OF STAFF REGISTERED IN GRADUATE SCHOOL

	MEN	WOMEN	TOTAL
Instructors doing graduate work*	29	17	46
Graduate students serving as Assistants. . .	22	11	33
Graduate students holding Scholarships. . .	7	10	17
Teaching Fellows	17	11	28
Fellows (Mayo Foundation)	42	8	50

*One Professor and two Associate Professors.

GRADUATE STUDENTS MAJORING IN THE VARIOUS DEPARTMENTS

DEPARTMENT	MEN	WOMEN	TOTAL
Agricultural Biochemistry	4	3	7
Agricultural Economics	5	..	5
Agricultural Education	2	..	2
Agronomy and Farm Management	6	..	6
Anatomy	8	2	10
Animal Biology	3	2	5
Astronomy .....	..	1	1
Bacteriologic and Pathology	3	8	11
Botany	7	5	12
Chemistry	20	5	25
Comparative Philology	1	1	2
Dairy and Animal Husbandry	1	..	1
Dental Surgery	1	..	1
Economics	10	..	10
Economic Zoology	1	..	1
Education	36	18	54
Electrical Engineering	3	..	3
English	6	26	32
Entomology	3	1	4
Geology and Mineralogy	4	..	4
German	1	4	5
History	2	13	15
Home Economics .....	..	5	5
Horticulture	5	..	5
Latin	1	7	8
Mathematics	2	2	4
Mechanical Engineering	1	..	1
Medicine	5	1	6
Metallography	4	..	4
Neurology	1	..	1
Obstetrics	2	..	2

DEPARTMENT	MEN	WOMEN	TOTAL
Ophthalmology and Oto-Laryngology.....	5	..	5
Orthopedics	1	..	1
Pediatrics	3	..	3
Philosophy	3	1	4
Physics	3	3	6
Physiology and Physiological Chemistry..	..	2	2
Plant Pathology	4	3	7
Political Science	3	..	3
Psychology	3	4	7
Rhetoric .....	..	3	3
Romance	4	14	18
Scandinavian	3	..	3
Sociology	2	17	19
Social Service .....	..	3	3
Soils	1	..	1
Structural Engineering	1	..	1
Surgery	34	..	34
Total	218	154	372

EDUCATIONAL INSTITUTIONS REPRESENTED IN GRADUATE SCHOOL*

1918-19

Allahabad (India)	1	Ludwig	1
Alma	1	Luther College	1
Augsburg	1	McGill	1
Antwerp	1	Macalester	5
Augustana	1	Maine	1
Bates	1	Manitoba	1
Beloit	3	Marquette	1
Boston	1	Mexico	1
Brown	1	Michigan	10
Bryn Mawr	1	Minnesota	129
Carleton	5	Mississippi	1
Catholic University	2	Missouri	8
Chicago	10	Monmouth	1
(including 3 Rush)		Nebraska	4
Christiania	1	Nebraska Wesleyan	1
Cincinnati	1	North Dakota	1
Clemson	1	New Hampshire	1
Colgate	1	Northwestern	1
Columbia	8	Oberlin	4
Concordia	2	Ohio	3
Cornell	6	Ohio Wesleyan	2
Dakota Wesleyan	3	Pennsylvania	5
Dartmouth	1	Princeton	2
Dublin, Ireland	1	Puget Sound	1
Earlham	1	Purdue	1
Elmira	1	Radcliffe	2
Emery and Henry	1	Rice Institute	1
Fargo	3	Rome	1
George Washington	1	St. Catherine	9
Georgia	1	St. Mary's	1
Greenville	1	St. Louis	1
Grinnell	1	St. Olaf	7
Gustavus Adolphus	2	St. Teresa	2
Hamline	12	St. Thomas	2
Harvard	3	Simpson	2
Havana	1	Smith	2
Hope	1	Southern California	2
Huron	2	South Dakota	2
Idaho	1	Syracuse	2
Illinois	5	Tennessee	2
Illinois Wesleyan	1	Trinity	2
Indiana	1	Upper Iowa University	2
Iowa	6	Ursinus	1
Kansas	1	Utah	2
Knox	2	Vassar	1
Leland Stanford	1	Virginia	3
Lewis Institute	1	Washington State University	6
Lille (France)	1	Washington University (St. Louis)	1
Louisiana	1	Wesleyan University	1

Wellesley	4	Washburn	2
Western	1		
West Virginia	1	Total colleges represented.....	106
William Jewell	1	Minnesota registration	129
Wisconsin	9	Other colleges	243
Wofford	1		
Worcester	2	Total registration	372
Yale	1		

* In case the rating of the college is low, the student's entry blank shows extra undergraduate work here or elsewhere or tested qualifications in his major work.

MASTERS' DEGREES CONFERRED IN 1919 BY DEPARTMENTS

	MINNESOTA GRADUATES		OTHER COLLEGES		TOTALS		
	Men	Women	Men	Women	Men	Women	Total
Agronomy .....	..	..	1	..	1	..	1
Anatomy	1	1	1	..	2	1	3
Bacteriology .....	..	..	1	..	1	..	1
Education	2	1	3	..	5	1	6
Educational Psychology..	..	1	..	1	..	2	2
English .....	..	1	1	..	1	1	2
Experimental Surgery ..	..	..	1	..	1	..	1
Geology .....	..	..	1	..	1	..	1
German .....	..	..	1	1	1	1	2
History .....	..	2	..	..	..	2	2
Horticulture .....	..	..	1	..	1	..	1
Latin .....	..	1	..	..	..	1	1
Mechanical Engineering..	1	..	..	..	1	..	1
Metallography .....	..	..	1	..	1	..	1
Neurology .....	..	..	1	..	1	..	1
Pediatrics	1	..	..	..	1	..	1
Physics .....	..	1	..	..	..	1	1
Physiology .....	..	..	..	1	..	1	1
Plant Pathology .....	..	..	..	1	..	1	1
Psychology .....	..	..	1	2	1	2	3
Romance .....	..	3	..	..	..	3	3
Sociology .....	..	..	..	1	..	1	1
Surgery .....	..	..	6	..	6	..	6
Totals	5	11	20	7	25	18	43

DOCTORS OF PHILOSOPHY CONFERRED IN 1919

- George Delwin Allen, B.A. '07, Oberlin, M.S. '10, Chicago. Major, Animal Biology; Minor, Physiology. Thesis: *Quantitative Studies on the Rate of Respiratory Metabolism in Planaria.*
- Clarence Carleton Bausman, B.A. '16, M.S. '17, Minnesota. Major, Botany; Minor, Plant Pathology. Thesis: *Studies on the Morphology of Some Australian Algae.*
- Lois Clark, B.A. '07, M.A. '10, Washington. Major, Botany; Minor, Micology. Thesis: *The Embryology of Podolphyllum.*
- George Elmer Holm, B.S. '14, Carleton, M.S. '15, Minnesota. Major, Biochemistry; Minor, Organic Chemistry. Thesis: *The Hydrolysis of Proteins in the Presence of Aldehydes.*
- John Ludwig August Huchthausen, R.M. '92, Concordia, M.A. '16, Minnesota. Major, German; Minor, Comparative Philology. Thesis: *Ideas of Free Thinking Protestant Pastors in Modern German Novels.*

- Arthur Monrad Johnson, B.A. '04, Minnesota. Major, Botany; Minor, Entomology. Thesis: *A Revision of the Section Boraphila Eugler of the Genus Saxifraga.*
- Willis Ernest Johnson, B.A. '18, M.A. '18, Minnesota. Major, Education; Minor, Sociology. Thesis: *The Formation of Standards of Educational Achievement for a State.*
- Riverda Harding Jordan, B.A. '93, M.A. '13, Yale. Major, Education; Minor, Educational Psychology. Thesis: *The Relationship between Nationality and School Progress.*
- Frances Erma Lowell, B.A. '15, M.A. '17, Minnesota. Major, Psychology; Minor, Education. Thesis: *A Group Intelligence Scale for Primary Grades.*
- Vinnie Arah Pease, B.S. '07, Puget Sound, M.S. '15, Washington. Major, Botany; Minor, Organic and Phyto-Chemistry. Thesis: *The Taxonomy and Morphology of the Ligulate Species of the Genus Desmarestia.*
- Adolph Ringoen, B.A. '09, M.A. '13, Iowa. Major, Animal Biology; Minor, Anatomy. Thesis: *The Origin of the Eosinophil Leucocytes of Mammals.*
- Irene Sandiford, B.A. '13, Radcliffe. Major, Medicine; Minor, Physiology. Thesis: *Clinical Metabolism.*
- Wilson Porter Shortridge, B.A. '07, Indiana, M.A. '11, Wisconsin. Major, History; Minor, Economics. Thesis: *The Life of Henry Hastings Sibley.*

Doctor of Philosophy in Surgery

- John Luis Butsch, B.S. '06, M.D. '11, M.S. '15, Johns Hopkins. Major, Surgery; Minor, Medicine. Thesis: *Ulcers of the Gastro-Intestinal Tract with Special Reference to Gastro-Jejunal Ulcers.*

Doctor of Philosophy in Obstetrics and Gynecology

- Lee Willis Barry, M.D. '11, Michigan. Major, Obstetrics and Gynecology; Minor, Anatomy. Thesis: *The Effects of Inanition in the Pregnant Albino Rat with Special Reference to the Changes in the Relative Weights of the Various Parts, Systems, and Organs of the Offspring.*

HOLDERS OF ENDOWED FELLOWSHIPS, 1919-20

Shevlin Fellowships

- Science, Literature, and the Arts: Theodore Christian Blegen, B.A. '12, M.A. '15, Minnesota.
- Agriculture: Marshall Hertig, B.S. '16, Minnesota.
- Medicine: Dr. T. Kudo, M.D. '13, Kioto Imperial University, Medical College.
- Chemistry: Elden Bennett Hartshorn, B.S. '12, Dartmouth.

The Albert Howard Scholarship

- James Christian Lindberg, M.A. '05, Nebraska.

Class of 1890 Fellowship

Edith Harriet Jones, B.A. '19, Minnesota.

PUBLICATIONS

It is a source of gratification to record our steady activity in the field of the Research Publications. Since the last report the following have appeared:

Studies in the Social Sciences

- Rupert C. Lodge, *The Meaning and Function of Simple Modes in the Philosophy of John Locke*. 86 pages.
 Florence R. Curtis, *The Libraries of the American State and National Institutions for Defectives, Dependents, and Delinquents*. 56 pages.

Studies in Language and Literature

- Marie C. Lyle, *The Original Identity of the York and Towneley Cycles*. 113 pages.

Studies in the Biological Sciences

- Hirschfelder and Moore, *An Investigation of the Louse Problem*. 86 pages.

Current Problems

- Margaret Kent Beard, *The Relation between Dependency and Retardation*. 17 pages.
 Thomas S. Roberts, *A Review of the Ornithology of Minnesota*. 101 pages.

In press are the following:

- Notestein and Relf, *Editors, Commons Debates for 1629*.
 Louis A. Boettiger, *Armenian Legends and Festivals*.
 Martin B. Ruud, *An Essay toward a History of Shakespeare in Denmark*.
 Elmer E. Stoll, *Hamlet: An Historical and Comparative Study*.

APPROPRIATIONS FOR RESEARCH

Allotments from the Research Funds of the Graduate School have been made by the Executive Committee during the past year to the following persons for the purposes stated with results as here summarized:

- C. M. Jackson, \$100 for research assistant on experiments on the effect of inanition on the suprarenal gland. Work completed and published in the *American Journal of Anatomy*. Studies to be published in book form.
 H. M. Turner, \$250 for equipment and supplies on radio research. Absent in war service.
 F. W. Springer, \$300 for research assistant and supplies on the ignition system. Comparative tests on developing methods have been made. Oscillographs, notes, and curves constituting complete date of work in hands of publisher.
 Hal Downey, \$250 for research assistant on development of lymphatics. Unable to obtain a technician until June and July; work to be continued.

- W. H. Emmons, \$400 for research assistant on ore deposits including bismuth concentration and accumulation of petroleum deposits. Work in progress; to be continued.
- Swann, Erikson, \$500 for research assistant in physical investigations. Experiments carried on; one paper being published in the *Monthly Weather Review*, several other pieces of work in progress; work to be continued.
- S. L. Hoyt, \$500 for research assistant for investigations in high speed steel. Investigations made and valuable data procured.
- J. I. Parcel, \$100 for research assistant on railroad bridge stresses. The data of the Kenova test is prepared and results to be published in technical journal; later to appear in bulletin form.
- R. E. Scammon, \$200 for research assistant and supplies on anatomy of the fetus and newborn. Three papers have been published and another one presented at the meeting of the Association of American Anatomists and is being published. Work to be continued.
- John R. Allen, \$500 for equipment on research on heating systems; experiments conducted on the transmission of heat through plate and common glass, also apparatus to determine the loss of heat by radiation from steam radiators.
- W. P. Larson, \$500 for supplies in bacteriological research. Investigations made and six papers published in medical journals during the year; another in press and other investigations in progress. Work to be continued.
- W. F. Holman, \$500 for research assistant on reinforced concrete tests. Owing to war conditions fund reverted.
- White, Notestein, Davis, \$600 for research assistant in history. Material relating to the war gathered, also thirteenth-century data; to be published. Work to be continued.
- C. Searles, \$300 for supplies in French literature of the seventeenth century. Many rare books, texts, and specimens acquired. Work to be continued.
- T. B. Hartzell, \$200 for laboratory supplies for research in dental infections. Work in progress and to be continued.
- Swift, Coffman, \$300 for research assistant and supplies on school administration. Complete data collected for eleven states and partial data for the remaining states. Progress satisfactory and work to be continued.
- K. V. Lashley, \$275 for apparatus and supplies for investigation on brain experiments in the study of the relation of cerebral organization to habit-formation in the rat. Satisfactory progress and work to be continued.
- Josephine Tilden, \$150 for research assistant on investigation on South Pacific algae. Marine algae from Australia, New Zealand, Hawaiian, and Society Islands specimens mounted and sectioned.

M. J. Van Wagenen, \$490 for supplies and printing in research in connection with the Bureau of Coöperative Research. A bulletin has been printed during the year. Work to be continued.

J. P. Sedgwick, \$500 for assistants and supplies in investigation of breast feeding in Twin Cities. Work in progress and to be continued.

Respectfully submitted,

Guy S. Ford, *Dean*

THE DEAN OF WOMEN

To the President of the University:

SIR: The Dean of Women herewith submits the following report for the year 1918-19.

Registration of women.—During this year there were registered in the University 2,886 women. The academic distribution is as follows: follows:

Science, Literature, and the Arts.....	1,383
Engineering and Architecture.....	9
Law	5
Medicine	14
Nurses	80
Dentistry	3
Pharmacy	29
Chemistry	9
Education	246
Graduate	83
Agriculture and Home Economics.....	366
Total, regular session.....	2,227
During the Summer Session, 1918.....	659
Total for the year.....	2,886

The distribution as to residence (figures based on census cards supplied by Registrar's office) during the regular session of 1918-19 is as follows:

At home	1,106
With friends or relatives.....	106
In private families.....	87
In approved houses.....	240
In sorority houses.....	115
In dormitories	111
In coöperative houses.....	127
In home management houses.....	25
In hospitals	6
Working for room and board.....	21
In apartments (teachers, etc., by special arrangement).....	34
Total	1,978

Administration.—1. Delinquents. During the first quarter 69 women were interviewed in regard to unsatisfactory scholarship in classes belonging to the College of Science, Literature, and the Arts. It was impossible to apply any consistent policy since conditions were so unusual. Most of the delinquencies were attributed to the influenza situation, and reports based on statements of illness were made to the Administrative Board. Beginning with the second quarter the work of interviewing such delinquents passed into the hands of the Administrative Board of the College of Science, Literature, and the Arts.

2. Absentees. During the first quarter no absences were referred to this office, as Registrar West was especially appointed to act as University Recorder during the existence of the S.A.T.C. During the second

quarter 553 absentees were interviewed, and during the third quarter 429. The most frequent causes of absences reported were illness (during the influenza epidemic) and illness or deaths of members of the family. Some absences were due to unusually poor street car service, and very many tardinesses were attributed to the same cause.

3. Chaperones. Two chaperones, selected by the students, were approved for each of 80 social functions. When a chaperone has been approved in this office a letter is sent to her containing a copy of *A Note to Chaperones*, and requesting her to notify this office by telephone if she is not able to serve. On the day before a party or on the very day of a party the selected chaperones are interviewed over the telephone to ensure their attendance. It is not unusual to learn as late as five o'clock of the day of the party that chaperones can not act, and it is then necessary for this office to secure the presence of two other chaperones for that evening. The value of a chaperone's service varies according to the standards of the individual chaperone and according to the efficiency of the student committee which is responsible for the entertainment.

4. Housing. Sanford Hall was filled to capacity during the past year, and the Sigma Alpha Epsilon house, accommodating 21 young women, was conducted as an annex. All these young women obtained their meals at Sanford, thus utilizing some of the extra dining-room space. There is such a prospective deficiency of desirable rooms for next year that Miss Helen Jackson, the Director of Sanford, has permitted several young women who had engaged single rooms at Sanford to admit congenial friends as roommates. This policy, which may ultimately abolish the single rooms at Sanford, would be deplorable were it not that part of the extra dining-room space at Sanford can thus be utilized and that the number of other available rooms had been reduced. The reversion to young men of the Sanford annex (Sigma Alpha Epsilon house), of the three fraternity houses used during the past year as coöperative houses for young women (Delta Upsilon, Sigma Nu, and Phi Gamma Delta), and of two fraternity houses used during the past year as private boarding-houses for young women (Sigma Phi Epsilon and Acacia), will deprive us of accommodations for 96 women students; the prospective removal of Winchell Cottage will deprive us of places for 15 young women; the new eight-hour law for nurses compels an enlargement of the group of student nurses, and consequent securing of sleeping quarters for them; many of the people who in the past have taken roomers or boarders have abandoned the venture on account of the high cost of fuel and foods and the difficulty of obtaining domestic service; the number of houses in southeast Minneapolis available for roomers has been reduced because of their appropriation by returning and new-coming Faculty families and other families.

In addition to the four University coöperative cottages (Folwell, Loring, Northrop, and Winchell), housing this year 74 young women, three fraternity houses (Delta Upsilon, Sigma Nu, and Phi Gamma Delta) were operated as coöperative houses for women, housing 53 young women.

In the 13 sorority houses 115 young women have been living under chaperonage which, for the most part, has been very trustworthy. The same variation exists as in the approved houses in regard to the observance of University regulations. The following rules have been adopted for rushing in the fall of 1919: under no condition will rushing last more than one week after the beginning of classes; invitations are to reach Dr. Sigerfoos by Wednesday night at 6:00 p.m. (assuming that classes begin on a Wednesday); rushing is to be restricted to the campus and sorority houses; after the expiration of the rushing period open bidding will be allowed.

With the coöperation of the Director of the Housing Bureau, Mrs. Jessie S. Ladd, a great deal of personal attention has been given to the locating of 240 young women in approved residences. There has been frequent inspection of the houses and a great effort has been made to keep in touch with social conditions. The response to University regulations varies according to the personality of the householder and the personnel of the group of students, but on the whole conditions have been fairly satisfactory.

The two home management houses have been successfully operated under the supervision of the Home Economics Division. The term of residence has been extended to a full quarter, instead of six weeks as formerly; and the success of this method of instruction has been demonstrated.

The 1,106 women residing in their own homes are presumably in the environment best suited to them. Many other young women, however, have needed to make rather special arrangements. These have been interviewed individually and each case has been carefully supervised. These special cases are as follows: 106 girls who are living with friends or relatives not their parents; 6 who are residents of hospitals; 21 who are working for room and board; 34 who are living in apartments (teachers and other women of mature age).

The statistics of the Summer School for 1919 properly belong with next year's report. Let me say here merely that we departed this year from the previous custom of sending printed lists of rooms to Summer School applicants and handled in this office, either by correspondence or by personal interview of individuals, applications for accommodations for Summer School. This plan has worked so easily and so successfully that it would seem a pity to revert to the old system.

5. Census slips. Beginning with January, 1919, the Dean of Women succeeded in having printed at the end of the registration blank for each student a census slip which replaced the old census card (which was intended for the Dean of Women, but which was often neglected). By this method of having the census slip the final section of the registration sheet it was possible for the Dean of Student Affairs to obtain a slip for each man registering, and for the Dean of Women to obtain a slip for each woman registering. The slips coming to this office were used as a permanent file and from them copies were made for the Women's Self-Government Association, for the Y.W.C.A., and for cross filing in this office.

Permit me to emphasize the importance of this plan of the census slip attached to the registration sheet, since it is only through this means that it is possible to obtain correct data as to the women registered. Also, upon information thus obtained depends the important work of the Women's Self-Government Association, which should be initiated immediately on the opening of the year, and the effective work of the Y.W.C.A. The innovation has not yet become sufficiently established to make it secure, and the plan may need to be modified by the Dean of Student Affairs. But on some such device for obtaining immediate and accurate data depends in large measure the efficiency of this office.

6. Auxiliary organizations. The Women's Self-Government Association has been an invaluable aid throughout the entire year. The reorganization which was theoretically completed last year resulted this year in an actual working force in all departments of the University. The activities of the Women's Self-Government Association had heretofore been largely representative of the College of Science, Literature, and the Arts, to the actual tho unintentional exclusion of women in Pharmacy, Medicine, Architecture, Law, Education, Home Economics, and Nursing. The result, was that the various groups just mentioned, failing in their appeal for representation on the Women's Self-Government Association Board, had followed the example of the Home Economics group and had organized a separate association for Nurses, another one for Education, and had begun to organize another association among the professional women. There was danger that these various organizations would become centrifugal forces, and the reorganization of the Women's Self-Government Association was undertaken to prevent this tendency. The actual results of the reorganization are excellent. It is possible now through the central Board to reach every group of women on the campus and to gain their interest and help in campus movements. A certain amount of uniformity in campus standards has been initiated and it is hoped that this uniformity will be increased in the future and will make itself felt in all social matters.

The House Council, tho a section of the Women's Self-Government Association, operates independently, having for its special care the social conditions in all of the houses where young women are lodging. It is difficult to obtain uniformity because over one thousand of the young women live in their own homes (where they have a great deal of freedom) and because the distribution of women in dissimilar houses (dormitories, coöperative cottages, sorority houses, approved houses, etc.) permits very different living conditions. In the monthly meetings of this Council, however, questions of house government and social regulations are discussed and a perceptible advance in group coöperation has been made.

The Advisory House Council, an organization to which householders of our approved rooming-houses are eligible, has been one of the most valuable helps in creating among these women a standard as to their care of the University girls. At the regular meetings various questions of University policy in regard to the housing conditions have been discussed.

As a climax to the year's meetings a play was given in the Little Theater before a large audience. The net proceeds, over \$70, were invested in a silver service which was presented by the Advisory House Council to Shevlin Hall for use at all social functions held in that building.

Social and administrative entertainments.—The following entertainments were given by the Dean of Women for semi-administrative purposes: reception in honor of the two new Y.W.C.A. secretaries (to which all the women of all Faculties were invited); second annual installation dinner given to the officers of the Women's Self-Government Association; dinner meeting to initiate the work of the House Council; tea for the Advisory House Council; tea in honor of Miss Helen M. Bennett (to which were invited all the women employees on the campus in order that they might come in touch with Miss Bennett's vocational ideas).

Social and educational events.—1. Luncheons. Six simple luncheons were arranged by the Dean of Women, at which prominent speakers appeared. These luncheons were intentionally kept free of any alliance with campus organizations in order that the individual woman student who was not prominent in any organization might have an opportunity to come. The price was limited to twenty-five cents, so that young women of limited means might afford to take advantage of these opportunities.

2. Al fresco entertainment. The second Commencement al fresco entertainment was given before about five hundred spectators. A prominent feature was the pageant and masque, *Hygeia*, which was produced by the women from the School for Nurses, under the direction of Miss M. L. Vannier, Assistant Superintendent of the School for Nurses, and Mrs. Dorothy Kurtzman, Field Director of Public Health Nursing. Miss Valeria Ladd repeated for this occasion the masque which she had already presented on the occasion of Field Day. The expenses for this entertainment were borne by the University.

Social events.—During the war the Dean of Women confined her social entertainments to such as seemed necessary to forward the work of her office, and they were always in strict conformity with war-time simplicity. After the signing of the armistice, however, it seemed best to revert to something like a pre-war basis. Several teas were given to student organizations, and dinners were given in honor of the basket-ball team and various other student groups.

Financial aid to students.—1. Loan funds. The Loan Fund for Women Students has been increased by the addition of \$675 from the Faculty Women's Club; and an Emergency Fund for Women Students, amounting to \$300, has been created by the Faculty Women's Club, to be used by the Dean of Women for the assistance of needy women students. From the Loan Fund for Women Students and from the Home Economics Self-Government Association Loan Fund 23 young women have received financial help since the opening of school in the fall, the loans totalling \$895.

The documents pertaining to these loan funds have been carefully examined and transferred from the Business Office to this office, with the exception of two Great Britain and Ireland bonds for \$1,000 each, belonging to the Loan Fund for Women Students, which are deposited in

the safety deposit vault, under the direct charge of Mr. Luth Jaeger. A review has been made of all transactions connected with this fund from its inauguration, a detailed historical report has been placed in the hands of Mrs. Carlyle Scott, president of the Faculty Women's Club, and a copy of this report has been filed in this office.

2. Partridge Fund. By the generosity of Regent George H. Partridge, Mrs. Jessie S. Ladd has at her disposal the sum of \$500 for the assistance of needy students.

3. French Visiting Scholars. The needs of the two women French Visiting Scholars have been met by Miss Ruth S. Phelps' timely aid in the matter of providing homes, by the gift of \$170, arranged by Mrs. Jessie S. Ladd, from the Partridge fund, and by the contribution of about \$290 for board and summer expenses provided from a national fund of the Pi Beta Phi sorority, which was placed in the charge of the Dean of Women (\$100 of this was expended on two French Visiting Scholars from Hamline, who transferred to this institution for the Summer Session and another \$100 was given to two French Visiting Scholars enrolled at Macalester to enable them to go to summer camps).

Scholarships.—The scholarships for women which are handled from this office have been increased by the addition of three new ones. The list follows: the Nina Morais Cohen Scholarship of \$100, given by the Council of Jewish Women; the Faculty Women's Club Scholarship of \$100, given by the Student Section; the Minneapolis College Women's Club Scholarship of \$150; the four St. Paul College Club Scholarships of \$150 each; the Woman's Club of Minneapolis Scholarship of \$100, given by the Arts and Letters Section; the Women's' Self-Government Association Scholarship of \$100.

War work.—1. Through the reorganization of the Women's Self-Government Association it was possible to centralize in one of its sections, which is thus under the supervision of this office, almost all of the war activities undertaken by the women students. The principal activities were knitting, thrift stamp sales, War Chest drive, sale of French orphan Christmas cards, adopting orphans, assisting at S.A.T.C. dances in the Armory, assisting at Hostess House, service in Americanization projects.

2. This office was the bureau of information for inquiries coming from the Intercollegiate Committee on Women's War Work Abroad, and many letters were written to it in answer to inquiries in regard to alumnae.

3. The matter of the pre-nursing course was also the subject of much correspondence.

Gifts.—In addition to the gift of the silver service to Shevlin Hall by the Advisory House Council, the Minnesota Alumnae Club purchased for Shevlin another silver service which was used for the first time at the Commencement tea given in this building. A list of the pieces of both sets follows: one urn, two teapots, two sugar bowls, two cream pitchers, one lemon fork, two trays.

Physical Education for Women.—The work of this department is reported in detail on pages 217 to 219.

In conclusion the Dean of Women may be permitted to reiterate three points:

1. The imperative need for adequate housing facilities for women students.
2. The necessity of perfecting a method to furnish to this office immediate and accurate information as to the registration of women students.
3. The advisability of developing more adequate student supervision of social affairs in conjunction with the supervision exercised by this office.

Respectfully submitted,

GERTRUDE H. BEGGS, *Dean*

REPORT OF THE DEAN OF STUDENT AFFAIRS

To the President of the University:

SIR: I beg to submit herewith my report as Dean of Student Affairs for the school year 1918-19.

The first quarter of the past year was given over to the Students' Army Training Corps work. During this time the ordinary student activities were abandoned, with the exception of the *Minnesota Daily* and the *Gopher*. During the early part of the quarter many men were relieved from all scholastic work and assigned to military duties, many were released from individual classes, etc., without there being any check or control by the college authorities.

By the middle or last of October, every change in scholastic program was passed upon and records kept as usual. From then on 380 men presented definite petitions for changes. These were passed upon after personal interviews. These petitions covered the following general grounds: requests to be relieved from all scholastic work and assigned to full-time military duties, largely from men who had no interest in the University work; requests to be allowed to drop one or more subjects, because of inability to carry the work due to lack of preparation, lack of time, and loss of time due to sickness. After the armistice, many who had been assigned to full-time military duty requested the privilege of reassignment to study duty. In all such cases, when the absence from classes had not been too prolonged and instructors approved, the request was granted, with a partial program of studies.

Just before demobilization, a survey was made of the Corps to determine as nearly as possible, (1) what number of the men would normally have come to college, and who would return, and (2) what number would not return. These two divisions were further divided, classifying them by colleges, as they expressed a preference for one or another line of work. Of those not returning, a division was made showing those who did not care to return and those who could not for financial or other reasons. This survey took into account only men who would in normal times classify as freshmen. The results of this survey are on file in your office.

During the first quarter there was instituted a systematic check of absences, required by army regulations. This was finally taken over and carried out by the college authorities, under the efficient management of Mr. West. This problem was in my judgment handled more efficiently and with better results than in any of the large institutions of the district.

The second quarter represented the beginning of a normal year. At this time the University began its return to normal conditions with a resumption of the ordinary student life and conditions.

Student councils.—On attempting to reorganize the various councils, it was found that in most cases new elections would have to be held in

order to obtain working memberships. The reorganization in most cases took the better part of the quarter.

The All-University Student Council had to hold an election before beginning its work. After it was organized, it proved very helpful in the adjustment of a number of problems submitted to it. At the close of the year it had a definite progressive program in process of development, which it handed on to the new council elected late this spring.

Of the college councils, the Engineering Student Council has, in my judgment, been most active and progressive. The College of Dentistry Council, working for the first time this past year, has been very efficient. The College of Pharmacy completed their organization of a council late in the year.

Student publications.—The *Minnesota Daily* and the *Gopher* were the only publications considered this year, as was the case the previous year. At the beginning of the year, with practically all the male students in the Students' Army Training Corps and subject to withdrawal from the University at any time, the wisdom of attempting to publish the *Daily* or the *Gopher* was seriously questioned. The young women of the University were anxious to take over the responsibility for the *Daily* and, after submitting a budget and a subscription list and advertising which insured ability to meet obligations, were permitted to proceed with the publication. The existence of the *Daily* this year is due solely to the women of the University. The *Gopher*, before proceeding with its formal plans, also submitted a subscription list which justified proceeding on the basis of the budget submitted. Late in the third quarter requests for reviving the *Minnehaha* and the *Minnesota Magazine* were approved. One issue of the *Minnehaha* was brought out Commencement week. In the case of the *Minnesota Magazine*, the group of students were referred to the Department of English for advice and guidance in the reorganization. Prospects for a more substantial and efficient magazine for next year are very bright. For a while there was under discussion the advisability of combining the *Minnehaha* and *Minnesota Magazine*. After a joint meeting of interested parties and a full discussion of the aims of each, it seemed unwise and of no advantage to undertake such a consolidation.

Finances.—As stated above, the *Daily* and the *Gopher* both submitted budgets with available funds in sight to provide for these budgets. The *Daily* was planned and budgeted on the basis of a three-page paper; later, over-enthusiasm led to the publication of a five-page paper, which the income did not warrant. After conferences and explanations, the paper was put back on the three-page basis. The staff voluntarily relinquished salaries. The paper finished the year with practically all subscriptions paid and no indebtedness. It was necessary to draw on the reserve to the extent of \$400. The *Gopher* finished the year within its budget. There are some minor accounts, both debit and credit, outstanding yet, but after these are cleared up there will be a slight balance.

The two dramatic clubs have had a successful year financially. The Masquers has been laboring under a load of indebtedness for the last

two or three years. To-day they are clear of debt with a balance to their credit. Miscellaneous organizations, such as the Junior Ball Association and the Sophomore Musical Comedy, have paid all bills. The senior class play had to be assisted to some extent by funds taken from the 1919 *Gopher* balance. Of bills sent in by business houses against University organizations, those of this year have been settled satisfactorily, others not settled, are almost entirely fraternity accounts from the year before last when nearly all of the chapters were practically discontinued by their men entering the service.

General social activities.—There has been a rapid resumption of social activities since the opening of the second quarter. The Senior Promenade, the Junior Ball, the Sophomore Musical Comedy, representing all-University affairs, were again offered this year after a discontinuance of two years. All fraternities and other groups resumed social activities in the form of parties and dances. While the number of such parties given by any one group was not excessive, in the aggregate it represented, to the person not familiar with conditions, an excessive social life. One feature of the social life was the growing tendency of the students and Faculties of the individual colleges to get together for a social evening, promoting acquaintance and good fellowship. Such meetings were held in nearly every college at some time during the year. It is to be hoped that this tendency toward a truly democratic acquaintance and friendship will continue to grow. The past policy of restricting social affairs to Friday and Saturday nights was continued, the chief exceptions were in the case of the different college "get-togethers."

Eligibility regulations were enforced during the second and third quarters. Students with a condition or failure against them on the Registrar's books could not participate in student activities which made an appreciable demand on their time. In this connection it is interesting to note that in the case of the Sophomore Musical Comedy, an elaborate production calling for numerous intensive rehearsals, twenty-one and forty-two hundredths per cent (21.42%) of the number participating closed that quarter with at least one condition or failure against them.

Fraternities.—During the first quarter there was no fraternity life; practically all of the fraternity houses were either closed or rented for the year. In the second quarter the groups reorganized, in some cases reopening their houses, in others meeting in members' rooms, and in some cases renting the whole or a part of some other house. The normal regulations of the Interfraternity Council were in force. On the whole there has been a good and satisfactory spirit prevailing. It is impossible at this time to report on the scholastic standing of fraternities. The data is being gathered and will be ready early in the fall.

Sororities were not seriously interfered with during the first quarter. The year has been practically a normal one for them. At one time during the year considerable unrest developed. This was due largely to friction arising from the application of their very detailed rushing regulations. This I hope has been satisfactorily solved for the future by a remodeling

of their regulations, doing away with the objectionable features, and also making their rushing season a short one.

Discipline.—There have been four cases this year of suspension through this office. The students suspended are not to be readmitted to the University without the approval of the President or the Dean of Student Affairs. The number of students withdrawn due to unsatisfactory scholastic work and excessive absences, has been less than in normal years. There exists the widest possible variation in the manner and methods of handling scholastic delinquency. The Colleges of Science, Literature, and the Arts, Agriculture, Forestry, and Home Economics, and Education have practically the same regulations, which are enforced with a reasonable degree of uniformity. Chemistry and Dentistry have been putting into effect somewhat similar regulations. Their enforcement in these colleges has at least been comparable with the other three named. The Adviser and Mentor systems of the Colleges of Science, Literature, and the Arts, and Engineering have, considering that this has been their first year of trial, met with reasonable success.

Absences.—Toward the middle of the second quarter there was authorized a plan for the gathering and handling of absence reports from all colleges. This was not in full operation until the third quarter. To one familiar with these reports and the information gained from them, there can be no question as to the wisdom of such a step. Many cases of illness were discovered which ordinarily would have escaped notice, many cases of students failing to attend individual classes at all were found, and some cases of students ceasing attendance in any classes, tho ostensibly attending the University, were found. In the past, these cases for the most part would not have been uncovered, as many instructors had not made a practice of noting absences. This was also true of practically entire colleges in some cases. In the past, where instructors had kept records of absences, the widest variation in the handling of them existed, ranging from undue severity to the other extreme of no notice being taken of them.

Following is a summary of the work with students absent during the last quarter. This shows only those called in once or more from each college:

	FRESHMAN AND SOPHOMORE	JUNIOR AND SENIOR
Science, Literature, and the Arts.....	567	92
Chemistry	34	6
Dentistry	35	1
Education .....	..	4
Engineering	116	4
Law	2	2
Medicine	2	1
Mines	22	..
Pharmacy .....	..	4
Agriculture	58	15

The following has been the practice of this office in handling absences: in the case of freshmen and sophomores a total of five absences or three consecutive absences meant the calling in of the student and a

request for explanation. This was in most cases sufficient to stop the absences before enough had been accumulated to work serious harm. In some serious cases the student has been requested to withdraw. In the case of juniors and seniors a somewhat greater latitude was allowed. In view of all of the conditions, the coöperation of the members of the Faculties was very satisfactory. A detailed report on absences by colleges is on file in your office.

Summer Session.—This office has coöperated with the Director of the Summer Session in applying and carrying out the general regulations of the regular school year during the Summer Session. Changes of registration, late registration, cancellations, etc., have all been by petition and have passed through this office. Regular reports of absences have been made and students called as during the regular year. Scholastic reports have been called for and students warned. A detailed report will be made to the Director at the close of the session.

Respectfully submitted,

EDWARD E. NICHOLSON, *Dean*

THE GENERAL EXTENSION DIVISION

To the President of the University:

SIR: I herewith submit my report as Director of the General Extension Division for the year 1918-19.

This report is made somewhat in detail, and numerous comparisons are made with previous years and with corresponding semesters of other years. However, it will be noted that there are several summaries which, avoiding detail, bring the essential facts within small compass.

During about four months of the year under review, the United States was at war, and during the remainder of the year, while the terms of the armistice were being carried out and the Peace Commission was sitting, many war conditions remained unchanged. The epidemic of influenza made serious inroads upon the accustomed activities of this Division. The organization of our night classes was interrupted, and the total enrollment was greatly lowered. The Training Course for Volunteers in Social Service Work was also somewhat reduced in the number of registrants. It will be observed from the statistical tables, however, that the war conditions affected the registration of the first semester very much more than that of the second semester. The return of men from service materially increased registration in our evening classes, particularly in the classes in business subjects. It will also be observed that the influenza and the ensuing closing of schools and embargo on public meetings interfered very appreciably with the lyceum courses in the communities of the state. Many of these courses were summarily cancelled and others had to be curtailed. The epidemic also played havoc with the personnel as well as with the time-blocks of the professional companies which we are accustomed to engage.

Short Courses are a very acceptable form of extension service. The Sixth Annual Merchants' Short Course had the largest enrollment of any session except the one held in 1914-15. This Short Course is now an established institution and should be strengthened year by year. The Short Course for Volunteers in Social Service should be enriched and enlarged. A new course in Methods of Teaching Trade and Industrial Subjects was offered this year for the first time. This work was done in coöperation with the College of Education and the State Board for Vocational Education to meet the needs for teachers of vocational subjects arising as the result of the passage of the Federal Smith-Hughes Bill. The course was a temporary one to meet an emergency, and it is not yet known whether it will be called for next year. The Short Course for Dentists given in 1917-18 was so successful, and the demand for this kind of work to keep practicing dentists abreast of new discoveries in the profession was so imperative, that three courses were offered in the spring and summer of 1919, one lasting two weeks and the other two lasting one week each. In September, 1919, a one month's course in Prosthetics is to be offered under the direction of an acknowledged

master in that art. I am convinced that the usefulness of the University to certain outside professions and trades may be greatly enhanced by the introduction of numerous short courses in various fields.

During the year 1918-19, the work of the Drama Service was directed by Mr. John Seaman Garns. Mr. Garns was engaged on a half-time basis and taught three evening classes in addition to doing the advisory work called for by the Drama Service. The testimonials from the schools and other organizations served convince me that this is a very worthy form of extension service.

During the latter part of the year under review, a claim was set forth by the University Director of Business Education that all extension classes in business subjects should be brought under his immediate direction and administration or under that of the proposed School of Business whose establishment he was also advocating. The Extension Division felt called upon to resist this claim and to set forth boldly its exclusive rights to jurisdiction over a certain field of activity which had been assigned to it originally by the Board of Regents. The Extension Division laid claim to jurisdiction over all extramural activities of the University. Its jurisdiction, it defined as its right to coöperation with all departments, schools, and colleges of the University in offering University work off the campus. The issue finally came to a hearing before the Board of Regents, and the Regents, after hearing the Dean of the College of Science, Literature, and the Arts, the Director of Business Education, and the Director of University Extension, decided by resolution that, whereas they waived for the present a decision on the establishment of a School of Business, they nevertheless stipulated that, in any case, there was to be no interference on the part of the new school, if established, with the extension classes in business subjects. A document has now been drawn up by the Senate Committee on University Extension which attempts to formulate the rights, duties, obligations, and jurisdiction of the General Extension Division in its coöperative relationships with other departments of the University. This document is to be submitted to the Administrative Committee of the Senate and thereafter to the Regents for final adoption. In this way, it is hoped that all controversial matters of jurisdiction will be settled.

We are planning for the coming year two notable forms of expansion. Judge Frank T. Wilson of Stillwater has been appointed Community Organizer. Through him, we plan to offer the heterogeneous elements in our Minnesota towns advice and assistance for accomplishing real community organization. It is planned to cultivate community solidarity, to eliminate cliques and factions, to bring farmers and retail merchants into harmonious and mutually helpful relationships, and to stimulate and foster community solidarity and community self-expression. It is planned not only to organize community clubs, but to keep them alive by advice, suggestions, and programs furnished from this office. We are also planning a considerable expansion for our Bureau of Visual Instruction. Mr. J. V. Ankeney, Assistant Professor of Agricultural Education, who has made a specialty of this line of work, will be in charge of the Bureau.

In addition to the service of lantern slides which we have maintained for five years, we shall now furnish also a service of educational films. We plan to make a large use of the films which have been accumulated during the war in Washington, and which have now been placed at our disposal.

During the past year, we have lost the valuable services of Mr. R. B. Oshier, who has been Secretary of our Lecture and Lyceum Department for the past five years. To his zeal and enthusiasm should be ascribed most of the effectiveness and growth of that department. His successor will be Professor A. W. Olmstead, now of the Department of Rhetoric and Public Speaking, who will take the new position August 1, 1919.

The thanks of the University are due to the Advisory Committee of Minneapolis and Saint Paul business men who have so ably assisted us in the organization and management of the annual Merchants' Short Course. These men are actively connected with the jobbing interests of the Twin Cities. They are: Mr. H. A. Merrill, of Merrill, Greer, and Chapman, and Chairman of the Jobbers' and Manufacturers' Trade Extension Committee, St. Paul Association; Mr. Frank Gold, of the Northwestern Knitting Company, and Chairman of the Trade Extension Committee, Civic and Commerce Association, Minneapolis; Mr. J. M. Paul, Credit Manager of McDonald Brothers Company, Minneapolis; Mr. A. G. Perry, Credit Manager of Butler Brothers, and Chairman of the Educational Committee of the Minneapolis Association of Credit Men; Mr. C. E. Lawrence, Advertising Manager of Finch, Van Slyck, and McConville, St. Paul; Mr. H. O. Roberts, Secretary, Minnesota Retail Hardware Association; Mr. H. S. McIntyre, Vice President and Managing Editor of the *Twin City Commercial Bulletin*.

Your attention is directed to the report of the Correspondence Study Department in which there is shown a very gratifying growth over any preceding year. That the growth was accomplished during the year when virtually all of our activities showed diminution is a cause for congratulation. During the coming year, we are convinced that this Department will grow by leaps and bounds. Its present effectiveness is largely to be ascribed to the faithful and efficient work done by the new head of the Department, Mrs. Sarah H. Van Dusen. This year's experience has amply vindicated the wisdom of putting some experienced person in entire charge of this line of work.

In addition to the regular extension classes a course on the Historical Background of the Great War was given in Duluth. The registration was made up of teachers of the city schools and of the State Normal School, and the fee was paid jointly by the Board of Education and the State Normal School. The course consisted of six lectures given by the following members of the University Faculty: M. W. Tyler, W. S. Davis, C. D. Allin, A. E. Jenks, H. J. Fletcher.

UNIVERSITY EXTENSION

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SUMMARY OF REGISTRATION FOR THE YEAR 1918-1919

DEPARTMENT	FIRST SEMESTER	SECOND SEMESTER	YEAR
COLLEGIATE			
Minneapolis	670	389	1,059
St. Paul	95	53	148
Duluth	27	....	27
Total	792	442	1,234
BUSINESS			
Minneapolis	268	481	749
St. Paul	76	79	155
Duluth .....	....	108	108
Total	344	668	1,012
ENGINEERING			
Minneapolis	69	90	159
St. Paul	28	28	56
Total	97	118	215
Totals	1,233	1,228	2,461

SUMMARY OF CLASSES FOR THE YEAR 1918-1919

DEPARTMENT	FIRST SEMESTER	SECOND SEMESTER	YEAR
COLLEGIATE			
Minneapolis	22	20	42
St. Paul	5	4	9
Duluth	1	....	1
Total	28	24	52
BUSINESS			
Minneapolis	13	17	30
St. Paul	4	6	10
Duluth .....	....	3	3
Total	17	26	43
ENGINEERING			
Minneapolis	6	8	14
St. Paul	1	1	2
Total	7	9	16
Totals	52	59	111

GRAND SUMMARY OF FEES FOR THE YEAR 1918-1919

DEPARTMENT	FIRST SEMESTER	SECOND SEMESTER	YEAR
Total collegiate	\$3,682.50	\$2,325.00	\$6,007.50
Total business	2,600.00	3,404.50	6,004.50
Total engineering	635.00	811.00	1,446.00
Totals	\$6,917.50	\$6,540.50	\$13,458.00

THE PRESIDENT'S REPORT

COMPARATIVE STATEMENT OF EVENING CLASSES

	1914-15	1915-16	1916-17	1917-18	1918-19
BUSINESS COURSES					
Number of classes.....	69	49	62	51	43
Number of instructors from Extension Division	4	3	3*	2	3*
Number of instructors from outside Extension Division..	18	12	11	19	15
Number of registrations.....	1,846	1,080	1,739	1,056	1,012
Fees received from registra- tions	\$9,059.50	\$6,821.00	\$10,649.50	\$7,013.75	\$6,004.50
Salaries paid to instructors on Extension staff	9,100.00	6,100.00	6,250.00	5,750.00	5,200.00
Fees paid to instructors not on Extension staff	5,421.00	4,135.00	6,349.00	4,944.50	5,137.52
COLLEGIATE COURSES					
Number of classes.....	61	67	68	65	52
Number of instructors from Extension Division	2	2	1†	2‡	1‡
Number of instructors from outside Extension Division..	24	27	34	25	25
Number of registrations.....	1,155	1,425	1,655§	1,420	1,234
Fees received from registra- tions	\$5,863.00	\$6,569.75	\$7,608.50	\$6,255.00	\$6,007.50
Salaries paid to instructors on Extension staff	3,300.00	3,300.00	†750.00	2,300.00	‡500.00
Fees paid to instructors not on Extension staff	6,709.50	7,975.00	9,875.00	8,756.25	7,590.00
ENGINEERING COURSES					
Number of classes.....	31	27	33	25	16
Number of instructors from Extension Division	1	1	1	1	1
Number of instructors from outside Extension Division..	13	8	11	6	5
Number of registrations.....	349	349	373	210	215
Fees received from registra- tions	\$2,298.50	\$2,154.00	\$2,164.00	\$1,675.00	\$1,446.00
Salaries paid to instructors on Extension staff	2,000.00	2,000.00	2,000.00	2,100.00	2,100.00
Fees paid to instructors not on Extension staff	3,000.00	2,325.00	2,787.50	1,925.00	1,700.00

* Full time for two instructors, part time for one.

† Part time collegiate; part time business.

‡ Part time collegiate.

§ In the report for the year 1916-17, this was carried as 1,718 but included 63 registrations in Swimming of the first semester duplicated in the second semester.

COMPARISON OF THE ENROLLMENT OF EVENING EXTENSION CLASSES
FOR THE YEAR 1917-1918 AND THE YEAR 1918-1919

SUMMARY OF STUDENTS

	1917-18	1918-19
Total collegiate	1,420	1,234
Total business	1,056	1,012
Total engineering	210	215
Total	2,686	2,461

UNIVERSITY EXTENSION

SUMMARY OF FEES

	1917-18	1918-19
Total collegiate	\$6,265.00	\$6,007.50
Total business	7,013.75	6,004.50
Total engineering	1,675.00	1,446.00
Total	\$14,953.75	\$13,458.00

CORRESPONDENCE COURSES

The following tables summarize the correspondence work for the year:

Number of students on roll August 1, 1918.....	177
Number of new students registered from August 1, 1918, to July 1, 1919.....	223
Number of registrations from August 1, 1918, to July 1, 1919.....	256
Number of expirations not reinstated during the year.....	73
Number of courses canceled or refunded during the year.....	12
Number of reinstatements of registrations during the year.....	29
Number of courses completed during the year.....	91
Number of registrations in force during the year	
in business subjects.....	46
in collegiate subjects.....	387
in preparatory subjects.....	22
in engineering subjects.....	12
	467
Number of active students during the year sending 4 or more lessons.....	180
Number of active students during the year sending less than 4 lessons.....	86
Number of students recently registered and not yet started.....	46
	312
Number of inactive students whose terms have not expired.....	69
Number of students registered in two or more courses.....	74
Number of instructors carrying on courses.....	39
Number of students on roll July 1, 1919.....	248
Number of courses active on July 1, 1919.....	286

COMPARISON OF ENROLLMENT, 1914-19

	Aug. 1 1914	Aug. 1 1915	Aug. 1 1916	Aug. 1 1917	Aug. 1 1918	July 1 1919
Number of students on the roll.....	76	100	196	208	177	248
	1914-15	1915-16	1916-17	1917-18	1918-19	
New students	102	199	190	151	223	.....
Number of active students during the year	105	182	247	210	312	.....
Number of completions	49	86	110	99	91	.....
Number of students carrying 2 courses..	49	80	85	88	74	.....
Number of instructors.	31	35	41	40	39	.....

THE PRESIDENT'S REPORT

COMPARISON OF ENROLLMENT, 1914-19—Continued

	Aug. 1 1915	Aug. 1 1916	Aug. 1 1917	Aug. 1 1918	July 1 1919	
Number of students on the roll	100	196	208	177	248	.....
Number of students ac- tive	68	96	143	91	179	.....

SHORT COURSES

Merchants' Short Course.—The sixth annual Merchants' Short Course was held during the week of February 10 to 14, 1919, with an enrollment of 168. The forenoon sessions included inspirational lectures of interest to both managers and salespeople. The afternoon sessions were devoted to sectional meetings for those interested in textiles, hardware, or groceries.

Training Course for Volunteers in Social Service Work.—The second short course for Volunteers in Social Service Work was conducted in St. Paul October 14 to November 22, 1918. The course was given in co-operation with the A. H. Wilder Charity, the United Charities and the State Department of Labor, and included lectures and field work. There were 25 registrants who paid fees amounting to \$38.50.

Course in Methods of Teaching Trade and Industrial Subjects.—To meet the need for teachers of vocational subjects arising as the result of the passage of the federal Smith-Hughes Bill, a course in Methods of Teaching Trade and Industrial Subjects was given at various centers in the state by the General Extension Division in coöperation with the State Board for Vocational Education. The course began the first week in January, 1919, and continued until about the first of May. Sessions were held in Minneapolis at Dunwoody Institute, in St. Paul in the Mechanic Arts High School, in Duluth at Central High School, and in Virginia at the High School.

The course was open to teachers of technical subjects or teachers of related trade subjects with some trade experience, and to any tradesman possessing a fair technical knowledge. The content of the course consisted of (1) trade analysis, (2) teaching methods, (3) instructional management, its aim being to convert the skilled tradesman into an efficient shop teacher and the technically trained student into a teacher of related shop subjects.

A tuition fee of \$5.00 was paid by ninety-seven registrants grouped as follows:

Minneapolis	30
St. Paul	27
Duluth	16
Virginia	24
Total	97

Short Courses for Dentists.—In coöperation with the College of Dentistry of the University, the General Extension Division conducted the following Short Courses for Dentists:

- Course I. Crown and Bridge Work, May 19 to 31; 9 registrations.
- Course II. Porcelain Jacket Crowns and Inlays, June 9 to 14; 10 registrations.
- Course III. Oral Surgery, June 9 to 14; 57 registrations.

The instruction in the courses was given by regular members of the College of Dentistry and the Department of Anatomy, and included intensive lectures and clinic work lasting throughout the day.

LECTURE AND LYCEUM DEPARTMENT

The following tables summarize the work of the Lecture and Lyceum Department for the year:

Number of different attractions used.....	37
Number of members of University Faculty.....	6
Number taken from outside the University.....	31
Total number of towns represented.....	176
Total number of attractions.....	780
Total amount of fees.....	\$33,087.50
Total audiences represented (estimated).....	129,400

COMPARISON, 1914-19
COURSES

	1914-15	1915-16	1916-17	1917-18	1918-19
Number of towns having courses	100	110	136	180	176
Number of engagements filled	522	541	654	905	780
Price of courses.....	\$25,040.83	\$29,145.00	\$34,692.00	\$38,814.50	\$33,087.50

SINGLE LECTURES OR ENTERTAINMENTS

	1914-15	1915-16	1916-17	1917-18	1918-19
Number of towns having lectures or entertainments	89	42	14	12	16
Number of engagements filled	94	59	27	14	21
Amount of fees.....	\$2,784.49	\$1,785.00	\$ 560.00	\$ 280.00	\$ 275.00

Courses of from two to ten numbers have been booked in 163 towns for delivery during the year 1919-20.

COMMENCEMENT ADDRESSES

In addition to the lectures and entertainments listed above, commencement addresses were arranged for in 52 towns.

VISUAL INSTRUCTION

At the beginning of the year 1918 and 1919, it was planned to carry out the circuit system which was inaugurated during the preceding year, whereby each town on the circuit should receive one set of slides each week. Tentative arrangements were made with a number of towns, and it was expected that at least four circuits would be organized. The influenza epidemic in the autumn, however, prevented the carrying out of these plans. Only one circuit was organized, composed of 13 towns. These towns began to receive slides early in November and the service was continued until about the middle of April. In addition to the circuit, we endeavored to fill requests for slides throughout the year.

DRAMA SERVICE

Following is the report of the Drama Service for the year ending June 30, 1919:

The work of the Drama Service during the year just past has been largely directed to giving assistance to local communities in the selection of suitable plays for amateur production, and to furnishing advice to producing committees with relation to staging, costuming, or coaching the plays produced. Several times during the year we have been permitted to assist communities in getting together material for a local pageant. This type of activity we are especially anxious to encourage and foster.

Outside the larger cities, the great preponderance of amateur dramatic activity is centered in the high school of the smaller towns and in the rural school of the country districts. These feel the need of such service as we render, and to these it has been our privilege to render the large percentage of the service actually given.

When requests come for plays, a brief questionnaire is sent, asking such information with relation to local conditions as will enable the Drama Service correspondent to select plays wisely. Four or five plays are then sent from which selection may be made. If none of these are satisfactory to the local committee, the service is continued until a suitable play is chosen. If costume plates, drawings, or advice as to staging are desired, they are freely given.

During the year, a considerable number of requests have come from neighboring states in which no such service is rendered. Owing to the great demand made upon our rather limited library by home communities, however, service outside the state has been limited to drama advice only.

Total number of Minnesota towns served.....	158
Total number of inquiries.....	308
Total number of plays sent.....	1,420
Total number of towns outside of Minnesota served.....	20
Total number of inquiries.....	21

MUNICIPAL REFERENCE BUREAU

Two hundred inquiries were handled by the Municipal Reference Bureau during the year.

Subject of inquiries.—The whole range of municipal government and administration was covered, as in previous years. However, there was a notable diminution of inquiries touching public works, such as pavements and streets, sewers, and the like. This circumstance is attributable to the voluntary and involuntary restrictions entailed by the war. Already the cessation of hostilities has been reflected in the reappearance of such inquiries. The war effected an increase above the normal in inquiries and requests for assistance in public utility rate matters. Rising costs were alleged as the basis of many actual and requested rate increases. In many instances the municipality has no voice in rate matters, as it has failed to make proper reservations in the franchise granted. Those with reservations almost invariably found themselves without a scientific method of fixing rates when the matter came before them for action. A number applied to the Bureau for advice. In one such case it was necessary for the Secretary to go to the city concerned and spend two days.

Scientific rate making is as important in the case of municipally owned utilities as of those privately owned, but rarely receives as much attention. In a few cases, however, the increased costs of war-time operation forced the matter before the municipal authorities, and the Bureau has been able to render service to some who were dealing with it.

The desire on the part of certain private companies to acquire plants now owned and operated by municipalities has given rise to a small group of very interesting problems.

The number of inquiries concerning charters and charter framing is normal as compared with other years. However, it is not possible to report any new charter adopted during the year.

Service requested.—The inquiries varied from telephone inquiries to studies on problems which required a large part of the Secretary's time for a week or more. The Secretary was called to the cities of Canby, Bemidji, and Blue Earth on trips which took two days each, and to the village of Buffalo for a day. In other cases the Bureau procured other members of the Faculty to go to certain municipalities to work on problems which could not be dealt with by correspondence.

The close affiliation of the Bureau with the League of Minnesota Municipalities continues. The League's Sixth Annual Convention, which was to have been held in October, 1918, was postponed by the State Board of Health upon the eve of the announced dates, as a measure of preventing the spread of Spanish influenza, which was epidemic in the state for some time thereafter. It proved impossible to hold the convention until June, 1919. An entirely new program had to be prepared. During the winter the Secretary had to devote a considerable portion of his time to aiding the League's committee on legislation with information needed during the legislative session, and to following the action of the Legislature upon measures affecting the municipalities.

The Secretary has published in *Minnesota Municipalities*, the League's magazine of which he is editor, a great deal of information useful to the officials of the municipalities. Of principal importance are several articles on public utilities, one on charters, and a digest of 1919 legislation affecting municipalities.

THE PRESIDENT'S REPORT

In November, 1918, the Secretary was requested to serve as secretary for the Telephone Subscribers' Defense Committee, an organization formed to represent the interests of the municipalities and the public in hearings before the State Railroad and Warehouse Commission on petitions of the telephone companies for "emergency" rate increases.

COMPARATIVE STATEMENT OF ACTIVITIES, 1914-19

	1914-15	1915-16	1916-17	1917-18	1918-19
EVENING CLASSES					
Number of semester registrations	3,350	2,854	3,830	2,686	2,461
Number of individuals during the year without duplication	2,539	1,951	2,371	1,825	1,741
Number of semester classes..	161	143	163	141	111
CORRESPONDENCE COURSES					
Number of registrations from August 1 throughout the fiscal year	102	199	190	151	256
SHORT COURSES					
Merchants' Short Course					
Number of registrations...	231	134	125	125	168
Social Service Course					
Number of registrations...	....	....	....	41	25
Course in Methods of Teaching Trade and Industrial Subjects					
Number of registrations...	....	....	....	....	97
Short Courses for Dentists					
Number of registrations...	....	....	....	50	76
LECTURE AND LYCEUM DEPARTMENT					
Number of towns having courses	100	110	136	180	176
Number of engagements filled at above towns.....	522	541	654	905	780
Number of single engagements	124	82	100	57	73
VISUAL INSTRUCTION					
Number of schools served...	52	80	108	62	37
Number of showings of slides	106	205	343	463	185
DRAMA SERVICE					
Number of towns served.....	....	....	193	226	178
Number of inquiries received	....	....	353	361	329
Number of plays sent.....	....	....	1,143	1,918	1,420
MUNICIPAL REFERENCE BUREAU					
Number of towns making inquiries	80	100	102	72*	96
Number of inquiries received	....	200	225	225	200
EXTENSION DEBATES†					
Number of debates given...	35	14	....	....	....
UNIVERSITY WEEKS‡					
Number of towns served....	24	12	....	....	....
Number of Faculty members participating in program..	18	15	....	....	....

* This does not indicate a lack of interest in, or appreciation of the service rendered by the Municipal Reference Bureau as it might seem at first glance. Inquiries were anticipated by questionnaires and the results, after being compiled, were sent out.

† These were temporarily discontinued in 1916-17, 1917-18, 1918-19.

‡ These were abandoned in 1916-17, 1917-18, 1918-19.

Respectfully submitted,

RICHARD R. PRICE, Director

THE SUMMER SESSION

To the President of the University:

SIR: I herewith submit my report as Director of the Summer Session for the year 1919, held June 23 to August 2.

ENROLLMENT

Agriculture	202
Dentistry	88
Education	134
Engineering	63
Law	40
Medicine	175
Science, Literature, and the Arts.....	678
	1,380
University High School.....	87
	1,467

The total increase in college registrations this year was 222. The University High School was kept open for the first time and had a registration of 87 students, so that the total increase of students of collegiate and secondary grade was 309.

Faculty.—The total number of persons giving instruction was 178, of whom 168 belonged to the regular Faculties of the University. The following outside persons were employed: Earl Baker, Minneapolis Public Schools, Public School Music; William Ball, Minneapolis Public Schools, Americanization; John Collier, New York City, Social Work; Harriet Dow, New York City, Americanization; Hastings H. Hart, New York City, Social Work; Anne M. Nicholson, San Francisco, Americanization; Amelia Sears, Chicago, Social Work; Ernest P. Wiles, Akron, Ohio, Americanization; N. A. Young, County Superintendent of Schools, St. Louis County, Americanization.

Financial statement.—The total appropriation for the Summer Session this year was \$38,500, including \$5,000 for the University Farm and \$1,000 for the University High School.

Disbursements were as follows:

Advertising	\$ 386.32
Printing	234.90
Entertainment, music, lectures.....	174.30
Supplies, main campus	226.03
Supplies, University Farm.....	200.00
Supplies, Medical School.....	1,725.00
Total payroll, main campus.....	28,488.18
Payroll Farm campus.....	4,250.80
	\$35,685.53

Advertising.—More money was spent for advertising the Summer Session than was ever spent before. The sum spent, however, was inadequate. I am convinced that we should put four or five times as much

in advertising as is now used for this purpose, and that we should advertise more widely in educational journals in the South.

Budget.—A budget was again prepared and submitted for approval. On account of the changes in the Faculty, due to some men returning from war service and to others leaving the University, either temporarily or permanently, it has been necessary to make a good many changes in the budget, but I believe that the policy of preparing a budget should be continued.

Registration.—Great improvement was made in the manner of registration. In spite of the fact that a few people criticized the University because they were compelled to stand in line for a short time to complete their registration, there was little justification for this criticism, as the organization of the Registrar's office was so effective that no student was compelled to be in line more than an hour.

Lectures and entertainment.—Lectures, entertainments, and sight-seeing trips were arranged for as follows:

Convocations: two all-University convocations were held in the Armory; June 26, Dr. G. S. Ford; July 3, President M. L. Burton.

Lectures in Little Theater: July 1, Dr. H. H. Hart; July 8, Dean L. W. Jones; July 11, Professor F. Jager; July 15, Dr. R. E. Hieronymus; July 17, the Reverend John A. Ryan; July 18, Dr. John Collier; July 24, Dr. A. E. Jenks; July 29, Dr. A. J. Todd; July 31, Professor C. P. Bull.

Entertainments: June 27, reception for Faculty and students; July 11, all-University group picnic at main campus; July 25, all-University group picnic at Farm campus.

Sight-seeing trips: July 5, Fort Snelling, Old Soldiers' Home, Minnehaha Falls, and Longfellow Gardens; July 12, St. Paul, State Capitol, Indian Mounds, and State Fish Hatchery; July 19, Stillwater and the State Prison; July 26, Taylors Falls, Dalles of St. Croix.

Courses in Americanization.—The University took an advanced stand with reference to the giving of courses in Americanization. More courses of a comprehensive and fundamental character were given at Minnesota than were given at any other university in the United States. Great interest was manifested in the courses and in the character of the work done by the instructors.

"Social Service Plattsburg."—The "Social Service Plattsburg," established in the Summer Session of 1918, was continued this year. It attracted social workers from many parts of the United States.

Physical Education for Men and Women.—The physical education building for women was open again this year. It is recommended that arrangements be made this next year to have the physical education building for men and Northrop Field made available for Summer Session students.

Salary schedule.—The salary schedule was one ninth of the annual salary of the instructors, with the understanding that no one should receive less than \$175 and no one more than \$375. This regulation applied only to members of the regular staff.

Continuation courses.—Continuation courses are offered this year in all departments in the Medical School, and in Chemistry and Animal Biology.

Dean of Student Affairs and Dean of Women.—Both Dean Nicholson and Dean Beggs remained during the entire Summer Session and were of great assistance to the Director in caring for the welfare of the students. Dean Nicholson's report on their activities is attached to this report.

Quarter system.—In view of the fact that the University plans to go on the quarter system this next year and to operate the Summer Session as a fourth quarter, I wish to call attention specifically to certain results that have been secured during the last four years in the organization of the Summer Session. Four years ago there were four separate and independent Summer Sessions at the University; now there is one. Four years ago great irregularities existed in the teaching schedules—some instructors were teaching eight to ten hours a week while others were teaching more than twice as many hours; now a fairer and more equitable schedule is in operation. Four years ago registration was carried on in each college; now it is carried on in accordance with a uniform plan of the Registrar. We have during this period introduced a general University plan and method of dealing with delinquent students, students who drop courses, or students who are compelled to withdraw for various causes. The standards of the Summer Session have been raised during the last two years, so that only students of college grade have been permitted to register. The number of students has doubled and the graduate registration quadrupled in the four years. All these things have emphasized the idea that the University is a University and not a mere association of separate colleges. These policies represent desirable features of administration which should be continued in the summer quarter in so far as conditions will permit.

Attention is called to the fact that it will cost from one third to one half more to operate the first half of a summer quarter than it has cost to operate a summer session, if instructors are to be paid one third of their annual salaries. Provision must be made for this increase in the budget next year.

The reports of Dean Nicholson and Mr. Robert C. Lansing, Vice-Director of the Summer Session, are given in full in the following pages.

THE SUMMER SESSION OF THE DEPARTMENT OF AGRICULTURE

EXPENSES

Salaries	\$4,252.80
Supplies for Manual Training	46.97
Labor	6.50
Groceries, meats, laundry	157.43
Ice	20.00
Total	\$4,483.70

THE PRESIDENT'S REPORT

ATTENDANCE

	MEN	WOMEN	TOTAL
Intensive course (2 weeks) for teachers in the Smith-Hughes schools	60	...	60
Teachers in Training School.....	4	237	241
Consolidated school principals.....	68	19	87
Of the above principals there were registered in the College...	60	13	73
College students exclusive of principals.....	38	91	129
	<hr/>	<hr/>	<hr/>
Total College students.....	98	104	202

Secretary West says that there may be a slight duplication in the lists of principals and of teachers in the Training School, as registration is sometimes changed from one school to another. In his report to the President he will eliminate these duplications.

Several changes would increase attendance and promote the growth of the College. First, the students should be made to feel that a summer session is a part of the regular college year and not incidental or of a different nature. To that end, courses announced in the bulletin should be given regardless of the numbers registering for them. After registration was completed this summer 11 courses were discontinued because of small numbers, compelling a good many students to rearrange their schedules. This shifting and consequent delay has a bad effect on students and Faculty.

Second, advertising of a popular sort appealing to young people would attract many who do not know that our courses are on a par with those offered elsewhere. Publicity through agricultural papers, posters, and bulletins with photographs and a non-technical description of various courses would attract students from an extensive territory.

Third, Mr. Dyer, Director of the Courses for Consolidated School Principals, says that courses leading to the degree of M.S. would increase the attendance of teachers of agriculture who are graduates of colleges and who object to the payment of fees for undergraduate courses for which they receive no credit.

A definite policy requiring all principals following college courses to pay the regular fees should be adopted and announced throughout the state, so that students will come with the expectation of paying the fees. The present plan of excusing some from the payment causes dissatisfaction.

Mr. Dyer also suggests that the schedules of classes on both campuses be so arranged that students may avail themselves of courses on either campus.

Further I believe that teachers asked to teach in the Summer Session should be guaranteed a salary whether their classes fill or not. Under the present plan, teachers, especially the best ones, feel inclined to accept positions for the summer in institutions where salaries are sure. Guaranteed salaries would not add much to expenses, for the certainty that all courses would be given as announced would increase the attendance of students and consequent income from fees.

Salaries should be increased to equal those offered for the same work in other colleges. Thirteen or 14 per cent of the salary received for the three quarters would not be too much.

Respectfully submitted,
 ROBERT C. LANSING, *Vice-Director*

THE ADMINISTRATIVE BOARD

I herewith submit a report of the Administrative Board for the Summer Session, 1919.

Registration.—During the two days set apart for regular registration, there were present in the Library Building representatives from each department offering instruction. During these two days a member from the Students' Work Committee of each college was present, when it was possible to get one, and the Dean of Student Affairs; this group acting as a Special Administrative Board for the Summer Session. The regulations and requirements of the regular quarter were adhered to.

Following the two registration days, all matters pertaining to students' work, registration, etc., were referred to the office of the Dean of Student Affairs. Whenever possible, the cases of students in the different colleges were taken up in conference with some member of that particular college.

The demand for registration continued throughout the session. Registration for the short courses beginning July 14 was accepted up to and including that date. Most of the requests received after that time were from students who had been allowed by instructors to attend classes without registration, and desired to record officially the subject and receive a grade. This was allowed in one or two cases, until it was found that there was going to be a comparatively large number, when it was stopped. The greater number of cases were from the Americanization courses.

Absences.—The same procedure was followed as during the regular quarter. Instructors submitted a report of absences from their classes once a week. In the greater number of cases where excessive absences were shown, it was found to be due to error in registration. In those cases summoned late in the session it was impossible to follow up those who failed to report and compel them to come in. Following is the summary of the work on absences:

Total number of students called in for absences.....	110
Number who responded.....	79
Number who did not respond.....	24
Number who had cancelled.....	7
Total	110
Barred from finals on account of absences.....	7

There were 117 instructors who should have reported absences.

The first week.....	73 reported
The second week.....	81 reported
The third week.....	96 reported

THE PRESIDENT'S REPORT

The fourth week.....	92 reported
The fifth week.....	84 reported
No report	11

Scholarship.—A report was called for from each instructor, at the end of three weeks, on students who were not doing satisfactory work. Following is a summary of the delinquent report:

	ONE SUBJECT	TWO SUBJECTS
Men	46	8
Women	66	10

At this time it is impossible to make a final report on the scholastic work of the session, a report based on final grades given by instructors. The final grades for the session will not be accessible for at least ten days.

Visitors or auditors.—During the two previous sessions, auditors or visitors were not admitted. For this session, special provision was made for teachers, principals, and superintendents. Such persons, provided they were carrying at least three hours of credit work, might be registered as an auditor or visitor in a subject bearing closely on the work which they were handling in their schools. A close check was kept on this privilege at the beginning of the session. Later it was found that auditors and visitors were being registered through the Registrar's office, independently of this office, and without regard to any other work they were carrying. An attempt was made to check up on the number of auditors. The figures obtainable will show in the following summary of petitions. These auditor figures are probably not correct.

Below is a summary of petitions and action taken. It is to be borne in mind that in many cases petitions are not actually presented; advice given in conference is accepted and the matter dropped. Late registration includes registration in mid-session for the short courses beginning July 14, and also registration of students who applied before June 19, but were not allowed to register because there were no registration blanks. There were many who, finding that they could not present themselves on either of the two regular days, attempted to register early.

Total number of petitions passed on.....	425
Regular college students.....	169
Not regular college students.....	256

A. Late registration

1. Soldiers just released from service.....	6
2. Teachers just released from work.....	23
3. Miscellaneous	163
4. Refused	2

B. Change registration

66

C. Cancellations

55

D. Add subject to registration.....

29

E. Carry extra work

1. Granted

2. Not granted

9

11

F. Miscellaneous requests	
1. Granted	23
2. Not granted	1
G. To register as auditor only.....	10
To register as auditor with other work.....	25

Respectfully submitted,

EDWARD E. NICHOLSON

Recommendations.—1. That the Summer Session be extended to eleven weeks, to be divided into two terms of six and five weeks.

(a) The eleven weeks session is practically in effect now, because for the last two sessions, when there has been sufficient demand, any course has been continued for four weeks beyond the regular six weeks' period.

(b) It is and will be necessary to maintain the short six weeks' course, for: (1) the group to whom the summer quarter will make the greater appeal is the teacher group; (2) if the teacher group is to be brought here and efforts made to increase it, the short session will have to be maintained, for the major number of this group will not give over six weeks to summer work.

2. That the summer quarter be organized with a Director and a centralized administration.

(a) The teacher group is much more mature than the regular student group. (1) It has no knowledge, as a rule, of University procedure, regulations, or requirements. (2) Lack of uniformity in the handling or treatment of the individuals of this group is more quickly resented than is the case with regular students. This dissatisfaction will have much more far-reaching results than in the case of ordinary students.

(b) That with such an organization, the idea of "The University of Minnesota" instead of the "College" idea will continue to grow and be carried throughout the state. Such an organization will function smoothly and the administration will be uniform.

(c) A decentralized organization will mean an aggregation of colleges, with a multiplicity of administrative units, conflicts of interests and requests, and a wide variation in administration. In all probability there will not be more than two colleges with sufficient registration to warrant the necessary money, time, or energy required by the added administrative units.

Respectfully submitted,

L. D. COFFMAN, *Director*

DEPARTMENT OF PHYSICAL EDUCATION FOR MEN

To the President of the University:

SIR: I herewith submit my annual report for the year 1918-19.

Note.—During the period of the Students' Army Training Corps the regular required work of the Department was confined to the civilian students, while members of the S.A.T.C. in large numbers optionally used the departmental privileges.

The Director was officially identified with the physical examinations of candidates for the S.A.T.C. and the Central Officers' Training School, and with the infirmary work at the barracks.

The chief tasks undertaken by the Department were practically the same as in former years, as follows:

1. Physical examination of all new matriculants and all those using the privileges of the Department, and medical inspection of the same.
2. Administration of a special lecture on sex hygiene.
3. Disease census of all new matriculants.
4. Lectures on personal hygiene for all freshmen in the University, except those of the College of Engineering.
5. Conducting organized classes in gymnastics for all students in the College of Science, Literature, and the Arts.
6. Conducting special classes for defectives in all colleges of the University.
7. Promotion of intramural sports, such as football, baseball, basketball, tennis, swimming, hockey, track and field events, boxing, etc.
8. Promotion of miscellaneous sports and physical activities including gymnastics, track and field events, Sigma Delta Psi (the honorary athletic fraternity), and basket-ball.
9. Promotion of minor intercollegiate athletics.
10. Organization and administration of special features of physical education.

Physical examination.—1. A careful physical and medical examination was given all new students entering the University and the University High School. This required examination included the personal history of the student; inspection and examination of the heart, lungs, nose, throat, teeth, eyes, ears, skin, and body in general; prescription of corrective exercises.

2. Medical inspection was required of all students using the Department privileges, such as shower-baths, swimming pool, towel exchange, gymnasium, training quarters, and athletic field. All candidates for athletic teams were required to take a physical examination at the beginning of the training season, and as often during the season as their physical condition indicated.

3. A second physical examination, at the end of the school year, was required of all students taking the regular gymnasium course.

During the year a total of 1,404 examinations was made, divided as follows:

Original examinations, with measurements	
Collegiate	728
University High School.....	27
Reëxaminations with measurements.....	237
Medical inspections—collegiate	412
Health consultations—referred to Students' Health Service.	
First aid cases—referred to Students' Health Service.	

Special lecture.—Five hundred and seventy students attended the special lecture on sex hygiene as required of all students entering the University for the first time.

This lecture was given in three divisions by Dr. H. L. Williams, who lectured twice, and Dr. J. C. Litzenberg.

Disease census.—Five hundred and fifty-seven disease census cards, properly filled out and signed, as required of all new matriculants, were sent to the Epidemiological Division of the State Board of Health for recording of data, to be returned later to the files of the Department of Physical Education for Men.

Personal hygiene lectures.—Four hundred and twenty-seven students were enrolled for this course, consisting of twelve lectures, given twice a week. The course embraced the following subjects: the human body briefly considered, nutrition, general and corrective exercises, bathing, hygienic hints, including suggestions on sleep, selection of student's sleeping- and living-rooms, care of the eyes, teeth, etc., infectious diseases, and first aid to the injured. Seven themes on the subject were required during the course with a written examination at the close.

Gymnasium classes.—Three hundred and fifty-four students were enrolled in organized gymnasium classes, conducted twice each week, as required by the curriculum. These classes were given in four sections and included calisthenics, elementary apparatus drills, marching, class tactics, running, and athletic games. All students taking this course were required to pass eight efficiency tests for credit in gymnasium. Three of these tests were required in the first semester and five in the second. The former were in swimming, bar vaulting, and set exercises on apparatus; the latter in life-saving, running, jumping, and apparatus work. The standards required in all the exercises are such that the average student, with the training given, can meet them, and are the result of careful study by the Department.

Corrective gymnastics.—Of the number enrolled in the gymnasium classes, 70 were classified as defectives, grouped according to condition, and were under the direction of an instructor who supervised the execution of corrective exercises as indicated. These defectives were excused from the qualifications required of other students, but they were required to come three times each week for work. A student whose petition was granted for excuse from military drill on account of physical disability was assigned to one of these groups.

Intramural sports.—Intercollegiate, interfraternity, and all-University contests were held in basket-ball, baseball, handball, hockey, swimming, track and field events, tennis, and boxing. (See report of Intramural Sports Committee.)

Miscellaneous physical activities.—1. Special classes were held in elementary and intermediate gymnastics.

The Department had an organized leaders' corps, consisting of four advanced leaders and eight squad leaders. Work in this course consisted in instructing and training classes and squads in calisthenics and gymnastic and apparatus work. Such of these leaders as cared to follow up the work were given the opportunity to register for advanced leadership with credit, and were placed in charge of classes under supervision of a member of the departmental staff.

2. Sigma Delta Psi, the honorary athletic fraternity, is well established at Minnesota. Five athletic trials were held during the year in the following events: football punt, baseball throw, running high jump, running broad jump, 100-yard swim, 100-yard dash, 220-yard low hurdles, pole vault, shot-put, 2-mile run, 10-mile walk, and tumbling. One hundred and twenty-eight students are enrolled as candidates for the fraternity. One senior-grade certificate was awarded at the close of the year to George H. Bierman, senior in the College of Engineering.

3. The Director of the Department is western member of the National Collegiate Basket-Ball Rules Committee and compiles all collegiate statistics in his territory of ten states, besides collecting photographs of teams, lists of names of captains, managers, and coaches, and writing up the Middle West Conference season for publication in the Basket-Ball Guide.

4. This Department has been active in the promotion of an intercollegiate basket-ball conference for interpretation of rules, making of schedules, and selecting officials for games in the Western Intercollegiate Conference, "Big Ten," and the Director of the Department is secretary of the association.

Intercollegiate competition.—Competition in intercollegiate athletics in the University is of two kinds: one, including football, basket-ball, and track and field events, is carried on by the Athletic Association without connection with the Department of Physical Education. The other is promoted by the Department of Physical Education but is financed by the Athletic Association, and includes gymnastics and wrestling. However, no intercollegiate competition in gymnastics and wrestling was held the past year, as in former years, on account of the war.

Recommendations for the future.—In view of the physical well-being of all men in the University, three urgent needs are again called to your attention: (a) a new gymnasium; (b) the development of more ground for intramural sports; (c) required physical education for all freshmen and sophomores.

Respectfully submitted,

L. J. COOKE, *Director*

DEPARTMENT OF PHYSICAL EDUCATION FOR WOMEN

To the President of the University:

SIR: I submit herewith my report for the year 1918-19.

The advances which have been made by this Department during the year may be summarized as follows:

1. The organization for the University High School of thoro-going Physical Education work for the girls of all four classes. The coöperation of the Principal of the High School has been most valuable in supporting all phases of the work.

2. The introduction of graphic methods of recording posture. Tracings of the posture profile were made for every student who had a physical examination in the fall. A second tracing was made for all students who had Physical Education during the year. In almost every case improvement was clearly shown. It was gratifying to note the interest which the students took in their "pictures."

3. The correlation between this Department and the University Health Service, whereby correction of defects could be secured to an extent which was never before accomplished, in the absence of dispensary service. Since the attention of specialists could be secured, eye, ear, nose, and throat defects which had been discovered in examination or consultation were frequently referred to the Health Service for further examination and treatment. The Director of this Department held an office hour at the Health Service four days a week during the year for purposes of advice and treatment of women students.

4. The adoption by the College of Science, Literature, and the Arts of a requirement that all sophomore women shall be required to register in this Department for two periods of exercise a week. The regulation will go into effect in 1919-20.

5. The organization of a four-year course for the preparation of teachers and supervisors of physical education, and the adoption of it by the College of Education. The course will be introduced in 1919-20.

Physical examinations and health consultations.—Full examinations were given to 1,404 students, including the newly entering students in all colleges (648), in the Agricultural Schools at St. Paul and Morris, and in the University High School (185); including also reexaminations of college and University High School students (571).

Required health consultations were held with 1,503 students, including 104 applicants for a reduction in college program, 580 upper-class students called in for their annual health examination, 819 initial consultations by various members of the staff with freshmen whose physical examination or hygiene records showed need for conference. Many of these students were followed up by from one to several additional conferences. In addition to the required consultations, the office hours were freely patronized by students seeking health advice of various members of the Department.

Required courses.—All newly entering students attended the fourteen required hygiene lectures, and the course in Elementary Physical Training three periods a week, and all sophomores who had not learned how to swim before entrance to the second university year were registered for swimming twice a week.

Elective academic courses.—Academic courses were given in Personal Hygiene, Hygiene of the Family, Principles of Gymnastic Teaching, and a Teachers' Course in Play.

Exercise courses.—Following is a summary of the registration in the exercise courses:

Elementary Physical Training.....	466
Intermediate and Advanced Physical Training.....	117
Rhythmic Expression	72
Organized Games and Folk Dancing.....	22
Basket-Ball	106
Baseball	113
*Swimming (required and elective).....	646
Archery (spring quarter).....	24

* Besides this, the pool was used incidentally to the extent of 386 "swims."

The short fall quarter cut down the numbers in all elective exercise.

The Women's Athletic Association.—The report of the Committee on Intramural Sports includes a report on the Woman's Athletic Association activities for the year.

Officers employed.—The staff of the Department consisted of the Director, one Assistant Professor, three Instructors, one part-time Instructor, a secretary, an accompanist, a matron, and an auxiliary staff of three women physicians, whose services were used during the periods of physical examination. Additional clerical service has been employed for checking the hygiene cards.

University High School.—All four classes of the High School attended Physical Education classes regularly during the year, three periods a week. Swimming occupied one of the periods for all the classes except the freshmen. In addition, an elective group met two afternoons a week for a play hour, while another group of nine girls attended an orthopedic class during the same hour, for the special exercises.

It is of interest that a questionnaire sent out May 29 by the High School Principal, to the parents of the girls of the senior class gave the following result:

"Is your daughter in better or poorer condition than at this time last year?"
Answers: less fit, 0; unchanged, 3; better, 6.

"Can you give reasons for the change?" Answers: gymnasium work, 3; less mental strain, 1; always well but improved by gymnasium work, 1; more regular habits of life, 1.

The Summer Session.—Two teachers' courses in gymnastics, games, and folk dancing were offered, and 50 students enrolled, an increase of 30 over last year. Fifty-two students registered for swimming.

The Extension Division.—Three classes used the natatorium one evening a week during the year. Ninety students registered.

Recommendations.—I would especially recommend finishing the natatorium unit by equipping with shower-baths and dressing rooms the space which has been reserved for them. It was necessary to leave this portion of the natatorium unequipped when the gymnasium was built, and therefore the girls who use the pool must take their showers in the general shower room. This necessitates their passing through a main hall from the locker room to the natatorium in dripping suits and bare feet. (During 1917-18 this journey had to be made about 9,000 times and by about 900 individuals.) The hall is very public, in view of any one entering the side door or passing up the main staircase. It is very cold in winter, and leads to serious complaint from students. It is indeed a source of embarrassment to the Department also, since we have to admit that students do run the risk of catching cold in passing through it, and rather frequently have to modify the requirement in swimming on that account.

I would also recommend transforming the storage space above the instructors' offices into three offices to correspond with those below. We shall have two instructors this coming year whose desks will have to be placed in hallways since there is no surplus office space. This condition is of course not favorable for intimate consultation with students, or to any sense of privacy or security for the instructor.

Respectfully submitted,

J. ANNA NORRIS, *Director*

COMMITTEE ON PHYSICAL EDUCATION AND INTRAMURAL SPORTS

To the President of the University:

SIR: The Committee on Physical Education and Intramural Sports respectfully presents its reports for the year 1918-19.

INTRAMURAL SPORTS FOR WOMEN

The following report on Intramural Sports for Women is submitted by Dr. J. Anna Norris:

Women's Athletic Association.—Certain changes in the regulations governing the winning of points toward the Women's Athletic Association seal are of interest. It was voted to count hygienic living as a positive factor, and to give it recognition comparable to that of making a second team in a minor sport. Hygiene record blanks were prepared to facilitate this purpose.

Achievement in apparatus work also was added to the list of possibilities for winning points. These new regulations were in accordance with the purpose of the Women's Athletic Association to produce health, physical efficiency, and athletic accomplishment.

Owing to the initiative and enterprise of one of the members of the Association, Miss Betty Grimes, an Aquatic League was formed this year as an adjunct. It had the effect of stimulating an increased interest in swimming, and its members showed exceedingly creditable work in the annual swimming meet.

Due to the late opening, rainy weather, and the epidemic of influenza, outdoor athletics in the fall quarter were practically eliminated.

Basket-ball.—Enrollment by classes: freshmen, 42; sophomores, 29; juniors, 23; seniors, 12; total, 106. An odd-even tournament of 6 games was held, December 11 to February 13. An interclass tournament of 9 games was held March 3 to 9. As in former years, the teams were chosen only just prior to the tournament, so that the interest of all might be maintained until the end.

Ice-hockey.—An unusually mild season prevented the development of this sport this year. Not enough practices could be held to make the players eligible for a tournament.

Gymnastics.—A contest between all the gymnastic classes occurred March 19. Members of the winning freshman class won one-half point toward the seal. The winning class was presented with a banner by the Department.

Baseball.—Enrollment by classes: freshmen, 50; sophomores, 33; juniors, 21; seniors, 9; total 113. A tournament was held, the final game being played on Field-Day.

Swimming.—A meet was held June 2. Eighteen girls entered, and new records were made in all but two events. In addition a meet for beginners, in which 9 girls entered, was held May 20.

Field-Day.—Field-Day occurred May 31, and the championship games which finished the season's tournaments were played in newcombe, cricket, baseball, and hockey. An archery meet was held. Preceding the athletic events a masque, *Ceres and Persephone*, was given by the classes in rhythmic expression.

Trophies were presented during the year as follows: Women's Athletic Association seals were won by two seniors (the rules confined them to seniors this year). Felt arm bands and sport insignia were awarded to those who won membership in the Aquatic League.

INTRAMURAL SPORTS FOR MEN

The following report on the Intramural Sports for Men is submitted by Dr. L. J. Cooke:

Intramural Sports during the past year were subnormal because of the war. During the period of the S.A.T.C. all athletics were conducted under the jurisdiction of the commanding officer of the unit, and were administered by the regular University coaches.

As soon as the S.A.T.C. was demobilized, an effort was made to put intramural athletics on a pre-war basis, and to this end the different groups participating in intramural sports were called in conference and organized. Considerable handicap was experienced on account of the chaotic conditions following the S.A.T.C.; i.e., the lateness of the season, subnormal registration of students in the University, and the absence of a considerable number of athletic leaders. It was found that many of these organizations, fraternities, etc., had made no effort to organize, and since they had no chapter houses and no non-resident members, it was impossible to get in touch with students who had previously been competing. Whenever possible, tournaments were conducted as formerly in all the standard sports. It was greatly desired that intramural sports be carried on as heretofore, since, if a year were allowed to elapse without them, all previous efforts to build them up would be lost and the work have to be started all over.

Football.—Sixteen football teams, each team representing a different company of the S.A.T.C., were organized and uniformed, and played a series of games. Two hundred and forty men participated in this sport.

Basket-ball.—Interfraternity: A schedule of 63 interfraternity games including the semi-finals and the final was arranged, and about 200 students participated in the tournament. The championship was won by the Phi Kappa Psi fraternity.

Intercollege: The college tournament had 6 teams entered, and the championship was easily won by the Medical School. It is estimated that 50 students participated.

Baseball.—Interfraternity: There were 24 teams in the interfraternity tournament, and a schedule of 60 games was arranged. The championship was won without a defeat by the Alpha Tau Omega fraternity.

Intercollege: There were 8 colleges represented in the intercollege schedule of 28 games which was won by the Law School. About 110 students participated.

THE PRESIDENT'S REPORT

Track and field events.—This work was left to the regular University track coach on account of its close relation to the development of the University teams. The following tournaments were held:

Out of doors track events

All-University meet	75 men
Freshmen and sophomore meet.....	60 men

Indoor events

Interfraternity relay	28 men
Freshmen and sophomore meet.....	60 men
All-University meet	102 men

In view of the Conference Mass Athletic Track Meet, 900 men, members of the R.O.T.C., were trained by companies for two months in the running high jump, shot-put, broad jump, low hurdles, and 100-yard dash. As it was not possible to secure a holiday in which to conduct the meet, this feature was given up for this year. An effort was made to conduct a meet on a Saturday afternoon in the latter part of May, but only about 40 men responded and were put through the trials.

Ice-hockey.—Interfraternity: There were 8 fraternity teams that participated in an elimination series of games on the University rink on Northrop Field. About 64 students participated. The final game was played on the Hippodrome Rink at the State Fair Grounds, between Alpha Delta Phi and Delta Tau Delta and won by the latter by a score of 3 to 1. All members of the University were permitted general use of the rink without charge.

Boxing.—An all-University boxing tournament was conducted at the close of the season, and participants, numbering about 30, were members of the regular boxing class in the Department of Physical Education. Championships in the following weights were decided—light-heavy, middle, welter, special, light, bantam, and feather.

Swimming.—An all-University meet was conducted in which 9 students participated. The events were 20-yard dash, 40-yard dash, 100-yard dash, plunge for distance, under water swim, 40-yard breast stroke, 40-yard back stroke, and fancy diving. Championships were awarded in each event.

Bowling.—Interfraternity: In the bowling tournament 16 teams were entered and about 90 men participated. The championship was won by the Delta Tau Delta fraternity.

Handball.—An all-University tournament was held in which 14 students participated. The championship was won by Martin Kahner, a student in the Law School.

Tennis.—All-University: An all-University tournament was conducted in which 33 men participated. The championship was won by Henry W. Norton, a junior in the College of Science, Literature, and the Arts.

Interfraternity: An interfraternity tournament was conducted in doubles, in which 16 men participated. The championship was won by the Sigma Nu fraternity.

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Sigma Delta Psi (Honor athletic fraternity).—See report of Department of Physical Education for Men.

Intramural banquet.—On Wednesday, June 11, at 6:15 p.m., the first annual intramural banquet was held in the Minnesota Union Building, and 63 Intramural M's were awarded by President Burton to members of championship teams and winners of individual events. The President emphasized the need of more ground for intramural sports, and urged a larger participation on the part of the student body in healthful exercise.

New feature.—An indoor interfraternity track relay race was conducted in February, and an interfraternity tennis tournament in May. The Interfraternity Athletic Association has voted that these shall be added to the standard championship events.

In all forms of sport that have been under the administration of the Committee it is estimated that 2,521 participated. This does not exclude duplication where students competed in two different sports, nor where men played on a college and a fraternity team at the same time, etc.

The record of the year on the whole, in view of the handicaps previously mentioned was gratifying.

AIMS OF THE COMMITTEE

May I take this occasion to state some of the aims of the Committee and needs for putting them into effect?

It is the aim of the Committee to stimulate interest in and make provisions for daily physical exercise on the part of all students and teachers. Conservation of health, symmetrical and harmonious development—the Greek ideal—and the cultivation of the instinct and desire to be active, are the objects sought. Without question, if some form of daily exercise were required of all students, and teachers as well, better health and greater academic efficiency would result. The most feasible period for such recreation would probably be at the close of the day when the intellectual powers are more or less at ebb. The Committee realizes that progress toward the ultimate realization of this aim will be a slow process, but it is bound to win in the end. Collegians are beginning to realize the value of sound physiques, kept in the best working order by wholesome daily exercise.

The Committee feels that in order to stimulate greater interest and effort in intramural sports, (1) an all-University field-day should be arranged; (2) the budget for intramural sports should be increased; (3) winter tournaments should be planned; and (4) aquatic sports on the Mississippi River should be developed.

An all-University field-day.—It is the opinion of the Committee that a day might well be set aside each year for final intramural contests and mass track meets. Other University outdoor events, such as fêtes, pageants, military reviews, etc., might well be held on this particular day. Such a day would without doubt do much towards stimulating all-University recreation and exercise.

Budget.—The expenditures for intramural sports are at present limited to the sum of \$500, which is subscribed by the Committee on Athletics. This is, of course, far too meager and limits the activities.

The Committee, after a careful consideration, has prepared the following statement of the immediate needs and the funds needed to cover them:

1. An instructor in intramural sports.....	\$1,500
An instructor in intramural sports is absolutely necessary in view of the physical welfare of the entire student body. The duties of such an instructor would be to organize teams, arrange schedules and tournaments, select staffs of umpires and referees, keep records of all games, and have general supervision of intramural sports under the immediate direction of the Director of Physical Education for Men.	
2. Building of 6 tennis courts.....	1,500
The demand for the use of courts now is greater than the supply. While the addition of six courts will not be sufficient to meet the immediate demand adequately, it would help very considerably toward providing opportunity for students to indulge in this delightful game. The suggested sites for these courts are on the main campus, in two or more groups.	
3. (a) The construction and upkeep of skating rinks on Northrop Field.....	250
(b) Construction and upkeep of toboggan slide on Northrop Field.....	200
(c) Levelling, rolling, and marking baseball, football, and hockey fields....	150
(d) Supplies: baseballs, bats, catchers' gloves, masks, basket-balls, footballs, hockey pucks, etc.	220
(e) Intramural insignia	10
(f) Fees for officials, umpires, and referees for basket-ball, baseball, football, at rate of \$1 a game.....	75
NOTE: Experience has shown that the paid official, even if the fee is small, gives better satisfaction than the volunteer.	
(g) Miscellaneous	95
NOTE: Supplies are kept under lock and key in the Department of Physical Education and issued only to the captain, manager, or other representative of the teams, who signs the receipt, and if any of the outfit issued is not returned, it is charged against the organization who fails to return same.	
4. Sodding of hockey field.....	100
This has been urgently requested. The present field is in poor condition. A large part of it in the center is not sodded, and sodding the same is necessary to remove the dust and dirt resulting from the use of the field in its present condition.	
5. Custodian	900
The duties of the custodian would be to have charge of all intramural equipment, issuing and collecting the same; also to see that all grounds and equipment are in good condition; to supervise and assist in the upkeep of baseball, football, and hockey fields.	
Grand total	\$5,000

The Committee feels that a budget of \$5,000 should be available to develop and foster outdoor sports and recreation, and to provide adequate and convenient facilities.

Winter carnival.—The University of Minnesota possesses an excellent climate for winter sports. One of our chief concerns is to stimulate a desire and provide facilities for out-of-door winter recreation. Our long cold winters spent indoors in an artificially heated, dry atmosphere, are doubtless in a large measure responsible for our respiratory disorders; and a sedentary life brings on a host of trouble.

Already, as the reports show, progress has been made in providing facilities for skating and tobogganing. The opportunities are here for practically all the winter sports that have made other places famous.

In recent years the annual winter carnival held at Dartmouth has come to be a center of interest in skiing and snowshoeing. Our campuses, particularly that of the University Farm, are adapted for such sports. Inter- and intracollegiate ski and snowshoe meets, comprising a varied program of dashes and cross country runs for both skiman and snowshoers, should be fostered. The final contests in ice and snow sports could be held in the nature of a winter carnival. Naturally such an event would stimulate interest and attract many students out of doors during the winter season.

Aquatic sports on the Mississippi River.—The Committee has had under consideration the development of aquatic sports on the Mississippi River. Since the building of the Government Dam, the river between the University and the dam provides an excellent course for canoeing and rowing in pair and six-oared barges, etc.

At Wisconsin, one of the best features of the intramural program is carried out on the water. This year, fifteen crews took part in the spring regatta.

Now that the University is to be continued throughout the year and the summer quarter will take its place with other quarters of the school year, provisions for aquatic sports should be made.

Three important questions have been raised by the President and Board of Regents relative to this project. These are: (1) Will the large amount of untreated sewage the river receives prove a menace so far as aquatic sports are concerned? (2) Can a suitable site for a boathouse and landing be procured from the Minneapolis Park Board? (3) How is the project to be financed?

(1) Regarding the first problem, that of the condition of the water—a sanitary survey of the river is under way. The request for such a survey was made to the Executive Officer of the State Board of Health and granted. The Chief of the Division of Sanitation has this exhaustive survey in hand. It will cover approximately one year. Interested in, and associated with the State Board of Health in making this survey are the United States Public Health Service and the Departments of Health of the Twin Cities. Undoubtedly the survey will result in much good. In addition to the direct benefits to be derived by the University, the survey should awaken an interest on the part of the people of the Twin Cities in correcting the present evil. It is a noticeable fact that many of our foremost sanitarians are of the opinion that only in special cases is the disposal of sewage by dilution within the waters of our inland streams and lakes justifiable.

As soon as the survey is completed and the recommendation received, they will be submitted to the President and Board of Regents.

(2) Individual members of the Park Board have been consulted with a view of procuring a permanent site for a boathouse and landing. Those interviewed have expressed interest in the plans and have stated that they

could see no objections to granting the site. That no formal action has been taken by the Park Board is due to the fact that no request for an exact site has been made.

With a view of selecting a site, the following committee, Messrs. Hunter, Forsythe, Cooke, and Sundwall, went over the grounds. It was decided to recommend to the President and Board of Regents that they petition the Park Board for a strip of land, 500 feet long and 200 feet wide at the foot of Union Street. This will provide ample space for future needs.

The plans for a boathouse have been prepared by Mr. James H. Forsythe, Assistant Professor of Architecture. In submitting these plans, the following comments were made by him:

There have been built within recent years two important collegiate boathouses, namely the Weld Boat House for Harvard University built in 1907, and the Yale Boat Club House at New Haven, Connecticut, built in 1911. These two buildings are practically alike and are about 75 by 150 feet in size and contain provision for the storage of boats on the lower floor. Locker and shower-bath space is provided on the second floor, together with a club or lounging room about 25 by 50 feet.

The problem here is a very similar one with the exception that provision must be made also for women. In my sketches I have therefore provided separate outside entrances to the locker space for men and women. The building which we have in mind would cost approximately \$35,000 or \$45,000 at present prices of building. It should of course be built of permanent materials similar in architectural character to the buildings now on the new campus. It should be located on the river bank probably on the extension of Union Street. This location will not then interfere with the use of the Athletic Field on the main axis of the new campus.

(3) Financing this project is, of course, a most important one. At present no provisions are made for such a building. An important problem now confronting the Committee is, shall it devote its efforts to securing a cheaper temporary structure for boathouse and landing purposes, or shall it await the erection of a permanent building such as Mr. Forsythe has planned? The Committee feels that the latter is preferable.

No definite promise of financial help for this purpose can be obtained from the athletic fund, as the Committee having this in charge is primarily concerned with the development of the new athletic field.

It has been proposed that small pamphlets containing the plans for development of aquatic sports be prepared and circulated among alumni and friends with a view of obtaining subscriptions.

Respectfully submitted,

JOHN SUNDWALL, *Chairman*

THE MILITARY DEPARTMENT

To the President of the University:

SIR: I submit herewith a brief report of the Military Department for the year 1918-19.

Owing to the installation of a unit of the Student Army Training Corps in October, 1918, the Reserve Officers' Training Corps was not organized at the opening of the school year. It was officially started February 10, 1919, with the assignment and arrival of Captain Allen T. Newman, Infantry, U. S. A.

The first week was devoted entirely to organization, actual instruction being started February 17, 1919. The work during the remainder of the second quarter; and to a considerable extent also during the third quarter, was conducted under certain handicaps more or less inevitable under the hurried organization that was necessary, and the lack of time to prepare in advance schedules that would coordinate with the work of the different colleges and schools of the institution. Another difficulty encountered at the beginning was the lack of equipment and instructor personnel. The progress made by the students in this Department, while not altogether satisfactory, was probably all that could reasonably be expected under the conditions that obtained.

The personnel detailed by the War Department, and on duty at the close of the school year was as follows: Col. F. H. Burton, Inf. U. S. A., Professor; Lt. Col. West C. Jacobs, C. A. C., Assistant Professor (to be in charge of C. A. C. unit); Major Jere Baxter, Inf. U. S. A., Assistant Professor; Capt. A. T. Newman, Inf. U. S. A., Assistant Professor; Capt. A. E. Clark, Inf. U. S. A., Assistant Professor; 1st Lieut. H. C. Bertelsen, Inf. U. S. A., Assistant Professor (acting quartermaster); 2nd Lieut. E. A. Nuoffer, Inf. U. S. A., Assistant Professor; Reg. Comsy. Sgt. Joseph Havlicek, retired, Instructor (clerk); 1st Sgt. Ingvald M. Johnson, Inf., Instructor; Sgt. Frank Crain, Inf., Instructor; Sgt. Elden R. Fossey, Inf., Instructor; Sgt. Herbert Kettle, Inf., Instructor; Sgt. William G. Palms, Inf., Instructor.

It is extremely doubtful if the number of commissioned officers available next year will be as large as at present. Under the provisions of the Army Appropriation Act recently enacted by Congress, it will be necessary to discharge all officers holding temporary commissions on or before September 30, 1919. This will necessitate the discharge of Captains Newman and Clark and Lieutenants Bertelsen and Nuoffer. Information is at hand from the Committee on Education and Special Training that every effort will be made to replace, with regular army officers, temporary officers discharged; but it is doubtful if the number of available officers of the regular establishment will be sufficient to fill all the vacancies.

THE PRESIDENT'S REPORT

The number of students enrolled in the Military Department and records of the same follow:

Total number enrolled.....			1,037
Registration cancelled		78	
Special gymnasium work substituted on account of physical disqualifications		18	
Excused from R.O.T.C. for Army or other service.....		86	
Completed course			
Grade A	557		
Grade B	72		
Grade C	6		
Grade D	3		
Grade E	1		
Grade I	159		
Grade F	57		
		855	182
			1,037

Of the above number present at the close of the year, the distribution was as follows:

Basic course	837
Advanced course	18
Total	855

In the Advanced Course the following students graduated from the University and satisfactorily completed their military course:

Theodore Sander, Jr. (Engineer)
Edward H. Coe (Engineer)
Russell L. Strang (Science, Literature, and the Arts)
Benjamin Gingold (Medical)

The first three have been recommended for appointment as Second Lieutenants in the Infantry Section of the Officers' Reserve Corps. Student Gingold did not take the final physical examination nor complete his application for appointment, therefore no action has been taken in his case.

During the last week of the course, all students present were given the Army Intelligence Examination, sometimes referred to as the Army Psychology Test. In the test the total possible number of points is 212 and the ratings are graded as follows:

A, 135 to 212; B, 105 to 134; C, 75 to 104; C, 45 to 74; C, 25 to 44; D, 15 to 24; D, 0 to 14.

The result of the tests follows:

A	363
B	218
C	41
C	3
Total	625

THE MILITARY DEPARTMENT

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The average points attained, arranged by colleges, was as follows:

COLLEGE	FRESHMEN	SOPHOMORES	GENERAL AVERAGE
Agriculture	136	136	136
Chemistry	140	142	141
Dentistry	123	120	121½
Engineering			
Architectural	141	131	138
Civil	140	147	142
Electrical	142	142	142
General (3 men only).....	155	...	155
Mechanical	152	134	145
Forestry	121	128	122½
Mines	132	137	132½
Pharmacy	140	121	130½
Pre-Legal	123	121	122
Pre-Medic	137	148	141
Science, Literature, and the Arts....	144	146	145
General average.....	139.7	137.2	138.9

Report of individual rating of each student has been made to Dean of each college concerned.

The value of equipment issued by the War Department for use of the R.O.T.C. is approximately as follows:

Clothing	\$46,970.00
Ordnance	74,680.00
Total	\$121,650.00

The present plans provide that uniforms issued to members of the R.O.T.C. will be retained by them after one year of use. This will result in a governmental allowance, or expenditure, of approximately the following for each student:

Clothing	\$43.48
Depreciation in value of arms and equipment.....	9.00
Target allowance	10.00
Total	\$62.48

To this is added, in case of students taking the advanced course, payment of commutation of rations of 40 cents per day, or \$12 per month.

Respectfully submitted,

F. H. BURTON,
Col. Inf. U. S. A., Commandant

THE GEOLOGICAL SURVEY

To the President of the University:

SIR: I submit herewith my report as Director for the period from August 1, 1918, to June 30, 1919.

Introduction.—The Survey was allotted \$16,500 for the biennial period begun August 1, 1917. The work of the Survey was carried on according to the plan outlined in previous reports to the President of the University and published in the annual reports of the President. At the end of the fiscal year, 1919, there were under investigation, or completed, the following problems:

(1) Detailed survey of the Mesabi iron range from Mesaba station to Birch Lake, by Professor F. F. Grout and Assistant Professor T. M. Broderick. Map completed and available for distribution; report in press, to be published as *Bulletin 17*.

This part of the iron range has produced practically no ore. The iron-bearing rock, which carries from 20 to 30 per cent iron, is not usable in its present state, but some of it can be concentrated to a very high-grade product by magnetic separation. Only certain beds are suited to this process, while others interlayered with them are not workable. The mapping of the range and separation of the beds has shown the position and character of the workable beds. The concentrate of ore from these beds is a very high-grade iron ore and carries little phosphorus, being superior probably to any iron ore in the United States. A small plant in Duluth was making a product from these ores during the war, which was used for the manufacture of armor-piercing shells. The ore competes with ores imported from Chile and from Europe. The supplies of this particular class of iron ore in the United States are very small. While the project is still in a more or less experimental stage, and it is uncertain whether these ores can compete with foreign low-phosphorus ores in normal times, the situation with regard to them is distinctly hopeful. The future of these ores is very vital to the prosperity of northern Minnesota, for if they are workable profitably under normal conditions, the life of the iron-mining industry in Minnesota will probably be doubled, owing to the enormous tonnage available.

(2) The detailed survey of the Cuyuna range, in coöperation with the United States Geological Survey, was continued. Mr. A. W. Johnston and Mr. Frank Krey, of the Minnesota Geological Survey, were engaged in this work. Mr. E. C. Harder, who represented the United States Geological Survey in the mapping of the Cuyuna range, was called to Washington in the spring of 1918 to serve on the Shipping Board. A preliminary report, with maps showing the position of the ore beds, is issued and on sale by the Librarian of the University as *Bulletin 15*.

(3) Detailed study of manganiferous ore deposits. Nearly a million tons of manganiferous ores are used annually in the United States, and in normal times almost all of it is imported from Russia, Brazil, and

India. The situation arising from the shortage in shipping has interfered seriously with imports from Brazil and India. Several districts in the United States that under normal conditions were not workable for manganese have been opened, so that we now supply a very large part of our requirements. The Minnesota ores are too low grade to bring the highest prices, or to be used in the most desirable practice. The Minnesota Geological Survey has been coöperating with the Minnesota School of Mines Experiment Station and with the United States Bureau of Mines in experimental work on the beneficiation of these ores. Mr. A. G. Mayers was employed during the summer of 1918 on laboratory work, and Mr. Frank Krey on geological field work connected with this problem. The results obtained are promising, but inconclusive. If the processes are equally effective in practice on a large scale, our manganiferous ores will become an increasingly important asset to the wealth of Minnesota, since the tonnage of low-grade manganiferous material on the Cuyuna range is large.

(4) Investigation of molding sands for iron and brass foundries, and other molding sands near the Twin Cities, by Mr. G. N. Knapp, assisted in the laboratory by Mr. M. G. Hanson, Mr. H. K. Armstrong, and Mr. R. V. Johnson. There are in Minneapolis and St. Paul 34 foundries, of which 9 confine their work to founding gray iron, 6 to founding brass, bronze, aluminum, and their alloys, while the remaining 19 are founding two or more of the metals, including various grades of steel. The increased demand within the past few years for a higher grade of casting in all lines, especially of malleable iron, steel casting, and brass, led to a great expansion of the business in the Twin Cities. This demand for a higher-grade product has brought home to the founders the real importance of the problem of a better sand; for it is well recognized that the grade of the cast product depends almost as much on the quality of the sand forming the mold into which the liquid is poured as it does on the composition of the metal.

There are many carloads of molding sand delivered in the Twin Cities by railroads each year. A survey disclosed the fact that many foundries are without laboratory facilities to test their molding sands, and accordingly when confronted with the problem of obtaining a better grade of sand, have sought the same in localities that were known to be producing castings of the desired quality and finish. This practice has led to the importation of sand from remote points, such as those in Missouri, Illinois, Kentucky, Ohio, and New York, with prices ranging from \$10 to \$15 per ton for sand that at home was worth but 25 and 50 cents per ton.

All the founders were eager to obtain any information as to the location of good sands, and gladly coöperated with the Survey in making tests and in other ways. Altogether 150 samples were collected, about one third of these being samples of sands in actual use in the local foundries, while the balance are samples collected in the field, giving promise of value.

The clay content on which the bond largely depends has been determined in most of these samples, and screen analysis has been made of many of them. A search for new sources of foundry sands is well under way. The sands found, judging from the laboratory tests thus far completed, give promise of meeting the requirements of the trade fully as well as the sands that are at present being imported.

(5) The survey of the surface formations and agricultural conditions of Minnesota, by Frank Leverett and F. W. Sardeson, is completed and the map, in three large sheets, has been published. One of these sheets, treating the northwest part of the State, may be found in a pocket in the back of *Bulletin* 12 of the Survey; another, treating the northeast part of Minnesota, is contained in a pocket attached to *Bulletin* 13. The third sheet, treating the south half of the State, and completing the series, is issued and on sale by the Librarian of the University. It will be distributed also in the pocket in *Bulletin* 14, which is now on sale by the Librarian. Arrangements have been made so that these maps may be purchased in large quantities at cost of printing, by agricultural and colonization companies.

(6) A survey of the peat deposits of Minnesota, by E. K. Soper, is completed. The report is issued this year as *Bulletin* 16, and is on sale by the Librarian of the University for one dollar per copy.

(7) Field work has been begun mapping the pegmatitic area in granite in northern St. Louis County.

(8) Field work was begun mapping the iron formations of the Mesabi, running west of Mesaba station.

In addition to the more comprehensive investigations outlined above, many inquiries are received in the offices of the Survey concerning the geological structure in various places, by those who contemplate drilling for water or ore, and numerous materials are forwarded from various localities in the state to be examined to determine their availability for various economic purposes.

Respectfully submitted,

W. H. EMMONS, *Director*

THE ZOOLOGICAL SURVEY AND MUSEUM

To the President of the University:

SIR: I have the honor to submit the following report of the condition and the activities of the Zoological Survey and Museum for the period included between the dates October 31, 1918, and July 1, 1919. My last report terminated with November 1, 1918. Previous reports have considered the Zoological Survey and Museum as activities of the former Geological and Natural History Survey of Minnesota, but a recent decision has established the present status of this work as a separate department of the General University, as investigation shows that the Geological and Natural History Survey was discontinued by an act of the State Legislature some years ago, altho this fact was not generally recognized until of late.

MUSEUM

Exhibits.—The chief event since the last report has been the completion of the Itasca Park beaver group about April 1. With the exception of the background painting, the entire work in all its details has been done by the museum taxidermist, Mr. Jenness Richardson, some fifteen months being required for its construction. The background was painted by Mr. Charles A. Corwin of Chicago, with necessary additions and changes by Mr. H. M. Rubens of Minneapolis at the time the group was finally assembled. This group may be considered one of the best, if not the best, of its kind in this country, and has already attracted the attention and received the praise of a large number of visitors both from the city and abroad. It has been the special interest and admiration of many groups of children from the schools of the city.

Several small bird groups have been installed in separate cases and are on exhibition on the third floor of the building. They are designed to show the nesting habits of the smaller species of our native birds. The exhibits recently completed contain the sparrow hawk, scarlet tanager, and blackburnian warbler. A group nearly finished will depict the manner of nesting of the double-crested cormorant on Gull Rock, Lake of the Woods. The material for these groups was collected in the summer of 1917.

It is planned to construct during the coming year a large group, the size of the beaver group, showing the marsh and aquatic bird life of one of the most famous wild bird resorts in our state, Heron Lake. This will make possible the display in their natural environment of a large number of birds little known to most people, even to many bird students. Also it will serve to perpetuate in lasting form another characteristic and widely known locality in Minnesota. This is one of the secondary, but by no means inconsiderable, features of these large habitat groups, in which as close an adherence as possible to reality is maintained.

Donations.—Donations of material for the Museum have not been numerous and have not been especially encouraged for reasons stated in the last report.

Specimens have been received as follows: one whistling swan in the flesh from Professor W. A. Riley, Farm School; one young beaver in the flesh from Mr. J. A. Stillwell, Itasca Park; one albino pocket gopher in the flesh from Mr. H. J. Johnson, LeSueur Center; five nestling snow geese and one young black duck in the flesh from Mr. H. J. Jaeger, Owatonna; a ruby-throated hummingbird in the flesh from Miss Lulu E. Wagner, Moorhead; and two mounted magpies, taken in Minnesota, from Mr. P. O. Fryklund, Badger.

Publications.—The only publications appearing as from the Museum have been several bird articles in periodicals and a small booklet entitled *A Review of the Ornithology of Minnesota* by the Curator. The latter was issued in May, and the expense of publication was born by the Research Committee of the Graduate School of the University. Another paper of some length on the *Water Birds of Minnesota; Past and Present* has been prepared by the Curator and will appear shortly in the biennial report of the Commissioner of Game and Fish.

Photography.—Very little photographic material has been added during the last eight months. A few lantern slides from negatives on hand and a few new negatives for lecture purposes is about all.

Lectures.—Seven illustrated bird lectures have been given in various places by the Curator, and two field trips conducted with pupils from Northrop School.

Attendance.—The attendance at the Museum has steadily increased and a considerable number of visitors from outside the city are attracted by the exhibits. Every possible attention is shown to all comers, and whenever opportunity offers groups and individuals are accompanied through the building and the exhibits explained. It is hoped that a plan to have the building open and warmed, and to have a competent attendant present, during the coming winter may be realized. This will attract to the Museum many who can not come under present conditions.

Correspondence.—The usual correspondence with residents in various parts of the state and others in regard to natural history matters has been conducted from the Museum.

Live beavers.—The two live beavers are still in the outside pool by the building, are doing well, and continue to attract as much attention as formerly.

FIELD WORK

The only important field work done during the period covered by this report was a trip to Heron Lake to collect material for the large group referred to above. This work was done mainly in the month of June by Mr. Richardson with some assistance from the Curator. The courteous coöperation of Mr. Avery, Commissioner of Game and Fish, was accorded us in this work. The material obtained comprised some

seventy bird skins, nests and eggs, and the needed accessories, all of which were shipped to the Museum and there await the beginning of construction in September.

The field work done in connection with the University class in Ornithology, conducted by the Curator, resulted as usual in securing a considerable number of records for the Museum files.

FINANCES

As heretofore, the work of the Museum during the past eight months has been carried on with donated funds, aside from the sum of \$200 made available by the University as a Storehouse budget. Mr. J. F. Bell has continued his generous contribution of \$50 monthly, and \$1,264.86 has been added from another source. The chief expenses have been the salary of the taxidermist—\$125 a month—and the completion of the beaver group. The Curator dispensed with office help during this period. The balance remaining in the Museum Donation Fund on June 30, 1919, was \$237.31, deposited in the First and Security National Bank to the credit of Thos. S. Roberts, Trustee.

The expense of the Heron Lake group, aside from the taxidermist salary, has been subscribed by several business men of Minneapolis who have already generously aided the work of the Museum in the past.

The recent allotment to the Zoological Survey and Museum by the University of the sum of \$5,500 for maintenance and salaries during the coming year is of importance in more ways than one. It puts the work for the first time on an official basis, keeps faith with the men who have supported the Museum up to the present time, and relieves numerous trying embarrassments.

Respectfully submitted,

THOMAS S. ROBERTS, *Curator*

THE UNIVERSITY LIBRARY

To the President of the University:

SIR: I submit herewith the report of the University Library for the period of eleven months ending June 30, 1919:

The S.A.T.C.—As in every department of the University, the Library was greatly affected by the conditions incident to the work of the S.A.T.C. The requirements of the work of the Corps made any normal use of the Library impossible, and reading was necessarily very much restricted. The system of supervised study rendered it necessary to open additional reading-rooms in Folwell Hall, and in the Exposition Building. In addition, each college had its own rooms where its students did their work under supervision.

For the War Aims Course, large numbers of duplicates, in a few cases from two to four hundred, were purchased and installed in the various reading-rooms.

After the demobilization of the Corps, we were able to sell most of the duplicates at a fair price.

A special reading-room, provided with the necessary reserve books, was set aside for the instructors in the course.

Circulation of the books.—Despite the fact that, during the first half of the year, the amount of reading was greatly below the normal, the figures showing the recorded use of books—and it must always be remembered that the record covers only a fraction of the total use—is not seriously below the average of the last five years.

The figures are:

	HOME USE	OVERNIGHT USE	READING- ROOM	EXTENSION	TOTAL
1918-19	22,492	7,895	104,201	134	134,722
Average 1913-14—1917-18	21,756	18,113	130,696		170,623

In one particular, the home use of books, the figures are actually larger than the average. This is in every way most gratifying. The hurried use of volumes in the reading-room, in preparation for definitely assigned work, can never give the acquaintance and friendship of books which is a large element in true culture in the making of the educated man. The student of to-day doubtless reads more pages in the course of the year than did the generation in our colleges twenty-five years ago, but there is small evidence that our universities are turning out a larger proportion of men and women to whom books are something more than repositories of facts.

The efforts that we have been making during recent years to popularize the home use of books—necessarily limited tho they have been—have, I believe, done something to create in the minds of a few students, at least, a love for reading for its own sake.

In our new building we are planning to provide for a room, similar to the beautiful and very successful Farnsworth Memorial in the Widener Library at Harvard, where the student may browse among good editions of the books, the knowledge of which is a part of the equipment of every cultivated man and woman; and where he will have the opportunity, in an atmosphere of quiet and refinement, to become intimate with them.

Inter-library loans.—The system of comity, by virtue of which a student, wherever he may be, can have borrowed for his use books not locally available, enables us to draw on the library resources of the entire country. Many investigations and phases of research which would otherwise be impossible of completion without expensive trips to the libraries having the books needed, are thus facilitated. Our acknowledgments are due for courtesies of this nature to the libraries of Bryn Mawr, Cornell, Hartford Theological Seminary, Harvard, Hennepin County Medical Society, the Office of the Surgeon General of the Army, the Library of Congress, the Mayo Clinic, the Missouri Botanic Garden, the Public Library of Minneapolis, and the Universities of Chicago, Illinois, Michigan, and Wisconsin.

Accessions.—The number of volumes added to the Library during the year is 14,855. Of these, 1,564 are additions to the Agricultural Library, and 673 to the Law Library.

The expenditures of the year have been as follows:

	BOOKS	PERIODICALS	BINDING	TOTALS
General Library	\$17,791.47	\$3,201.28	\$3,091.79	\$24,084.54
Law Library	2,610.55	123.05	134.70	2,868.30
Agricultural Library.....	1,938.03	1,016.52	597.40	3,551.95
Crookston	324.47	.....	44.00	368.47
Morris	222.35	.....	31.10	253.45
Grand total				\$31,126.71

The importation of foreign books has, owing to conditions incident to the war, been very difficult, but we have nevertheless continued to receive regular shipments from England and France, and during the later months from the Scandinavian countries.

Through the agency of a committee of the American Library Association, of which Dr. M. L. Raney, the librarian of Johns Hopkins University, was the secretary, an arrangement was concluded with the British Foreign Office and our own Department of State, by virtue of which we have been able to secure, during the entire year, such periodical publications on our subscription list as were published within the territory of the Central Powers. This service had been interrupted by action of the British Government about the middle of the year 1916. Dr. Raney was obliged to make two trips to Europe on behalf of the importing libraries, and finally was able to secure permission to import through agents in the Hague and Geneva.

THE PRESIDENT'S REPORT

The break in our files for the period, roughly from July 1, 1916, to December 31, 1917, is one that it will be very difficult to fill. The numbers of copies of each issue published of these journals was rigidly limited; and we have recently been informed that a fire in a warehouse in Leipzig, where were stored a large stock of these periodicals which had been laid aside to fill the orders of American customers, destroyed a large part of the stock. The adjustment of the accounts involved will be of great difficulty, and the attempt to secure volumes to replace those lost will entail a large extra expense.

The most notable gift of the year was the donation by the Swedish government of a set, almost complete, of their parliamentary papers from 1866 to 1917. The Library already possesses a similar set of the publications of the Norwegian Government and negotiations are now under way to secure the papers of the Danish Rigsdag.

Binding.—The expenditures for binding were distributed as follows:

	CLOTH		COWHIDE		MOROCCO		PAMPHLETS	
	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.
General Library.....	2,782	\$2,250.23	391	\$477.46	251	\$329.25	305	\$34.85
Law Library.....	164	134.70						
Agricultural Library...	440	407.35	121	130.70	33	42.70	166	16.65
Crookston.....	32	34.90			8	9.10		
Morris.....	30	31.10						

Of this total, \$3,587.24 was spent on new books and \$311.75 on re-binding.

The Library catalog.—The work of the cataloging staff has been greatly hampered by reason of the fact that, because of the small salary we were able to offer, it has not been possible to secure an assistant to fill the revisor's position. A double duty has, in consequence, been thrown on Miss Currie and the volume of work turned out has been reduced.

The accessions of the year have been cataloged, but no progress has been made on the arrears of former years.

The statistics of the ten months' work follow:

	CENTRAL CATALOGS	DEPARTMENTAL CATALOGS
Titles cataloged.....	5,426	900
Volumes cataloged.....	7,708	2,383
Printed cards added.....	14,856	2,862
Typewritten cards added.....	6,698	718
Printed shelf list cards added.....	2,605	439
Typewritten shelf list cards added.....	1,918	382
Volumes added.....	3,759	856
Total volumes recorded.....		230,599

An estimate recently made of the books which are not included in our catalog, including those forming a part of the Library when the catalog was begun in 1907 and the uncataloged portion of the Monod Library, shows that there are approximately 20,000 volumes of which we have no adequate record. The addition to our cataloging staff allowed for the coming year will enable us to undertake the record of these books.

The new building.—The year just past is made notable in the history of the Library by the passage by the Legislature of an appropriation enabling us to draw plans for an adequate and permanent library building, for the construction of which the sum of approximately \$1,250,000 is included in the amount allowed for the ten years' building program of the University.

Preliminary plans have already been drawn. These will be studied in every possible detail during the coming year. Already existing university library buildings have been visited, carefully examined, and our plans checked thereby. We shall keep in close touch with those who are at work on plans for similar buildings at Yale University and at the University of Illinois.

The planning of a building such as this, involving as it does the welfare of the entire institution for an indefinite future, is a problem of the largest moment. We must get a vision, if we can, of what are the probable developments, not of ten or twenty years, but of generations.

We must build reading-rooms that will be large enough for a much greater institution, book stacks capable of almost indefinite expansion, seminar rooms in sufficient numbers to provide facilities for advanced study at a time when, as it seems inevitable, the responsibility for investigation and research shall fall more heavily on the shoulders of American institutions than before the war had exhausted the resources and diverted the energies of Europe. We can not afford to see things in a small way or to plan for what is within our present horizon.

The present building.—Altho the bright prospect before us may give an added zest to the task, the problem of the administration of the Library in its present strait-jacket, with any degree of satisfaction to its clientele, is of the greatest difficulty. Our reading-room capacity is seriously limited, and the necessity for providing additional storage space for more books and the expansion of the services that are properly required of us have compelled us to assign to other uses the last remaining rooms where an advanced student could work, in relative retirement, with his books about him. Already we have begun to box and store many of our duplicates against the time when the new building shall be completed. Before that time shall have come it will be inevitable that we must put in storage many of our less-used books and sets.

May I take this opportunity of thanking my colleagues for their continued forbearance with a service given them by the Library, the inadequacy of which is fully recognized by the Library staff.

Library coöperation.—During the last twenty years there has been an increasing recognition of the folly, even for the larger libraries, to attempt unrestricted collection of books. The steadily increasing volume of publications, the rise in cost of the rarer books and sets, the demands made

on the limited resources of individual collections for the purchase of books of the moment, have compelled the recognition of the principle of specialization in purchase.

It would be a waste of public money, for example, to duplicate the splendid collection of books on the fine arts in the Athenaeum Library or the collections in local history in the Library of the State Historical Society. In recognition of this fact, the librarians of the Twin Cities have agreed to accept certain fields as their own and not to recommend intensive purchase in lines in which some other library is specializing. Conferences of the institutions concerned in this agreement, interrupted by the war, have been resumed, and it is hoped that still further agreements will be reached.

As a result of what has already been done, the Public Library of Minneapolis and the State Historical Society have already transferred to the University a number of books and sets which fall within our field. It is hoped that later similar arrangements may be made with local libraries in other cities of the state, to turn over to us, if necessary as an indefinite loan, books unsuited to their needs, but which should be available in some large collection within the state.

The University Library should regard itself, it seems to me, as, in a sense, a reservoir library for the state. Our function and our field is of necessity broader than any other, and we are neglecting an opportunity for signal service to the state if we fail to recognize the implications of that fact. The service that we are giving to students and to professional men and women outside of the University circles, while it is steadily increasing, is far less than it should be.

Our Medical Library should, for example, serve the physicians of the state in the same way that the Surgeon General's Library serves those of the nation; the engineering and mining interests should feel at liberty to call on us for such services as we can give them; serious students of every kind should feel that they have a right to secure from the University the books that they need, with no other expense than the payment of transportation charges in both directions. As a rule these loans should be made through their local library, but when this is impossible, we should deal directly with the individual.

Exchange and sale of publications.—During the year, the Library has distributed to exchanging institutions the following scientific publications of the University:

- Agricultural Experiment Station Bulletins* nos. 175-180
- Current Problems Series* nos. 10, 11
- Studies in the Biological Sciences* no. 3
- Studies in Language and Literature* nos. 6, 7
- School of Mines Experiment Station Bulletin* no. 5
- Geological Survey Bulletin* nos. 14, 15, 16
- Doctors' dissertations, 4
- President's Report, 1917-18*
- Regent's Report, 1916-18*

THE ACADEMIC FRATERNITIES

To the President of the University:

SIR: I herewith submit my report as President of the Interfraternity Council for the year ending July 31, 1919.

Under the conditions existing at the opening of the academic year 1918-19 it was impossible for the fraternities to conduct their affairs under official supervision. Therefore the rules for fraternity organization fell into abeyance until the opening of the second quarter, since which time they have been rigidly enforced.

By vote of the Interfraternity Council and with the affirmation of the various chapters, the rule governing pledging was changed so that no man may be pledged until he has been a regularly matriculated student of the University for 15 days.

Despite the handicaps under which many of the fraternities have labored during the past year, the majority of them have insisted upon a higher standard of scholarship as the chief prerequisite for initiation.

Candidates for initiation in 1918-19 must have a grade of pass or better in 75 per cent of their studies (no man eligible unless carrying 11 hours' or more work). The following table shows the number of men pledged, the number eligible for initiation, those ineligible, and the percentage of ineligibles.

FRATERNITIES	TOTAL PLEGGED	ELIGIBLE	NOT ELIGIBLE	PER CENT NOT ELIGIBLE
Acacia	11	10	1	9.
Alpha Delta Phi	5	5	0	00.
Alpha Sigma Phi	9	9	0	00.
Alpha Tau Omega	6	6	0	00.
Beta Theta Pi	3	3	0	00.
Chi Psi	5	5	0	00.
Delta Chi	17	15	2	11.66
Delta Kappa Epsilon	4	3	1	25.
Delta Tau Delta	13	10	3	23.07
Delta Upsilon	7	7	0	00.
Kappa Sigma	11	7	4	36.36
Phi Delta Theta	4	4	0	00.
Phi Gamma Delta	11	8	3	27.27
Phi Kappa Psi	4	1	3	75.
Phi Kappa Sigma	8	6	2	25.
Phi Sigma Kappa	6	3	3	50.
Psi Upsilon	8	6	2	25.
Sigma Alpha Epsilon	3	2	1	33.33
Sigma Chi	8	8	0	00.
Sigma Nu	15	11	4	26.66
Sigma Phi Epsilon	13	11	2	15.38
Tau Kappa Epsilon	16	16	0	00.
Theta Delta Chi* .....	.....	.....	.....	.....
Zeta Psi	5	5	0	00.
	192	161	31	16.14

* No initiates recorded.

Respectfully submitted,

JAMES DAVIES, *President*

THE GENERAL ALUMNI ASSOCIATION

To the President of the University:

SIR: Since the previous report of the General Alumni Association, several matters of unusual interest have engaged the attention of our Board of Directors. Chief among these was the attempt to secure the location of the State Soldiers' Memorial upon the University campus. As you know, this failed of realization, tho it is to be noted that the proposition put forward by the alumni was approved by a State Commission appointed by the Governor to consider such matters.

We are convinced, however, that the alumni must, some day, provide for some sort of memorial to the alumni and former students who served in the great war, to be located upon the University campus. It is, we believe, generally conceded that this should take the form of a campanile as proposed in connection with the state memorial.

The Association has also been engaged in a determined effort to improve the service given the University and alumni through its official publication, the *Alumni Weekly*. Real progress has been made in this respect and the Association acknowledges with gratitude the gift of \$1,000 by Mr. Todd W. Lewis, of this city, to be used during the year in improving the *Weekly*.

The alumni note with pleasure what is being done by the University towards improving the general appearance of the campus. We regret that a lack of funds has prevented the carrying out of the complete program submitted by the Alumni Committee on Grounds and Buildings and approved by the Board of Regents.

The question of issuing an alumni directory has been under consideration for some months. The financing of this directory has become a burden which our Association is no longer able to bear as it has from the beginning. We are pleased to have the University assume this responsibility, particularly as our Association is to be called upon to prepare copy and handle the details of its publication.

We feel that it would not be out of place at this time again to call attention to the fact that our organization exists solely for the sake of service it can render the University, and we are always glad to be called upon for any service that it is in our power to give.

Respectfully submitted,

E. B. JOHNSON, *Secretary*

THE REPORT OF THE REGISTRAR

To the President of the University:

SIR: I submit herewith a report on the work of the Registrar's office for the year 1918-19.

Entrance requirements.—There are just four modifications to be recorded:

1. S.A.T.C. (temporary): In the fall of 1918 it was possible for a student to enter a certain college of the University on the basis of a high-school diploma, without reference to the distribution of the subjects taken so far as group requirements are concerned. When the S.A.T.C. was organized many of these students desired to take war program courses instead of the professional course originally selected, and it seemed proper that they be allowed to do so, even if this involved their taking subjects in the University which under the fixed requirements of the several colleges would not be open to them. To meet this situation the following action was taken by the Administrative Committee and later ratified by the Senate:

Voted that students who are graduates of approved high-school courses may enter S.A.T.C. war programs for which they have met the prerequisites.

When the S.A.T.C. was demobilized, a number of the students who had been doing war program work successfully desired to change from the college of their original choice, and in some cases were not qualified on their preparatory records for such transfer. To take care of these cases the Administrative Committee took the following action which was later ratified by the Senate:

Transferring of S.A.T.C. men to regular collegiate courses when credentials do not satisfy technical requirements: Voted that without creating a precedent for the future, students of the S.A.T.C. be admitted to the colleges of their choice at the beginning of the second quarter, subject to their meeting the prerequisites of the subjects selected. Voted that students transferring from the S.A.T.C. of other colleges be admitted here if coming from recognized institutions and that credits earned in war program courses elsewhere be recognized here, provided such credits are counted toward a degree by the sending institution.

2. College of Pharmacy: Heretofore students could enter this College on a high-school diploma without reference to the content of the preparatory work. Beginning with October, 1919, all candidates for entrance must meet practically the same requirements as obtain for Liberal Arts, Engineering, etc., these requirements being as follows:

- a. English, four units; or English, three units, and a foreign language, two units.
- b. Mathematics: elementary algebra, one unit; plane geometry, one unit.
- c. Latin, one unit.
- d. Enough additional work to make in all fifteen units of which not more than four may be in Group F.

3. School of Mines: This School has abandoned its requirement of higher algebra and solid geometry, but applicants are urged to secure preparation in these studies.

4. School of Chemistry: This School formerly required higher algebra for admission but has now discontinued it. Applicants are urged, however, to be prepared in the subject in order to avoid complications in the college program.

Entrance subjects.—From time to time there is considerable pressure on the part of certain school superintendents for the acceptance by the University of non-standard subjects in the standard-subject groups. Sociology and general science may be taken as illustrations. These subjects at the present time are not included in the list printed by the University, but may be counted towards entrance if included in the Vocational and Miscellaneous group known as Group F.

By agreement between the Committee representing the superintendents of the state and the University Committee it is understood that when a new subject of the so-called "standard" variety reaches the period of general acceptance throughout the state and is sufficiently standardized to justify an examination in it by the State Board of Education, it may then be accepted towards admission as a standard subject. No embarrassments will result if superintendents will keep this arrangement in mind in advising students with regard to the planning of their courses for entrance to the University.

Assistant Registrar.—Mr. W. L. Harris, B.A., Park College, M.A., University of Kansas, formerly Registrar and Instructor at Huron College later in the Department of Statistics for the Labor Bureau, assumes this position July 1. He comes well prepared for the work and will have charge of the Division of Registration and Records.

Statistician.—Miss Franc Potter, B.A. '93, M.A. '95, formerly Editor at the University, later with the State Historical Society, has been secured to take charge of the statistical work of this office.

Her duties will embrace the compilation of Faculty records, statistics of registration and graduation, material for the Annual Register, the Bulletin of General Information, the University Address Book, and the supervision of all printed matter issued by this office.

Accredited schools and colleges.—Because of the S.A.T.C. and the resulting disturbance of the fixed order of things, the Committee on the Relation of the University to other Institutions was unable to make the usual number of inspections of preparatory and collegiate schools. The only change to record is the placing on the accredited list of the Cathedral High School, Winona.

Comparative standings of high schools.—Inasmuch as regrets from a number of sources have been expressed that publicity has been given to the comparative showings of the respective high schools as regards the dropping of entrants, the Administrative Committee, with the approval of the Senate, has voted that such publication be discontinued.

Enrollment.—For tables and comments see pages 47 to 66.

Respectfully submitted,

E. B. PIERCE, Registrar

THE UNIVERSITY HEALTH SERVICE

To the President of the University:

SIR: Since the year 1918-19 was the first year of the Health Service in the University of Minnesota, in submitting a report on the year's work, may I be permitted to include also a brief statement of the aims, activities, organization, and anticipated development of the Service.

Aims.—It is the aim of the University Health Service to help each student entering the University of Minnesota to possess a healthy, vigorous, active, and harmoniously developed body; and to aid him in maintaining a high degree of health and vigor not only through the years of his university work but also in later years.

The Health Service exists to prevent disease in the University so far as possible. It endeavors to protect the students by early detection and isolation of communicable diseases, by supervision of the sanitation of their surroundings, and by educating them in matters of personal hygiene and public health. It also cares for the individual student if he becomes ill.

The Health Service will serve as a potent factor in reducing to the minimum that prodigious annual academic and economic loss due to indisposition and illness of students.

Activities.—In order to reach its objects, the following activities are essential and are being inaugurated:

1. Provisions for maintaining the health of the normal, healthy student. A close coöperation exists between the Department of Physical Education and the Health Service for this purpose. It is the aim of these agencies ultimately, through stimulation of a desire to reach and maintain physical perfection and through the establishment of suitable facilities, to see all students and teachers in the University engaged for a period each day in wholesome and constructive physical exercise. Nothing will foster the health of the University to a higher degree than this.

2. Protection of the sound students from the communicable diseases generally brought to the University.

3. Detection, isolation, and provisions for the treatment and care of all students who are carriers or victims of communicable diseases.

4. Advice to and treatment for, and when necessary, provision for the care of, all students who are ill.

5. Reclamation: Early detection and correction so far as possible of beginning bodily disorders such as the degeneration diseases, etc.

6. Reconstruction: Correction, so far as is possible, by advice regarding proper exercise and right living, and by the necessary treatment, of defects in subnormals.

The Health Service does not attempt to limit its services, but endeavors to render to students all medical service whereby health and physical and mental efficiency can be increased, feeling that both the University and state will profit from such a procedure.

Through the generous coöperation of the staff of the Medical School expert and special medical service is obtained.

In order that the foregoing activities may be properly carried out, complete physical examination records of all students will be kept on file. By frequent references and additions to these records a "follow-up system" of the physical progress of the student can be inaugurated and maintained. All students entering the University for the first time will be required to take a physical examination before completion of the registration. It is hoped that this same procedure will be applied yearly to all students just as soon as the facilities are provided.

The foregoing objects are to be reached through the Personal Division of the Health Service.

7. The students' environment must be made as hygienic as possible. Hence the Division of Sanitation concerns itself with the sanitary conditions both on and off the campus. Campus buildings, rooming-houses, and boarding-houses must be inspected and regulated so far as it is possible.

8. Finally every student should be made familiar with the fundamentals of personal and public hygiene. This phase—educational—is a most important work of a health service.

Organization.—From the foregoing statement of the various interests and activities of the Health Service, three lines of endeavor can be noted, (1) that which deals directly with the student—the personal phase; (2) that which deals with his environment—sanitation; (3) that which has for its object acquainting students with the fundamentals of good health and right living—educational phase. The activities of the University Health Service are therefore divided into three main divisions, Personal Division, Sanitation, Education.

The University Health Service was first installed temporarily in a house at 1515 University Avenue, since all buildings on the campus were being used to their utmost capacity during the S.A.T.C. period and it was impossible to obtain quarters on the campus. On February 1, 1919, it was moved to the first floor of Pillsbury Hall, its present quarters. One end of the floor has been prepared with a view of taking care of dispensary patients. One hundred students can readily be taken care of daily in the Dispensary. The other end of the floor has been converted into a hospital including wards and private rooms for isolation purposes. Twenty-five beds and other essential hospital equipment suitable for the care of twenty-five bed patients have been provided.

The Students' Hospital and Dispensary are open to all students. Physicians are in attendance daily. Outside calls for medical attention are received at any hour of the day or night.

Report for school year 1918-19.—The University Health Service was organized and began its activities with the opening of the fall quarter, 1918. In the first place the medical service for the S.A.T.C. had to be organized and set in running order, for the University Health Service was concerned with the medical service for both the S.A.T.C. and civilian students.

Simultaneously with its organization, the serious epidemic of influenza broke out among both our S.A.T.C. and civilian students. There were 2,000 cases of influenza in the two groups—1,200 among the S.A.T.C. and 800 among civilian students. Twelve deaths occurred among the former and 8 deaths among the latter. Our death rate was decidedly lower than at any other institution. According to the statistics of the morbidity and mortality of this disease elsewhere, 100 deaths might reasonably have been expected. Under the conditions students were infinitely better off here than at home. From the standpoint of urgent need the University Health Service was organized at a most opportune time.

It is difficult to differentiate between its activities among the S.A.T.C. and civilian students, therefore a report of its activities in both groups is included.

In submitting the report of our work with the S.A.T.C., mention should be made of the assistance rendered by contract surgeons appointed specifically for this purpose from among the staff of the Medical School. Further, the local army medical officer and the staff and facilities of Fort Snelling all contributed to the medical service of the University of Minnesota S.A.T.C.

The following is a report of the medical activities of the Health Service in connection with the S.A.T.C. during the autumn quarter, 1918—the period of its existence.

Physical examinations, draft entrance.....	3,433
Physical examinations, mobilization	3,344
Physical examinations, for draft board.....	7
Physical examinations, West Point	20
Physical examinations, R.O.T.C.	600
Number of cases of influenza.....	1,200
Number of cases of mumps.....	100
*Number of dispensary visits.....	6,000
<hr/>	
Total	14,704

* Estimated.

The following is a report of the activities of the Health Service among civilian students at the University and University Farm for the fall, winter, and spring quarters, 1918-19.

Patients cared for in Students' Hospital, (bed patients).....	719
Total Dispensary visits of students for medical advice and treatment.....	12,689
Physicians' outside visits.....	312
Physical examinations	1,513
Total number of laboratory examinations for students.....	1,860
Students referred to the University Dispensary for special treatment.....	254
<hr/>	
Total	17,347

Thus it is seen that 17,347 distinct services were rendered to civilian students during the year. When we add to this sum 14,704 services rendered the S.A.T.C. a total of 32,051 is the result.

No attempt will be made here to give a classification of the various disorders treated, except the communicable diseases. The following is a report of the number of cases of communicable, infectious diseases which occurred during the year:

Mumps	15
Measles	20
Smallpox	6
Diphtheria	3
Tuberculosis	10
Scarlet fever	6

Each case was properly isolated. That serious epidemics of some of these diseases did not result was in all likelihood due to early detection and isolation. Arrangements whereby the tuberculosis patients were admitted to sanatoria were made. Five diphtheria carriers from three different foci were found, isolated, and treated until negative cultures were obtained.

Plans for development.—Owing to its initiation, the expense of equipment, the pandemic of influenza, the necessity of changing quarters, etc., the activities of the University Health Service have been practically limited to the Personal Division during the past school year.

It is the aim of the Service to enlarge its activities in both Sanitation and Education.

Sanitation.—During the past year, the Division of Sanitation has looked after the sanitation of swimming pools. Two hundred and thirty distinct analyses of water from swimming pools at the University and Farm were made.

Cards have already been prepared for the purpose of rating boarding- and rooming-houses. Many rooming-houses have been and are being inspected. The closest coöperation is maintained between the Housing Bureaus and the Health Service.

As environment plays an important rôle in the health of students, knowledge and regulation of the conditions under which the students live, the food and water ingested, the air breathed, etc., are most important. The environment of the student both on and off the campus must be regulated and made as sanitary as possible.

1. University buildings and campus: A sanitary survey of the campus and its buildings will be made in the near future. As a consequence, much will be gained in determining the activities needed along this line.

For each building on the campus utilized by students, a voluntary health officer—some interested member of the Faculty who occupies the particular building for the greater part of his time—will be asked to serve. The voluntary health officers will supervise in general the enforcement of the regulations pertaining to heat, ventilation, light, drinking water, and janitor service. It has been the Director's experience that these voluntary health officers for the campus buildings are among the most valuable assets of a health service.

A sanitarian will cooperate with the Superintendent of Grounds and Buildings and the voluntary health officers for each building. He will have charge of the sanitation of swimming pools and the inspection of dining-rooms. Servers of food will be required to possess a certificate of health.

Regulations for campus sanitation will be submitted, in the near future, to the President for his approval.

2. Sanitation off the campus: A sanitary survey of students' rooming- and boarding-houses will be made at least once each year and as frequently as the occasion may demand. The sanitarian will investigate the equipment, heating, lighting, cleanliness, etc., of rooms offered for rent to students. Efforts will be made to secure the hearty cooperation of those having charge of eating places patronized by students with a view of securing clean, nourishing food free from contamination.

Voluntary health officers will be appointed for sororities, fraternities, cooperative clubs, etc., who will cooperate with the sanitarian in obtaining sanitary and healthful living conditions for students.

There is a great need at the University of Minnesota for university controlled dormitories, dining-halls, and refectories. Nothing would contribute more to the efficiency of the Health Service than such provisions. With a view of improving present conditions, regulations for boarding- and rooming-houses have been prepared and will soon be submitted to the President for his approval.

Education.—The Health Service has advocated the inauguration of a required credit course in hygiene—three hours per week for the first quarter, to all freshmen. So far little response on the part of the various colleges has been manifested. The Health Service will continue in this effort, for it holds that it is the duty of the University systematically to instruct its students in the fundamentals of good health and sane living.

It is believed that some facts relative to hygiene and right living were disseminated by the brief discussions of timely health topics which appeared in the *Official Daily Bulletin*. These will be resumed during the next school year. Exhibits, placards, moving pictures, and special lectures, relative to disease prevention, patent medicines, etc., will be used also.

A permanent building for the University Health Service is needed. Tentative plans for a suitable building have been submitted.

Respectfully submitted,

JOHN SUNDWALL, *Director*

FINANCIAL REPORT

To the President of the University:

SIR: In accordance with your instructions, I enclose herewith a summary of the financial operations of the University of Minnesota covering the period from August 1, 1918, to June 30, 1919. Full detailed statistics covering the period from July 1, 1918, to June 30, 1919, in accordance with the recent action of the Board of Regents, will be included in the *Twenty-first Biennial Report of the Board of Regents*.

Respectfully submitted,

G. H. HAYES, *Comptroller*

THE PRESIDENT'S REPORT

SUMMARY OF RECEIPTS

1918-1919

ELEVEN MONTHS

Receipts from Students

Tuition and Fees.....	\$297,450.23
General and Military Deposits.....	39,246.58
Service Enterprises.....	215,866.91

\$552,563.72*Receipts from Interest*

Swamp Land.....	44,964.40
Mineral Contracts	27.94
Land Contracts	7,275.18
Investment Funds	31,984.43
Bonds	7,291.85
State Deposits	1,221.26

92,765.06*Receipts from Federal Government*

Smith-Lever Fund	62,146.45
Smith-Hughes Fund	11,117.95
Adams and Hatch.....	30,000.00

103,264.40*Receipts from State*

23/100 Mill Tax.....	313,978.38
Maintenance Appropriation..	\$1,365,000.00
Less July Deduction.....	64,320.00
	<u>1,300,680.00</u>
Peat Soil Appropriation.....	6,000.00
Sandy Land Appropriation.....	1,500.00
Reimbursement for Army Buildings, Farm	32,000.00
University Buildings Appropriation.....	175,000.00

1,829,158.38*Receipts from Other Sources*

Dental Infirmary	23,934.37
Hospital and Free Dispensary.....	13,840.29
Farm Products, Live Stock, etc.....	65,489.88
Rents of Campus Houses.....	7,448.51
Lyceum	34,781.51
Stock Testing Fees, Farm Extension, etc..	15,095.70
Storehouse	9,175.10
Sub-Stations	60,658.26
Training Camp Dining Hall.....	85,277.54
Special Military Training.....	562,865.82
Sundry Items	15,188.48

893,755.46

Mayo Foundation	74,299.03
Sundry Trust Funds.....	31,903.82

106,202.85

Total.....	<u>\$3,577,709.87</u>
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CLASSIFICATION OF EXPENDITURES FOR THE FISCAL YEAR

SCHOOLS, COLLEGES, ETC.	1918-1919		CAPITAL OUTLAY	TOTALS
	EXPENSES Salaries & Wages	Supplies		
Administration	\$98,552.66	\$30,293.50	\$8,985.35	\$137,831.51
General University..	76,402.02	91,228.32	23,846.12	191,476.46
Science, Literature, and the Arts.....	348,576.98	28,025.64	6,770.32	383,372.94
College of Engineer- ing	112,790.23	18,176.78	13,734.22	144,701.23
Department of Agri- culture	385,898.26	187,062.77	45,220.31	618,181.34
Medical School.....	172,358.24	108,480.32	10,960.57	291,799.13
School of Chemistry	49,102.74	19,672.20	5,282.77	74,057.71
School of Mines....	45,547.67	16,682.96	6,698.99	68,929.62
College of Dentistry	68,360.88	25,531.79	1,042.54	94,935.21
Law School	26,573.91	1,765.40	2,903.40	31,242.71
College of Pharmacy	16,973.43	5,634.59	368.44	22,976.46
College of Education	63,767.64	8,188.70	1,590.75	73,547.09
University Extension	70,257.92	9,623.76	188.50	80,070.18
Graduate School....	7,646.90	2,835.58	510.45	10,992.93
Physical Plant	118,357.55	83,815.13	9,206.64	211,379.32
Crookston	41,455.66	27,556.02	7,767.64	76,779.32
Morris	37,219.81	23,263.45	22,803.23	83,286.49
Grand Rapids	10,889.22	12,692.02	1,122.49	24,703.73
Duluth	9,745.21	5,473.28	7,092.49	22,310.98
Waseca	5,211.34	3,424.21	1,632.70	10,268.25
Zumbra Heights.....	4,647.14	2,340.95	131.57	7,119.66
Service Enterprises..	72,980.32	312,573.63	20,302.92	405,856.87
	<u>\$1,843,315.73</u>	<u>\$1,024,341.00</u>	<u>\$198,162.41</u>	<u>\$3,065,819.14</u>
Mayo Foundation.....				70,267.54
Special Military Training.....				619,069.12
Total.....				<u>\$3,755,155.80</u>

PUBLICATIONS OF THE FACULTIES
GENERAL UNIVERSITY
ADMINISTRATION

WILLIAM WATTS FOLWELL, LL.D., President Emeritus

University addresses. Minneapolis: H. W. Wilson Company. 224 pages.

Economic addresses. Minneapolis: The University of Minnesota. 1918. 100 pages.

In the General Library, University of Minnesota:

Course in American government. MS.

Economic schools and movements. MS. 131 pages.

History and government of Minnesota. MS. 121 pages.

Elements of political economy. MS. 219 pages.

Elements of statistics, typewritten. 97 pages.

Economic pamphlets including an inaugural address.

Pamphlets—miscellaneous.

Science of the state. MS. 193 pages.

Public international law. MS. 290 pages.

United States international law. MS. 132 pages.

Elements of jurisprudence. MS. 182 pages.

Public finance. MS. 360 pages.

Taxation and other revenue. MS. 367 pages.

Railroad economics. MS. 447 pages.

PHYSICAL EDUCATION FOR WOMEN

JULIA ANNA NORRIS, M.D., Professor of Physical Education and Director
of the Department of Physical Education for Women

Stimulation of interest in hygiene. *American Physical Education Review* 23:538-42.
1918.

UNIVERSITY HEALTH SERVICE

JOHN SUNDWALL, B.S., Ph.D., M.D., Professor of Hygiene and Director
of University Health Service

University physical education and efficiency. *School and Society* 8:511-84. 1919.

THE COLLEGE OF SCIENCE, LITERATURE, AND
THE ARTS

JOHN BLACK JOHNSTON, Ph.D., Dean of the College of Science, Literature,
and the Arts, and Professor of Neurology

The public education of youth; the place of creative work and of subject-matter
studies. *School and Society* 212:69-79. 1919.

AMERICANIZATION TRAINING AND ANTHROPOLOGY

ALBERT ERNEST JENKS, Ph.D., Professor of Anthropology and Chairman
of the Department of Americanization Training and Anthropology

The goal of Americanization training. Minneapolis: The University of Minnesota.
1919.

Racial variation. *The American Journal of Physical Anthropology* 1 no. 2:242-43. 1918.

Americanization. *Lyons Club Magazine* 1 no. 9:192-93. 1919.

Review of

Clark Wissler, The American Indian. *The American Museum Journal* 18:645-61. 1918.

ANIMAL BIOLOGY

HAL DOWNEY, Ph.D., Professor of Histology

Further studies on the reactions of blood- and tissue-cells to acid colloidal dyes. *Anatomical Record* 15:103-33. 1918.

THOMAS SADLER ROBERTS, M.D., Professor of Ornithology, Director of the Zoological Survey, and Curator of the Zoological Museum

A review of the ornithology of Minnesota. Minneapolis: The University of Minnesota. Current Problems Series no. 11. 1919. v, 101 pages. Illus.

The oven-bird in Minnesota. *Bird-Lore* 20:329-34. Illus. 1918.

House sparrows robbing robins. *Ibid.* 20:354-55. 1918.

The season. June 15 to August 15, 1918. Minneapolis, Minn., region. *Ibid.* 20:360-61. 1918.

The season. August 15 to October 15, 1918. Minneapolis region. *Ibid.* 20:430-31. 1918.

The season. October 15 to December 15, 1918. Minneapolis region. *Ibid.* 21:52-53. 1919.

The season. December 15, 1918, to February 15, 1919. Minneapolis region. *Ibid.* 21:115. 1919.

The season. February 15 to April 15, 1919. Minneapolis region. *Ibid.* 21:185-86. 1919.

Alleged rediscovery of the passenger pigeon. *Science* (n. s.) 48:575. 1918.

ROYAL NORTON CHAPMAN, Ph.D., Assistant Professor of Animal Biology

The confused flour beetle (*Tribolium confusum* Duval). *Seventeenth Report State Entomologist of Minnesota* pages 73-94. 1919.

A study of the correlation of pelvic structure and the habits of certain burrowing mammals. *The American Journal of Anatomy* 25:185-208. 1919.

Insects in relation to wheat flour and wheat flour substitutes. *Journal of Economic Entomology* 12:66-70. 1919.

ELMER JULIUS LUND, Ph.D., Assistant Professor of Animal Biology

The relation of the state of nutrition of *Paramecium* to the rate of intracellular oxidation. *American Journal of Physiology* 47:167-77. 1918.

A simple method for measuring carbon dioxide produced by small organisms. *Biological Bulletin* 36:105-14. 1918.

The rates of CO₂ production by starved and fed *Paramecia*, and their possible relation to the rates of oxidation in the unfertilized and fertilized sea urchin's egg. *American Journal of Physiology* 47:318-27. 1918.

OSCAR WILLIAM OESTLUND, Ph.D., Assistant Professor of Animal Biology

Contribution to the knowledge of the tribes and higher groups of the family Aphididae (Homoptera). *Report of State Entomologist of Minnesota* 17:46-72. 1919.

Abstracts of bacteriological articles in Swedish medical periodicals. *Abstracts of Bacteriology* 2:292 etc. 1918-19.

GEORGE DELWIN ALLEN, M.S., Instructor in Animal Biology

Quantitative studies on the rate of respiratory metabolism in *Planaria*. I. The effect of potassium cyanide on the rate of oxygen consumption. *American Journal of Physiology* 48:93-120. 1919.

ASTRONOMY

FRANCIS P. LEAVENWORTH, M.A., Professor of Astronomy and Head of the Department of Astronomy

Measures of double stars. *Astronomical Journal* 32:39-48. 1919.

WILLIAM OTIS BEAL, M.A., M.S., Assistant Astronomer

Micrometrical measures of double stars. *Astronomical Journal* 31:136-40. 1918.

BOTANY

CARL OTTO ROSENDAHL, Ph.D., Professor of Botany and Chairman of the Department of Botany

Variations in the flowers of *Erythronium propullans* Gray. *Torreya* 19:43-47. 1919.

ELIAS JUDAH DURAND, B.A., D.Sc., Professor of Botany

Outline for use in laboratory practice in a course in general introductory botany. Columbia, Missouri: Herald-Statesman Company. 1918. 64 pages.

Peziza proteana var. *sparassoides* in America. *Mycologia* 11:1-3. 1919.

Encalypta laciniata in central New York. *The Bryologist* 22:13. 1919.

LEE I. KNIGHT, B.A., B.S., Ph.D., Professor of Plant Physiology, and Head of the Section of Plant Physiology in the Division of Plant Pathology and Botany in the College of Agriculture, Forestry, and Home Economics

Some physiological phases of self-sterility of the apple. *Proceedings of the American Society for Horticultural Science. Fourteenth Annual Meeting, 1917* pages 101-5. 1918.

COMPARATIVE PHILOLOGY

FREDERICK KLAEBER, Ph.D., Professor of Comparative and English Philology, and Head of the Department of Comparative Philology

Textual notes on Beowulf. *Modern Language Notes* 34:129-34. 1919.

Concerning the functions of Old English *geweorþan* and the origin of German *gewähren lassen*. *Journal of English and Germanic Philology* 18:240-61. 1919.

ECONOMICS

GEORGE WILLIAM DOWRIE, Ph.D., Professor of Economics

Reviews of

Eugene E. Agger, Organized banking. *Journal of Political Economy* 26:914-16. 1918.

Shaw banking series, credits and collections. *American Economic Review* 9:352-53. 1919.

Shaw banking series, loans and discounts. *Ibid.* 9:353. 1919.

E. W. Kemmerer, The A B C of the Federal Reserve System. *Ibid.* 9:130-31. 1919.

J. HUGH JACKSON, B.A., C.P.A., Assistant Professor of Accounting

Treatise on the standard accounting system for printers (copyrighted by United Typothetae of America). Chicago: United Typothetae of America. 1919. vi, 51 pages.

The standard accounting system for printers. *National Printer-Journalist* 37:195-97. 1919.

Standardization of printers' accounts. *The Journal of Accountancy* 27:358-63. 1919.

ENGLISH

CARLETON BROWN, Ph.D., Professor of English, and Chairman of the Department of English

Dialogue between a clerk and a husbandman. *Modern Language Notes* 33:415-17. 1918.

Beowulf 1080-1106. *Ibid.* 34:181-83. 1919.

Reviews of

Robert M. Garrett, *The pearl: an interpretation*. *Ibid.* 34:42-45. 1919.

James Holly Hanford and John M. Steadman, Jr., *Death and life*. *Ibid.* 34:63-64. 1919.

RICHARD BURTON, Ph.D., LL.D., Professor of English

- Dickens: how to know him. Indianapolis: Bobbs-Merrill Company. 1919. 308 pages.
 Fooling audiences. *The Theater Magazine* Jan. 1919.
 Ideals in American literature. *The Federation Magazine* Sept. 1918.
 At last, Barrie's plays. *The Bellman* 25:458. 1918.
 City parks. *Ibid.* 25:294. 1918.
 October weather. *Ibid.* 25:430. 1918.
 On being human. *Ibid.* 25:318. 1918.
 With a brooch (poem). *Ibid.* 25:216. 1918.
 "I'm sorry to bother you—but." *Ibid.* 26:18. 1919.
 The baby in our block. *Ibid.* 26:319. 1919.
 Wandering Americans. *Ibid.* 26:299. 1919.
 Yesteryear in letters. *Ibid.* 26:402. 1919.
 The passing of the bartender. *Ibid.* 26:346. 1919.
 Rewards and reputations. *Ibid.* 26:570. 1919.

OSCAR W. FIRKINS, M.A., Professor of Comparative Literatures

- Amy Lowell's collection of modern verse. *The Review* 1:240. 1919.
 Barrie plays in print. *Ibid.* 1:20. 1919.
 "The jest," "39 East," and "A little journey." *Ibid.* 1:131-32. 1919.
 "John Ferguson" and "Hamlet." *Ibid.* 1:87. 1919.
 Mr. Yeats and others. *Ibid.* 1:151. 1919.
 Peninsular and oriental—Benavente and Kalidasa. *Ibid.* 1:44-46. 1919.
 Some one-act plays. *Ibid.* 1:196-98. 1919.
 Summer reading. *Ibid.* 1:141. 1919.
 Walt Whitman. *Ibid.* 1:56-58. 1919.
 The letter (poem). *Atlantic Monthly* 123:227. 1919.
 Assorted poets. *Nation* 108:488. 1918.
 English singers. *Ibid.* 108:169-71. 1919.
 English voices. *Ibid.* 107:201-3. 1918.
 Mr. Masfield's poetry. *Ibid.* 108:389-90. 1919.
 Poetry in war time. *Ibid.* 106:759. 1918.
 Point of war. *Ibid.* 107:660-61. 1918.
 Verse and verse criticism. *Ibid.* 106:399-400. 1918.
 The pictures of Jesus in the Louvre (poem). *North American Review* 209:656-58
 1919.
Reviews of
 G. Gordon, Men who make our novels. *The Review* 1:237-38. 1919.

ELMER EDGAR STOLL, Ph.D., Professor of English

- Was paradise well lost. *Publications of the Modern Language Association* 33:429-35.
 1918.

CHARLES WASHBURN NICHOLS, Ph.D., Assistant Professor of Rhetoric

- Fielding notes. *Modern Language Notes* 34:220-24. 1919.

CECIL ALBERT MOORE, Ph.D., Professorial Lecturer in English

- A predecessor of Thomson's *Seasons*. *Modern Language Notes* 34:277-81. 1919.

CHARLES FREDERICK LINDSLEY, M.A., Instructor in Public Speaking

- George William Curtis: a study in the style of oral discourse. *Quarterly Journal of
 Speech Education* 5:79-100. 1919.

MARTIN BRONN RUUD, Ph.D., Instructor in Rhetoric

- The publication of Ibsen's *Brand*. *Scandinavian Studies* 5 no. 2:91-95.

STANLEY ISRAEL RYPINS, Ph.D., Instructor in Rhetoric

- Notes on 'Epistola Alexandri ad Aristotelem.' *Modern Language Notes* 32:94-95. 1917.
 Notes on Old English lexicography. *Ibid.* 33:440-41. 1918.

GEOLOGY AND MINERALOGY

FRANK FITCH GROUT, Ph.D., Associate Professor of Geology

Pegmatites of the Duluth gabbro. *Economic Geology* 13:185-97. 1918.

Internal structures of igneous rocks. *Journal of Geology* 26:439-58. 1918.

Two phase convection in igneous magmas. *Ibid.* 26:481-90. 1918.

A form of multiple rock diagrams. *Ibid.* 26:622-25. 1918.

A type of igneous differentiation. *Ibid.* 26:626-58. 1918.

The lopolith: an igneous form exemplified by the Duluth gabbro. *American Journal of Science* 46:516-22. 1918.

Review of

Roberts and Longyear, Genesis of Sudbury nickel-copper ores. *Transactions of the American Institute of Mining Engineers* 59:58-59. 1918.

CHESSLEY JUSTIN POSEY, M.S., Assistant Professor of Geography

Reorganization of our courses of study in geography to meet the needs revealed by the war. *The Minnesota Educational News-Letter* 5:14-17. 1918.

The influence of geographic factors in the development of Minnesota. *Minnesota History Bulletin* 2:443-53. 1918.

TERENCE THOMAS QUIRKE, E.M., M.S., Ph.D., Assistant Professor of Geology

The Richardton meteorite. *Science* (n. s.) 49:92-93. 1919.

S. A. T. C. laboratory manual—map reading for aviators. Minneapolis: Perine Book Company. 21 pages. 1918.

CARL OLWIN DUNBAR, Ph.D., Instructor in Geology

Stratigraphy and correlation of the Devonian of western Tennessee. *American Journal of Science* 46:732-56. 1918.

GERMAN

SAMUEL KROESCH, Ph.D., Assistant Professor of German

NHG. "beschuppen," "beschummeln." *Modern Language Notes* 34:351-56. 1919.

HISTORY

GUY STANTON FORD, Ph.D., Dean of the Graduate School, Professor of History and Chairman of the Department of History

Editor. Red, white, and blue series; war information series. Washington, D. C.: Committee on Public Information. 1918.

Director. *National School Service.* Washington, D. C. 1918.

The Prussian peasant before 1807. *American Historical Review* 24:358-79. 1919.

America's fight for public opinion. *Minnesota History Bulletin* 3:3-26. 1919.

Review of

J. B. McMaster, The United States in the world war. *American Historical Review* 24:496-98. 1919.

NORMAN SCOTT BRIEN GRAS, Ph.D., Professor of Economic History

The early English customs system. Cambridge: Harvard University Press. 1918. 766 pages.

Reviews of

H. L. Gray, War time control of industry. *Quarterly Journal of Economics* 32:664-67. 1918.

L. H. Weeks, A history of paper manufacture in the United States, 1690-1916. *Mississippi Valley Historical Review* 5:218-19. 1918.

ALBERT BEEBE WHITE, Ph.D., Professor of History

Reviews of

George Burton Adams, An outline sketch of English constitutional history. *The Yale Review* 8:851-53. 1919.

Charles Homer Haskins, Norman institutions. *Ibid.* 8:853-56. 1919.

SOLON JUSTUS BUCK, Ph.D., Associate Professor of History

Twentieth biennial report of the Minnesota Historical Society. St. Paul: Minnesota Historical Society. 1919. 101 pages.

Editor, Proceedings of the Mississippi Valley Historical Association 1916-17 and 1917-18. 9:pts. 2 and 3. Cedar Rapids, Iowa. 1918, 1919. Pages 207-477.

Editor, *Minnesota History Bulletin* 2:nos. 7, 8; 3:no. 1. August, 1917, to February, 1918. St. Paul: Minnesota Historical Society. Pages 441-630, 1-54.

Reviews of

Mary V. Carney, Minnesota, the star of the north. *Minnesota History Bulletin* 2:454-55. 1918.

Marcus L. Hansen, Old Fort Snelling. *American Historical Review* 24:139-40. 1918. Reprinted in *Minnesota History Bulletin* 2:569-70. 1918.

LESTER BURRELL SHIPPEE, Ph.D., Assistant Professor of History

The first railroad between the Mississippi and Lake Superior. *Mississippi Valley Historical Review* 30:121-42. 1918.

The federal relations of Oregon, II. *Quarterly of the Oregon Historical Society* 19:189-230; III, *Ibid.* 19:283-333. 1918-19.

Reviews of

R. A. Kent, A study of state aid to public schools in Minnesota. *Minnesota History Bulletin* 2:455-57. 1918.

F. B. Streeter, Political parties in Michigan, 1837-1860. *Mississippi Valley Historical Review* 6:127-29. 1919.

LATIN

JOSEPH BROWN PIKE, M.A., Professor of Latin and Head of the Department of Latin

Can Latin be revised as an international scientific language? *Classical Journal* 14:48-55. 1918.

MATHEMATICS

WILLIAM HENRY BUSSEY, Ph.D., Associate Professor of Mathematics and Chairman of the Department of Mathematics

Fermat's method of infinite descent. *American Mathematical Monthly* 25:333-37. 1918.

RAYMOND WOODWARD BRINK, B.S.E.E., Ph.D., Instructor in Mathematics

A new integral test for the convergence and divergence of infinite series. *Transactions of the American Mathematical Society* 19:186-204. 1918.

PHILOSOPHY

NORMAN WILDE, Ph.D., Professor of Philosophy, and Head of the Department of Philosophy

The development of Coleridge's thought. *Philosophical Review* 28:147-63. 1919. Pleasure. *Encyclopedia of Religion and Ethics* 10:61-62. 1919.

RUPERT CLENON LODGE, M.A., Assistant Professor of Philosophy

The meaning and function of simple modes in the philosophy of John Locke. *Minneapolis: The University of Minnesota. Studies in the Social Sciences* no. 12. 1918. 86 pages.

The division of judgments. *Journal of Philosophy, Psychology, and Scientific Methods* 15:541-50. 1918.

Reviews of

E. Goblot, *Traité de logique. Ibid.* 16:301-6. 1919.

P. E. More, Platonism. *South Atlantic Quarterly* 18:181-82. 1919.

G. P. Adams, Idealism and the modern age. *Bellman* 26:609. 1919.

POLITICAL SCIENCE

CEPHAS DANIEL ALLIN, M.A., LL.B., Professor of Political Science and
Chairman of the Department of Political Science

Federal aspects of preferential trade in the British Empire. *American Political Science Review* 12:381-402. 1918.

Reviews of

Edward Jenks, The government of the British Empire. *Minnesota Law Review* 3:69-71. 1919.

C. H. Huberich and R. King, The development of German prize law. *Ibid.* 3:142-43. 1919.

A. C. McLaughlin, America and Britain. *The American Political Science Review* 13:314-16. 1919.

ALBERT JAMES LOBB, Ph.B., LL.B., Lecturer in Political Science

Civil authority versus military. *Minnesota Law Review* 3:105-21. 1919.

Taxation—exemption of liberty bonds. Property interest of stockholders. *Ibid.* 3:257-62. 1919.

Taxation—unit rule—instrumentalities of interstate commerce—track mileage as basis of assessment. *Ibid.* 3:421-25. 1919.

PSYCHOLOGY

HERBERT WOODROW, Ph.D., Associate Professor of Psychology

An absolute intelligence scale (with Grace Arthur). *Journal of Applied Psychology* 3:115-33. 1918.

Review of

Time and rhythm. *Psychological Bulletin* 15:111-14. 1917.

ROMANCE LANGUAGES

IRVILLE CHARLES LECOMPTE, Ph.D., Professor of Romance Languages

The *Livre des Vertuz*. *Modern Language Notes* 34 no. 5:305-7. 1919.

FRANCIS BROWN BARTON, Docteur de l'Université de Paris, Assistant Professor of Romance Languages

Laurence Sterne and Théophile Gautier. *Modern Philology* 16:205-12. 1918.

RUTH SHEPARD PHELPS, M.A., Assistant Professor of Italian

Marino and Dante. *Modern Language Notes* 34:51-52. 1919.

An Italian poetess—Ada Negri. *North American Review* 209:528-39. 1919.

PEDRO HENRÍQUEZ-UREÑA, Ph.D., Abogado, Professorial Lecturer in Romance Languages

La obra de Juan Ramón Jiménez. *Cuba Contemporánea*. Havana. April, 1919.

Salomón de la Selva. *El Figaro*. Havana. April, 1919.

El endecasílabo castellano. *Revista de Filología Española*. Madrid. 1919.

SCANDINAVIAN

GISLE CHRISTIAN JOHNSON BOTHNE, M.A., Professor of Scandinavian and Head of the Department of Scandinavian

Additional articles on Scandinavian subjects in the *New Encyclopedia Americana*.

The Scandinavian languages. *Foreign Language Bulletin*. Washington, D. C.: Bureau of Education.

Translation of Björnson's *Slesvig*. *North Star*. Minneapolis.

SOCIOLOGY AND SOCIAL WORK

ARTHUR JAMES TODD, Ph.D., Professor of Sociology and Chairman of the Department of Sociology and Social Work

Democracy in reconstruction (with William Schafer, Frederic Cleaveland, editors, *et al*). Boston: Houghton Mifflin and Company. 1919. 491 pages.

College teaching (with Paul Klapper, editor, *et al*). New York: World Book Company. 1919.

Teaching sociology to undergraduates. *Proceedings of the American Sociological Society* 13:129-42. 1919.

New social data and the war. *Proceedings of the Forty-fifth National Conference of Social Work* pages 683-86. 1918.

The probation officer in the new social realignment. *Proceedings of the Tenth Annual Conference of the National Probation Association*. 1918. Reprinted by the New York State Probation Commission, Albany, 1918. 16 pages. Reprinted in *Journal of the American Institute of Criminal Law and Criminology* 10:108-15. 1919.

Nursing as a learned profession: a sociologist's view. *Public Health Nurse* 11:13-18. 1919.

The square deal in industry. *Union Labor Bulletin* pages 33-34. April, 1919. *Reviews of*

John A. Hobson, Democracy after the war. *American Journal of Sociology* 24:334-36. 1918.

W. C. White and L. J. Heath, A new basis for social progress. *Ibid.* 24:98-99. 1918.

Franco Savorgnan, La guerra e la popolazione. *Ibid.* 24:338-40. 1918.

Ordway Tead, Instincts in industry. *Ibid.* 24:475-79. 1919.

John M. Robertson, The economics of progress. *The Survey* 41:230-31. 1918.

CAROL ARONOVICI, Ph.D., Lecturer on Social and Civic Work

Organized leisure as a factor in conservation. *American Journal of Sociology* 24: 373-88. 1919.

THE COLLEGE OF ENGINEERING AND ARCHITECTURE

JOHN ROBINS ALLEN, B.S., M.E., Dean of the College of Engineering and Architecture, Head of the Department of Experimental Engineering, and Professor of Mechanical Engineering

A test of conductivity of window shades. *American Architect* 115:561-62. 1919.

American Society of Heating and Ventilating Engineers' Magazine April, 1919.

Design of hot-air furnace. *American Artisan and Hardware Record* June 14, 1919.

Design of the warm-air furnace. *Metal Worker* 91:784-86+. 1919.

CIVIL ENGINEERING

FREDERIC HERBERT BASS, B.S., Professor of Municipal and Sanitary Engineering and Head of the Department of Civil Engineering

Editor, The Monad, Journal of the American Association of Engineers. 1918. Editorials as follows: The engineering society and engineering education 3:20; a code of ethics that has lived 2,500 years 3:20-21; the answer of the American Association of Engineers 3:21; reconstruction 3:22; can you sell it? 3:22-23; engineer statesmen 3:23; a public servant 3:16; between the upper and nether millstones 3:18-19.

The American Society of Civil Engineers seeks light. *Ibid.* 3:5. 1918.

The relation of the engineering profession to engineering education. *Ibid.* 4:10. 1919. *American Contractor* 40:21. 1919.

A broader foundation for engineering education. *The Engineering News Record* 81:582-83. 1918.

Review of

J. D. L. Waddell, The engineering profession fifty years hence. *The Monad* 3:17-18. 1918.

JOHN IRA PARCEL, B.A., B.S. in C.E., Associate Professor of Structural Engineering

Stress measurements in Hell Gate arch bridge (discussion of paper by D. B. Steinman). *Transactions American Society of Civil Engineers* 82:1090-94. 1918.

On a new principle in the theory of structures (discussion of paper by G. F. Swain). *Proceedings American Society of Civil Engineers* 45:322. 1919.

ELECTRICAL ENGINEERING

GEORGE DEFREES SHEPARDSON, M.A., M.E., D.Sc., Professor of Electrical Engineering and Head of the Department of Electrical Engineering

Some coming developments in electrical engineering. *Proceedings of the Minnesota Electrical Association*. 1919. 29 pages.

FRANKLIN WESLEY SPRINGER, B.E.E., E.E., Professor of Electrical Engineering

Spark recorder used in testing apparatus. *Electrical World* 72 no. 24:1130. 1918.

WILLIAM THOMAS RYAN, E.E., Assistant Professor of Electrical Engineering

Iron wire transmission. *Proceedings of the Minnesota Electrical Association* 1918 pages 122-47.

MECHANICAL ENGINEERING

JOHN JOSEPH FLATHER, Ph.B., M.M.E., Professor of Mechanical Engineering

Dynamometers and the measurement of power. *Encyclopedia Americana* 9:461-69. 1918.

Power, utilization of. *Ibid.* 22:478-85. 1918.

THE DEPARTMENT OF AGRICULTURE

ROSCOE WILFRED THATCHER, B.S., M.A., Dean of the Department of Agriculture and Director of the Agricultural Experiment Stations

The twenty-sixth annual report of the Minnesota Agricultural Experiment Station, July 1, 1917, to June 30, 1918. 98 pages. 1919.

Agriculture in times of peace. *Minnesota Farmers' Institute Annual* 31:14-16. 1918.

AGRICULTURAL BIOCHEMISTRY

ROSS AIKEN GORTNER, Ph.D., Professor of Agricultural Biochemistry and Chief of the Division of Agricultural Biochemistry

On the hydrolysis of proteins in the presence of extraneous materials and on the origin and nature of the "humin" of a protein hydrolysate. *Science* (n. s.) 48 no. 1231:122-24. 1918.

CLYDE HAROLD BAILEY, M.S., Associate Professor of Agricultural Biochemistry

Some possibilities of the American Institute of Baking. *Northwestern Miller* 116: 1128-29. 1918.

Short courses aid better baking. *Bakers' Helper* 32:482. 1919.

Heat and heat control in the bakery. *Proceedings Dunwoody Institute Short Course for Bakers* pages 75-79. 1919.

Humidity and its relation to baking. *Ibid.* pages 80-81. 1919.

Characteristics of yeast and bacteria. *Ibid.* pages 120-25. 1919.

RAYMOND ADAMS DUTCHER, M.S., M.A., Assistant Professor of Agricultural Biochemistry

Vitamine studies I. Observations on the catalase activity of tissues in avian polyneuritis (with F. A. Collatz). *Journal of Biological Chemistry* 36 no. 1:63. 1918.

Vitamine studies II. Does water-soluble vitamine function as a catalase activator? (with F. A. Collatz). *Ibid.* 36 no. 3:547. 1918.

Vitamine studies III. Observations on the curative properties of honey, nectar and corn pollen in avian polyneuritis (with L. V. France). *Ibid.* 36 no. 3:551. 1918.

CLARENCE AUSTIN MORKOW, Ph.D., Assistant Professor of Agricultural Biochemistry

The organic matter of the soil: a study of the nitrogen distribution in different soil types. Privately printed. 1918. 80 pages.

The need of another philanthropist by organic chemists. *Science* 48:394-95. 1918.

JOHN JAY WILLAMAN, M.S., Assistant Professor of Agricultural Biochemistry

Minnesota sugar products. St. Paul: The University of Minnesota Agricultural Extension Division. *Special Bulletin* no. 36. 1919. 12 pages.

AGRICULTURAL EDUCATION

JOHN VELTE ANKENY, B.S., Assistant Professor of Agricultural Education

Pointers for slide users. *Reel and Slide Magazine* page 28. June, 1919.

AGRONOMY AND FARM MANAGEMENT

ANDREW BOSS, Vice-Director of the Experiment Station, Professor of Agronomy and Farm Management, and Chief of Division of Agronomy and Farm Management

Compensation for farm managers. *Hoard's Dairyman* 57:698-716. 1919.

Eliminating farm waste. *Hoard's Dairyman* 57:903-37. 1919.

COATES PRESTON BULL, B.S. in Agr., Professor of Agronomy

Agricultural relief and reconstruction in Serbia. *The Farmer* 36:1778. 1918.

ALBERT CEDRIC ARNY, M.S., Associate Professor of Farm Crops and Associate Agronomist in Charge of the Section of Farm Crops in the Agricultural Experiment Station

Field technic in determining yields of plots of grain by the rod row method (with R. J. Garber). *Journal of the American Society of Agronomy* 11:33-47. 1918.

Field technic in determining yields of experimental plots by the square yard method. *Ibid.* 11:81-106. 1918.

Experiments in field technic in plot tests (with H. K. Hayes). *Journal of Agricultural Research* 15:251-62. 1918.

Forage crops. *Minnesota Farmers' Institute Annual* 31:128-60. 1918.

HERBERT KENDALL HAYES, M.S., Associate Professor of Plant Breeding and Associate Agronomist in the Agricultural Experiment Station

Experiments in field technic in plot tests (with A. C. Arny). *Journal of Agricultural Research* 15:251-62. 1918.

Rust resistance in timothy (with E. C. Stakman). *Journal American Society of Agronomy* 11:67-70. 1919.

Breeding small grains in Minnesota. Part I. Technic and results with wheat and oats (with R. J. Garber). Part II. Barley investigations (with H. V. Harlan). St. Paul: The University of Minnesota Agricultural Experiment Station *Bulletin* no. 182. 1919. 56 pages.

Natural crossing in wheat. *The Journal of Heredity* 9:326-30. 1918.

Abstracts of

H. A. Allard, Abnormalities in *Nicotiana*. *Botanical Abstracts* 1:3-7. 1918.

N. O. Backhouse, The inheritance of glume length in *Triticum polonicum*. A case of zygotic inhibition. *Ibid.* 1:38-39. 1918.

Frieda Cobb and H. H. Bartlett, Purple bud sports on pale flowered lilac (*Syringa persica*). *Ibid.* 1:40. 1918.

E. C. Stakman, J. H. Parker, and F. J. Piemeisel, Can biologic forms of stem rust on wheat change rapidly enough to interfere with breeding for rust resistance? *Ibid.* 1:89. 1918.

F. La Marca, Un nouvel hybride de greffe. *Ibid.* 1:156. 1918.

RALPH J. GARBER, M.S., Assistant Professor of Agronomy

Field technic in determining yields of plots of grain by the rod row method (with A. C. Arny). *Journal of the American Society of Agronomy* 11: no. 1:33-47. 1919.

A study of the relation of some morphological characters to lodging in cereals (with P. J. Olson). *Ibid.* 11:173-86. 1919.

Breeding small grains in Minnesota (with H. K. Hayes). St. Paul: The University of Minnesota Agricultural Experiment Station. *Bulletin* no. 182. Part I. 1919. 44 pages.

Abstracts of

H. H. Love and W. T. Craig, Small grain investigations. *Botanical Abstracts* 1:9. 1918.

W. A. Orton, Breeding for disease resistance in plants. *Ibid.* 1:44. 1918.

Orland E. White, Environment, variation and the laws of heredity. *Ibid.* 1:46. 1918.

C. W. Richardson, A further note on the genetics of *Fragaria*. *Ibid.* 1:87. 1918.

A. F. Blakeslee and B. T. Avery, Jr., A vegetative reversion in *Portulaca*. *Ibid.* 1:149. 1918.

Thomas H. Kearny and Walton G. Wells, A study of hybrids in Egyptian cotton. *Ibid.* 1:155. 1918.

ANIMAL INDUSTRY

CLARENCE HENRY ECKLES, D.Sc., Professor of Dairy Husbandry and Chief of the Division of Dairy Husbandry

Milk as a galactagogue (with L. S. Palmer). *New York Medical Journal* 8:375-76. 1918.

- A study of the birth weight of calves. *Journal of Dairy Science* 2:159-69. 1919.
 The business side of a pure bred dairy herd. *Country Gentleman* 83:38-39. 1918.
 Selecting a dairy herd. *Ibid.* 83:46-48. 1918.
 Selecting the dairy sire. *Ibid.* 84:5-7. 1919.
 Some factors influencing the growth of dairy heifers (with W. W. Swett). Missouri Agricultural Experiment Station *Research Bulletin* no. 31. 1918. 54 pages.
 Winter rations for dairy heifers. Missouri Agricultural Experiment Station *Bulletin* no. 158. 1918. 54 pages.
 Legumes, sudan grass and cereal crops for silage. Missouri Agricultural Experiment Station *Bulletin* no. 162. 1919. 25 pages.

HENRY WILLIAM VAUGHAN, M.Sc. in Agr., Professor of Animal Husbandry

- Types and market classes of live stock. Columbus, Ohio: R. G. Adams and Company. 1916. 448 pages.

ENTOMOLOGY AND ECONOMIC ZOOLOGY

ROYAL NORTON CHAPMAN, Ph.D., Assistant Professor of Animal Biology
 The confused flour beetle (*Tribolium confusum* Duval). *Seventeenth Report State Entomologist of Minnesota* pages 73-94. 1919.

A study of the correlation of pelvic structure and the habits of certain burrowing mammals. *The American Journal of Anatomy* 25:185-208. 1919.

Insects in relation to wheat flour and wheat flour substitutes. *Journal of Economic Entomology* 12:66-70. 1919.

WILLIAM A. RILEY, Ph.D., Professor of Entomology, Chief of the Division of Entomology and Economic Zoology, and Entomologist and Parasitologist, Agricultural Experiment Station

Preliminary report on "wormy" fish in Bass Lake, Mahnomen County, Minnesota. *Fins, Feathers, and Fur* no. 15:2-3. 1918.

A use of galls by Chippewa Indians. *Journal of Economic Entomology* 12:217-18. 1919.

Drosophila in bottled certified milk. *Seventeenth Report of the State Entomologist of Minnesota* pages 41-45. 1919.

The fish tapeworm of man. *Fins, Feathers, and Fur* no. 17:10-11. 1919.

Fly pupae in bottled milk. *Journal of Dairy Science* 2:183-88. 1919.

The longevity of the fish tapeworm of man, *Dibothrio-cephalus latus*. *Journal of Parasitology* 5:193-94. 1919.

Abstracts of articles on medical entomology and parasitology in *Abstracts of Bacteriology* 2. 1918-19.

FREDERIC LEONARD WASHBURN, M.S., Professor of Economic Vertebrate Zoology

Hymenoptera of Minnesota. *Seventeenth Report of the Minnesota State Entomologist* pages 145-237. 1918.

Combating rats and mice. St. Paul: The University of Minnesota Agricultural Extension Division *Special Bulletin* no. 32. 1918. 4 pages.

Belgian hares as meat producers. St. Paul: The University of Minnesota Agricultural Extension Division *Special Bulletin* no. 37. 1919. 12 pages.

ARTHUR GORDON RUGGLES, B.S.A., M.A., Associate Professor of Entomology

Life history of an oak twig girdler (*Agrilus arcuatus* Say and var. *torquatus* Lec.). *Seventeenth Report of the State Entomologist of Minnesota* pages 15-20. 1918.

HOME ECONOMICS

MARION WELLER, B.A., Assistant Professor of Textiles

The clothing situation. *The Journal of Home Economics* 10:401-8. 1918.

HORTICULTURE

WILFRID GORDON BRIERLEY, B.S.A., M.S., Associate Professor of Horticulture and Chairman of the Division of Horticulture

Making cider and cider vinegar. St. Paul: The University of Minnesota Agricultural Extension Division. *Special Bulletin* no. 41. 1919. 4 pages.

Winter covering red raspberries in Minnesota. *The Rural New-Yorker* 77:1327. 1918.
The effects of fall and winter pruning in Minnesota. *Iowa State Horticultural Society Report* 53:109-10. 1918.

The healing of pruning wounds. *The Minnesota Horticulturist* 47:145-52. 1919.

LEROY CADY, B.S. in Agr., Associate Professor of Horticulture

Attractive farmsteads. St. Paul: The University of Minnesota Agricultural Extension Division. *Bulletin* no. 63. 1919. 12 pages.

The flower garden, window box, and lawn. *Men's Garden Club Annual, Ramsey County* pages 5-9. 1918.

The farm kitchen garden. *Northwest Farmstead* 20:13, 49. 1919.

Windbreaks. *Ibid.* 20:17. 1919.

Editor, Horticultural Department. *Ibid.*

Orchard and garden notes in *Farm Press News*. 1918-19.

MAXWELL JAY DORSEY, Ph.D., Associate Professor of Horticulture

Hardiness in top-worked varieties of the apple. *Proceedings of the American Society for Horticultural Science* 1918 pages 38-45. 1 pl. 1918.

Adaptation in relation to hardiness. *Minnesota Horticulturist* 46:465-69. 1 fig. 1918.

WILLIAM DORNEY VALLEAU, Ph.D., Instructor in Horticulture

How the strawberry sets fruit. *Minnesota Horticulturist* 46:449-54. 1918.

PLANT PATHOLOGY AND BOTANY

ELVIN CHARLES STAKMAN, Ph.D., Professor of Plant Pathology

Plasticity of biological forms of *Puccinia graminis* (with F. J. Piemeisel and M. N. Levine). *Journal of Agricultural Research* 15:221-50. 1918.

New biologic forms of *Puccinia graminis* (with M. N. Levine and J. G. Leach). *Ibid.* 16:103-5. 1919.

Effect of certain ecological factors on the morphology of the uredinio-spores of *Puccinia graminis* (with M. N. Levine). *Ibid.* 16:43-77. 1919.

Rust resistance in timothy (with H. K. Hayes). *Journal of the American Society of Agronomy* 11:67-70. 1919.

Fruit tree cankers and their control. *Minnesota Horticulturist* 47:256-62. 1919.

Destroy the common barberry. United States Department of Agriculture. *Farmers' Bulletin* no. 1058 pages 3-12. 1919.

LEE I. KNIGHT, Ph.D., Professor of Plant Physiology, and Head of the Section of Plant Physiology in the Division of Plant Pathology and Botany

Some physiological phases of self-sterility of the apple. *Proceedings of the American Society for Horticultural Science. Fourteenth Annual Meeting*. 1917 pages 101-5. 1918.

GUY RICHARD BISBY, Ph.D., Assistant Professor of Plant Pathology and Assistant Pathologist in the Experiment Station

Seed potatoes and potato diseases. *Minnesota Horticulturist* 46:164-67. 1918.

Improve the potato crop (with A. G. Tolaas and Richard Wellington). St. Paul: The University of Minnesota Agricultural Extension Division. *Special Bulletin* no. 35. 1919. 8 pages.

Studies on Fusarium diseases of potatoes and truck crops in Minnesota. St. Paul: The University of Minnesota Agricultural Experiment Station. *Bulletin* no. 181. 1919. 58 pages.

ROBERT CHESTER DAHLBERG, B.S., Instructor in Plant Pathology and Acting Head in Charge of Seed Laboratory

Fourth annual seed laboratory report. St. Paul: The University of Minnesota Agricultural Experiment Station. *Bulletin* no. 175. 1918. 14 pages.

RHETORIC

GEORGE GORLON GLICK, B.A., Instructor in Rhetoric

Introducing speakers. *Lyceum Magazine* October, 1918.

Making the four-minute speech. 4-Minute Men-4 Manual, Minneapolis. 1918.

SOILS

FREDERICK JAMES ALWAY, Ph.D., Professor of Soil Chemistry and Chief of the Division of Soils

Interpretation of field observations on the moistness of the subsoil (with G. R. McDole and R. S. Trumbull). *Journal of the American Society of Agronomy* 10:265-78. 1918.

Relation of minimum moisture content of subsoil of prairies to hygroscopic coefficient (with G. R. McDole and R. S. Trumbull). *Botanical Gazette* 67:185-207. 1918.

A field study of the influence of organic matter upon the water-holding capacity of a silt-loam soil (with Joseph R. Neller). *Journal of Agricultural Research* 16:263-78. 1919.

Variations in the moisture content of the surface foot of a loess soil as related to the hygroscopic coefficient (with G. R. McDole). *Ibid.* 14:453-80. 1918.

Crop yields on the Golden Valley experimental fields in 1918 (with C. G. Selvig). *The Northwest Monthly* 3 no. 4:1, 7. 1919.

CLAYTON ORD ROST, Ph.D., Assistant Professor of Soil Chemistry and Associate Soils Chemist, Agricultural Experiment Station

Parallelism of the soils developed on the gray drifts of Minnesota. Minneapolis: University Printing Company. 1919. 68 pages.

The determination of soil phosphorus. *Soil Science* 4 no. 4:295-312. 1917.

Determination of lime and phosphoric acid in peat soils: comparison of Jönköping with Bremen method (with F. C. Clapp). *Ibid.* 5 no. 3:213-19. 1918.

PAUL RAYMOND McMILLER, B.S. in Chem., M.S., Instructor in Soils and Assistant Chemist in Agricultural Experiment Station

Phosphate demonstrations in Stevens County in 1918 (with G. H. Nesom and P. E. Miller). St. Paul: The University of Minnesota Agricultural Extension Division. *Special Bulletin* no. 34. 1919. 7 pages.

Some notes on the cause of the unproductivity of "raw" subsoils in humid regions. *Soil Science* 7:233-36. 1919.

GEORGE HENRY NESOM, B.A., B.S., Instructor in Soils and Soil Specialist in the Extension Division

Phosphate demonstrations in Stevens County in 1918 (with P. R. McMiller and P. E. Miller). St. Paul: The University of Minnesota Agricultural Extension Division. *Special Bulletin* no. 34. 1919. 7 pages.

Soil survey of Anoka County, Minnesota (with William G. Smith and E. G. Roth). Advance sheets—field operations of the Bureau of Soils, 1916. U. S. Department of Agriculture in cooperation with the University of Minnesota Agricultural Experiment Station. 30 pages and map.

VETERINARY MEDICINE

CLIFFORD PENNY FITCH, M.S., D.V.M., Professor of Animal Pathology and Bacteriology, Chief of the Division of Veterinary Medicine, and Animal Pathologist, Agricultural Experiment Station

Necrobacillosis. *Report of Twenty-second Annual Meeting, United States Livestock Sanitary Association* 1918-1919 pages 135-147. *The Cornell Veterinarian* 9:93-103. 1919.

Pancreatic lithiasis of cattle (with W. L. Boyd and W. A. Billings). *The Cornell Veterinarian* 9:68-75. 1919.

Eversion of the uterus in a ewe (with Dr. W. L. Boyd). *Ibid.* 8:237. 1918.

Scrotal hernia in a yearling ram (with W. L. Boyd). *Ibid.* 8:240-41. 1918.

Ovine pyelonephritis (with W. L. Boyd and W. A. Billings). *Ibid.* 8:241-43. 1918.

The use of dichloramin-T in veterinary practice (with W. L. Boyd and W. A. Billings). *Ibid.* 8:292-96. 1918.

Catarrhal enteritis complicated by sarcoma of the spinal meninges (with W. L. Boyd and W. A. Billings). *Ibid.* 8:296-98. 1918.

Melanosis (with W. L. Boyd and W. A. Billings). *Ibid.* 9:56-60. 1919.

Preliminary report on value of blood tests in control of contagious abortion (with W. L. Boyd and W. A. Billings). *Journal of the American Veterinary Medical Association* (n. s.) 7:681-702. 1919.

HOWARD CARL HENRY KERNKAMP, D.V.M., Assistant Professor of Veterinary Medicine

Salt poisoning in swine. *Cornell Veterinarian* 9:58-61. 1919.

AGRICULTURAL EXTENSION

WILLIAM LANE CAVERT, M.S., Instructor

Shall I buy a tractor? (with C. D. Patterson and J. L. Mowry). St. Paul: The University of Minnesota Agricultural Extension Division. *Special Bulletin* no. 31. 1918. 12 pages.

JAMES MEDDICK DREW, Instructor in Farm Practicums

Splicing rope. *Minnesota Farmers' Institute Annual* 31:98-101. 1918.

A new idea for college commencements. *Rural New-Yorker* 78:698.

Fastening guy lines. *Farm Journal* 42:47. 1918.

The bowline knot. *Ibid.* 43:77. 1919.

ARTHUR JAMES MCGUIRE, B.Agr., Reclamation and Livestock Specialist

Dairying and general farming for the timbered section. A special report of the North Central Experiment Station, Grand Rapids, Minnesota. St. Paul: The University of Minnesota Agricultural Experiment Station. 1919. 37 pages.

Coöperative creameries of Minnesota. *Hoards Dairymen* 56:732. 1918.

Records of dairy production and profits. *The Creamery Journal* 30:10. 10:10. 1919.

- ARNE GOTFRED TOLAAS, M.S., Extension Specialist in Plant Pathology
 Potato improvement in Minnesota. *Bulletin* no. 4. Wisconsin Potato Growers' Association. 1919.
 Improve the potato crop (with G. R. Bisby and Richard Wellington). St. Paul: The University of Minnesota Extension Division. *Special Bulletin* no. 35. 1919. 8 pages.

THE LAW SCHOOL

- ANDREW ALEXANDER BRUCE, B.A., LL.B., Professor of Law
 Interstate commerce and child labor. *Minnesota Law Review* 3:89-104. 1919.
Review of
 Joseph Story, Commentaries on equity jurisprudence. *Ibid.* 3:437. 1919.
 EVERETT FRASER, LL.B., Professor of Law
 Future interests in property in Minnesota. *Minnesota Law Review* 3:320-41. 1919.
 Validity of a perpetual trust. *Ibid.* 3:39-43. 1919.
Review of
 Kales' cases on future interests in property. *Ibid.* 3:215-16. 1919.

THE MEDICAL SCHOOL

- ELIAS POTTER LYON, Ph.D., M.D., Dean of the Medical School, Professor of Physiology, and Director of the Department of Physiology
 Note on the geotropism of paramecium. *Biological Bulletin of the Marine Biological Laboratory, Woods Hole, Mass.* 34:120. 1918.
 The medical schools and hospital standardization. Published by the American College of Surgeons. 1918. 6 pages.
 Blood pressure in shock and the shock problem. Preliminary abstract. *American Journal of Physiology* 45:543. 1918.
 Graduate education in the clinical branches and the Minnesota experiment. *Journal of the American Medical Association* 69:1307-13. 1917.
 The effect of iodine upon the unfertilized and fertilized eggs of sea urchins. Preliminary abstract. *Journal of Pharmacology and Experimental Therapeutics* 11:185. 1918.
 Question mark or easy mark. *Texas State Medical Journal* 14:159. 1918.
 The problem of humidity indoors. *Minnesota Medicine* 1:445-52. 1918.
 A new plan of clinical teaching for the University of Minnesota Medical School. *Minnesota Medicine* 2:149-51. 1919.

ANATOMY

- CLARENCE MARTIN JACKSON, M.S., M.D., Professor and Director of the Department of Anatomy
 The postnatal development of the suprarenal gland and the effects of inanition upon its growth and structure in the albino rat. *American Journal of Anatomy* 25:221-89. 1919.
 The effects of underfeeding and refeeding upon the growth of the various systems and organs of the body (with C. A. Stewart). *Minnesota Medicine* 1:403-14. 1918.
 Recovery of normal weight in the various organs of albino rats on refeeding after underfeeding from birth for various periods (with C. A. Stewart). *American Journal of Diseases of Children* 17:329-52. 1919.
 The effects of inanition in the young upon the ultimate size of the body and of the various organs in the albino rat (with C. A. Stewart). Abstract. Proceedings of the American Association of Anatomists. *Anatomical Record* 16:153. 1919.

RICHARD EVERINGHAM SCAMMON, Ph.D., Professor of Anatomy

- On the time of the post-natal obliteration of the fetal blood-passages (foramen ovale, ductus venosus, ductus arteriosus) (with E. H. Norris). *Anatomical Record* 15:165-80. 1918.
- On the development and finer structure of the corpus adiposum buccae. *Ibid.* 15:267-87. 1918.
- Some peculiarities of the growth of the human uterus. *Ibid.* 16:163. 1919.
- Some graphs and tables illustrating the growth of the human stomach. *American Journal of Diseases of Children* 17:395-422. 1919.

ANDREW THEODORE RASMUSSEN, Ph.D., Assistant Professor of Neurology

- Cyclic changes in the interstitial cells of the ovary in the woodchuck (*Marmota monax*). Abstract. Proceedings of the American Association of Anatomists. *Anatomical Record* 14:48. 1918.
- Cyclic changes in the interstitial cells of the ovary and testis in the woodchuck (*Marmota monax*). *Endocrinology* 2:353-404. 1918.
- The mitochondrial content of the principal cells of the central nervous system during hibernation in the woodchuck (*Marmota monax*). *Ibid.* 16:160-61. 1919.

JAY ARTHUR MYERS, Ph.D., Instructor in Anatomy

- Studies on the mammary gland. V. The effects of inanition on the developing mammary glands in male and female albino rats from birth to ten weeks of age. *American Journal of Diseases of Children* 17:311-28. 1919. Abstract in *Anatomical Record* 16:159. 1919. VI. The development of the mammary gland from its earliest appearance to the period of pregnancy. *American Journal of Diseases of Children* 18:4-13. 1919. VII. The distribution of the subcutaneous fat and its relation to the developing mammary glands in male and female albino rats from birth to ten weeks of age (with Frank J. Myers). Abstract. *Anatomical Record* 16:159. 1919.

CHESTER ARTHUR STEWART, M.D., Ph.D., Instructor in Anatomy

- The effects of underfeeding and refeeding upon the growth of the various systems and organs of the body (with C. M. Jackson). *Minnesota Medicine* 11:403-14. 1918.
- Recovery of normal weight in the various organs of albino rats on refeeding after underfeeding from birth for various periods (with C. M. Jackson). *American Journal of Diseases of Children* 17:329-52. 1919.
- The effects of inanition in the young upon the ultimate size of the body and of the various organs in the albino rat (with C. M. Jackson). Abstract. Proceedings of the American Association of Anatomists. *Anatomical Record* 16:153. 1919.

MEDICINE

LEONARD GEORGE ROWNTREE, M.D., D.Sc., Professor of Medicine and Chief of the Department of Medicine

- Myrtol poisoning, with comments upon the toxicity of eucalyptus oil and myrtol in human beings and in animals (with Lewellyn F. Barker). *Transactions of the Association of American Physicians* 33:187-202. 1918.

SOLON MARX WHITE, B.S., M.D., Professor of Medicine

- The Eggleston method of administering digitalis, with some notes on digitalis lutea. *Archives of Internal Medicine* 21:740-78. 1918.

SAMUEL EDWARD SWEITZER, M.D., Associate Professor of Dermatology and Syphilis

- Radium in dermatology. *Journal-Lancet* 39 no. 9:228. 1919.
- Sarcoid of Boeck and erythema induratum of Bazin. *Journal of Cutaneous Diseases* 37:98-105. 1919.

GRETE EGERER, Ph.D., Assistant Professor of Medical Chemistry

The probable cause for the failure of some sodium tungstates to give a suitable reagent for the determination of uric acid. *Proceedings of the Society for Experimental Biology and Medicine* 16:10-11. 1918.

Picramic acid as a standard in colorimetric determination of nitrogen by Nessler's method. *Journal of Laboratory and Clinical Medicine* 4:439-42. 1919.

ERNEST THOMPSON FRASER RICHARDS, M.D., C.M., Assistant Professor of Medicine

A medical service with the British Expeditionary Forces in France. *Minnesota Medicine* 2:41-47. 1919.

Abstracts of

F. C. Shattuck and C. H. Lawrence, Acute lobar pneumonia. *Minnesota Medicine* 1:319. 1918.

R. G. Snyder, A clinical report of nonspecific protein therapy in the treatment of arthritis. *Ibid.* 1:395-96. 1918.

J. Morrison Hutchenson and S. W. Budd, A vaccine for the treatment of bronchial asthma: report of twenty cases. *Ibid.* 1:482-83. 1918.

Russell L. Cecil, Sensitized vaccines in the prophylaxis and treatment of infections. *Ibid.* 2:111-13. 1919.

OLGA S. HANSEN, B.S., M.D., Instructor in Medicine

A case of post-vaccination tetanus. *Journal-Lancet* 38:447. 1918.

The electrocardiograph in the diagnosis of heart disease. *Minnesota Medicine* 2:17-18. 1919.

RALPH EDWIN MORRIS, M.D., D.Sc., Instructor in Medicine

The graphic recording of reflexes, clonus and tremors. *Minnesota Medicine* 2:237-53. 1919.

FREDERICK WILLIAM WITTICH, M.A., M.D., Instructor in Medicine

Information for the tuberculous. St. Louis: C. V. Mosby Company. 1918. 150 pages.

OBSTETRICS AND GYNECOLOGY

ALBERT G. SCHULZE, M.D., Instructor in Obstetrics

Reviews of

Joseph B. De Lee, Principles and practice of obstetrics. *Minnesota Medicine* 2:113. 1919.

Frederick E. Leavitt, The operations of obstetrics. *Ibid.* 2:280. 1919.

OPHTHALMOLOGY AND OTO-LARYNGOLOGY

WILLIAM ROBBINS MURRAY, Ph.B., M.D., F.A.C.S., Associate Professor of Ophthalmology and Oto-Laryngology and Acting Director of the Department of Ophthalmology and Oto-Laryngology

Anterior chamber and pupil (digest of the literature for the year 1918). *American Journal of Ophthalmology* 2:76-81. 1919.

HOWARD SHOEMAKER CLARK, B.S., M.D., Assistant Professor of Ophthalmology and Oto-Laryngology

Familial macular degeneration with and without dementia with report of two new cases with dementia. *Journal of the American Medical Association* 71 20 22:1799. 1918.

PATHOLOGY, BACTERIOLOGY, AND PUBLIC HEALTH

HAROLD EUGENE ROBERTSON, B.A., M.D., Professor of Pathology and Bacteriology and Director of the Department of Pathology and Bacteriology

Pathology of influenzal bronchopneumonia. *Journal-Lancet* 39:273-75. 1919.

WINFORD PORTER LARSON, M.D., Professor of Bacteriology

The perfusion experiment in the study of cellular anaphylaxis (with E. T. Bell). *Journal of Infectious Diseases* 24:185-90. 1919.

The effect of surface tension of culture medium upon the growth of bacteria. *Ibid.* 25:41-46. 1919.

ELEXIOUS THOMPSON BELL, B.S., M.D., Associate Professor of Pathology

The perfusion experiment in the study of cellular anaphylaxis (with W. P. Larson). *Journal of Infectious Diseases* 24:185-90. 1919.

Effect of foreign protein on the kidney (with Hartzell). *Ibid.* 24:618-27. 1919.

Spontaneous nephritis in rabbits and its relation to chronic nephritis in man (with Hartzell). *Ibid.* 24:628-35. 1919.

MOSES BARRON, M.D., Assistant Professor of Pathology

Pathology of (mustard?) gas inhalation (with Covey). *American Journal of the Medical Sciences* 157:808-26. 1919.

Diphtheria at a hospital center (with Bigelow). *Journal of Infectious Diseases* 25:58-73. 1919.

ANNE GERTRUDE BENTON, M.A., Instructor in Pathology and Bacteriology

Studies in the nitrogen metabolism of bacteria. *Journal of Infectious Diseases* 25:231-47. 1919.

HAROLD SHEELY DIEHL, B.S., M.D., Instructor in Bacteriology

The specificity of bacterial proteolytic enzymes and their formation. *Journal of Infectious Diseases* 24:247-361. 1919.

SIEGFRIED FREDERICK HERRMANN, B.S., M.D., Assistant in Bacteriology

Liberation of antibodies on injection of foreign proteins. *Journal of Infectious Diseases* 23:457-69. 1918.

EDGAR HUGHES NORRIS, B.S., M.A., Instructor in Pathology

Multiple vascular anomalies in the heart and great vessels of a newborn child (with Loana M. Miller). *American Journal of Obstetrics and Diseases of Women and Children* 78:668. 1918.

MARGARET WARWICK, M.D., Instructor in Pathology

Cerebral hemorrhage of the new born. *American Journal of the Medical Sciences* 158:95-105. 1919.

PEDIATRICS

WALTER REEVE RAMSEY, M.D., Associate Professor of Pediatrics

The relative efficiency of the different mercurial preparations in the treatment of congenital syphilis in infants and children as determined by a quantitative analysis of the mercury eliminated in the urine (with Mildred R. Ziegler). *American Journal of Diseases of Children* 16:299-306. 1918.

EDGAR JOHN HUENEKENS, B.A., M.D., Assistant Professor of Pediatrics

The Minnesota plan for the establishment of infant welfare clinics in smaller towns. *Archives of Pediatrics* 35:718-22. 1918.

- ROOD TAYLOR, M.D., Ph.D. in Pediatrics, Assistant Professor of Pediatrics
 The artificial feeding of infants. *Journal-Lancet* 38:433-36. 1918.
 Treatment of prematurity. *Journal of the American Medical Association* 71:1123-27.
 1918.
 The relationship between tonsillar infection and recurrent vomiting. *Minnesota Medicine*
 2:61-66. 1919.
 The measurements of 250 full-term new-born infants. *American Journal of Diseases*
of Children 17:353-62. 1919.

FREDERICK CONSTANS RODDA, M.D., Instructor in Pediatrics

- The heart in infancy and childhood. *Journal-Lancet* 39:310-13. 1919.

MILDRED R. ZIEGLER, B.A., M.S., Instructor in Pediatrics

- The relative efficiency of the different mercurial preparations in the treatment of
 congenital syphilis in infants and children as determined by a quantitative
 analysis of the mercury eliminated in the urine (with W. R. Ramsey). *Ameri-
 can Journal of Diseases of Children* 16:299-306. 1918.

NABOTH OSBORNE PEARCE, M.D., Assistant in Pediatrics

- The review of recent literature on the new-born. *American Journal of Diseases of*
Children 17:363-74; 18:51-68; 133-48; 207-23. 1919.
 Children of the war zone (with J. P. Sedgwick). *Journal of the American Medical*
Association 71:358-59. 1918.

PHARMACOLOGY

ARTHUR DOUGLASS HIRSCHFELDER, B.S., M.D., Professor of Pharmacology
 and Director of the Department of Pharmacology

- Diseases of the heart and aorta. Philadelphia: J. B. Lippincott. Third edition.
 1918. 732 pages.
 The teaching of pharmacology. Chairman's address read before the Section on
 Pharmacology and Therapeutics, American Medical Association. *Journal of the*
American Medical Association 71:609. 1918.
 Clinical studies on the effects of louse bites—pediculus corporis (with W. Moore).
Archives of Internal Medicine 23:419. 1919.

EDGAR DEWIGHT BROWN, Pharm.D., M.D., Associate Professor of Phar-
 macology

- The acidity of some plants due to a mechanical action (with D. D. Anderson).
The Journal of Pharmacology and Experimental Therapeutics 12:37-43. 1918.

PHYSIOLOGY

JESSE F. MCCLENDON, M.S., Ph.D., Associate Professor of Physiology

- Note on the ultramicroscopy of egg albumin (with H. J. Prendergast). *Journal of*
Biological Chemistry 38:531. 1919.
 The hydrogen ion concentration of foods (with Paul F. Sharp). *Ibid.* 38:535. 1919.
 Factors influencing the hydrogen ion concentration of the ileum (with Frank J.
 Myers, Leo C. Culligan, and Carl S. Gydesen). *Ibid.* 38:539. 1919.
 Effect of diet on the alkaline reserve of the blood (with L. Von Meysenbug, O. J.
 Engstrand, and Frances King). *Ibid.* 38:549. 1919.

SURGERY

JAMES FRANK CORBETT, M.D., F.A.C.S., Associate Professor of Surgery

- The treatment of peripheral nerve injuries. *Review of War Surgery and Medicine*
 1:40-48. 1918.
 Lesions of peripheral nerves. *International Abstract of Surgery* 28:105-12. 1919.

ARCHIBALD McLAREN, B.S., M.D., Associate Professor of Surgery

The abdominal incision: when not to use stitches. *American Surgical Association Transactions* 36:473-82. 1918.

ARTHUR T. MANN, S.B., M.D., F.A.C.S., Associate Professor of Surgery

Surgical complications in influenza. *Journal-Lancet* 30:284-86. 1919.

ARTHUR CLARENCE STRACHAUER, M.D., F.A.C.S., Associate Professor of Surgery

A new principle in the surgical treatment of brain tumors. *Journal of the American Medical Association* 71:887-89. 1918.

FRANKLIN RANDOLPH WRIGHT, M.D., D.D.S., F.A.C.S., Assistant Professor of Urology

Shall operation for hypertrophied prostate be done in two stages. *Surgery, Gynecology, and Obstetrics* 28:56-58. 1919.

WALTER A. FANSLER, M.A., M.D., Instructor in Surgery

The ambulatory treatment of hemorrhoids. *Minnesota Medicine* 11:426-28. 1918.

Anal fissure. *Journal-Lancet* 39:346-47. 1919.

THE SCHOOL FOR NURSES

GERTRUDE THOMAS, Instructor in Dietetics

Department of dietetics in the University of Minnesota Hospital. *The Modern Hospital Magazine* 12:213-14. 1919.

THE COLLEGE OF DENTISTRY

PROSTHETICS

LEHMAN WENDALL, B.S., D.D.S., Instructor in Prosthetics and Orthodontia

Some thoughts on dental bridgework. *Dental Items of Interest* Nov., 1918.

THE SCHOOL OF MINES

EDWARD WILSON DAVIS, B.S., E.E., Superintendent of the School of Mines Experiment Station

The Mines Experiment Station and its relation to the iron mining industry of Minnesota. Minneapolis: The University of Minnesota. 1919. 12 pages.

Fine crushing in ball-mills. *Transactions of the American Institute of Mining Engineers* 49 pages. February, 1919.

THE COLLEGE OF PHARMACY

FREDERICK JOHN WULLING, Phm.G., Phm.D., LL.M., Phm.M (honoris causa), etc., Dean of the College of Pharmacy, Professor of Pharmacology, and Director of the University Medicinal Plant Gardens

More consistent pharmaceutical standards. *Journal of the American Pharmaceutical Association* 7:795-99. 1918.

So-called commercial pharmacy should not be taught at colleges of pharmacy. *Ibid.* 7:872-74. 1918.

Pharmacy recognized by the government. *Northwestern Druggist* 19:23-24. 1918.

- So-called commercial pharmacy and colleges of pharmacy. *Ibid.* 19:33-34. 1918.
 Present dual type drug store may be prohibited. *Ibid.* 27:32-33. 1919.
 More consistent pharmaceutical standards. *Ibid.* 27:32-34. 1919.
 Pharmacists in the war. *Ibid.* 27:34-38. 1919.
 The formulation and conduct of the proceedings of the scientific and practical section of the Minnesota State Pharmaceutical Association, February, 1919. *Minnesota State Pharmaceutical Association Proceedings* 35. 1919.
 The College of Pharmacy of the University of Minnesota. (Historical.) *Ibid.* 1919.

PHARMACOGNOSY

EDWIN LEIGH NEWCOMB, Pharm.D., Associate Professor of Pharmacognosy

- The relative activity of separated portions of digitalis (with C. H. Rogers). *American Journal of Pharmacy* 90:580-88. 1918.
 Report of thirty-ninth convention Iowa Pharmaceutical Association. *Northwestern Druggist* 69:43-50. 1918.
 Report of sixty-sixth convention American Pharmaceutical Association. *Ibid.* 19:30-32. 1918.
 Books for pharmacists. *Ibid.* 19:27-29. 1918.
 Report of fortieth convention Iowa Pharmaceutical Association. *Ibid.* 27:27-32. 1919.
 Report of thirty-fifth convention Minnesota Pharmaceutical Association. *Ibid.* 27:45-48. 1919.
 Report of 1918 convention Wisconsin Pharmaceutical Association. *Ibid.* 19:50. 1918.
 Editor, *Northwestern Druggist*, St. Paul. Special editorials as follows: Restricting the sale of medicines; The itinerant drug vendor; Two classes of pharmacists and a federation of pharmacy; The pharmacist as a business man; Camouflage in pharmacy; Progress in pharmacy; Prerequisite legislation; Era of prosperity assured; Food formula bills; Federating pharmacy; New northwestern laws affecting drug business.

PHARMACY

GUSTAV BACHMAN, Phm.D., Phm.M., Associate Professor of Pharmacy

- The quality of our drugs and medicines. *Northwestern Druggist* 27:32-34. 1919.
 Drug adulteration. *Minnesota State Pharmaceutical Association Proceedings* pages 118-21. 1918.

THE SCHOOL OF CHEMISTRY

EVERHART PERCY HARDING, Ph.D., Associate Professor of Chemistry

- A proximate analysis of the seed of the common pigweed, *Amaranthus Retroflexus* (with Walter A. Egge). *The Journal of Industrial and Engineering Chemistry* 10 no. 7. 1918.

WILLIAM HAMMETT HUNTER, Ph.D., Associate Professor of Chemistry

- The Jones process for concentrating manganese ores (with P. Christianson). Bureau of Mines Publication. *War Minerals Investigation Series* no. 12.

THE COLLEGE OF EDUCATION

ART EDUCATION

RUTH RAYMOND, Assistant Professor of Art Education

- Reconstruction in art education. *Proceedings Western Arts Association.* 1919.

HISTORY AND PHILOSOPHY OF EDUCATION

FLETCHER HARPER SWIFT, B.D., Ph.D., Professor of Education

Education in ancient Israel from earliest times to 70 A.D. Chicago: The Open Court Publishing Company. 1919. 134 pages.

THEORY AND PRACTICE OF TEACHING

FRANCES MILTON MOREHOUSE, M.A., Instructor in History, University High School

The method content of college teachers' courses. *Educational Administration and Supervision* 4:351-57. 1918.

The war test of the schools. *School and Home Education* 38:160-65. 1919.

EDUCATIONAL PSYCHOLOGY

MARVIN JAMES VAN WAGENEN, Ph.D., Assistant Professor of Educational Psychology

An investigation into the amount of improvement in ability to write English composition. (Report of the Bureau of Coöperative Research, 1917-18.) *Bulletin of the University of Minnesota* 22 no. 5:1-18. 1919.

Our schools as measured by the army tests. *Educational Administration and Supervision* 5:163-76. 1919.

Has the college student reached his mental maturity when he enters college? *School and Society* 9:663-66. 1919.

THE GRADUATE SCHOOL

MAYO FOUNDATION FOR MEDICAL RESEARCH

MEDICINE

HENRY STANLEY PLUMMER, M.D., Professor of Medicine

Classification of goiters. *Medical Record* 95:1074-75. 1919.

HERBERT ZIEGLER GIFFIN, B.S., M.D., Associate Professor of Medicine

Splenectomy following radium treatment formyelocytic leukemia. *Medical Record* 94:1020-23. 1918.

Clinical observations concerning the fragility of erythrocytes. *Journal of Laboratory and Clinical Medicine* 4:465-78. 1919.

ARCHIBALD HODGE LOGAN, M.D., Associate Professor of Medicine

Chronic ulcerative colitis. A review of 117 cases. *Northwest Medicine* 18:1-9. 1919.

JOHN HINCHMAN STOKES, B.A., M.D., Assistant Professor of Dermatology

Observations on the intensive combined treatment of syphilis. *Mississippi Valley Medical Journal* 25:11-16. 1918.

The third great plague. *Journal-Lancet* 38:236. 1918.

The venereal disease problem and the war. *International Association of Medical Museums* 7:275-326. 1918.

Medical coöperation in the problem of war syphilis. *Minnesota Medicine* 11:341-50. 1918.

Atropin and induced antianaphylaxis as a protection against acute arsphenamin reactions. *Journal of the American Medical Association* 72:241-43. 1919.

Clinical studies in cutaneous aspects of tuberculosis. I. "Tuberculous" purpura, erythema multiforme and erythema nodosum. *American Journal of the Medical Sciences* 157:157-70. 1919. II. The diagnostic and clinical relations of certain tuberculids. *Ibid.* 157:313-48. 1919. III. The therapeutic management of the tuberculosis with special reference to the efficiency of arsphenamine. *Ibid.* 157:522-39. 1919.

WILLIS STORRS LEMON, M.B., Instructor in Medicine

Chondroma of the thorax. *Journal-Lancet* 39:59-60. 1919.

LEDA JUNE STACY, M.D., Instructor in Medicine

The treatment of menorrhagia with radium. *Minnesota Medicine* 2:88-92. 1919.

HENRY W. WOLTMANN, B.S., M.D., Ph.D. in Neurology, Instructor in Medicine

The nervous symptoms in pernicious anemia: an analysis of one hundred and fifty cases. *American Journal of the Medical Sciences* 157:400-409. 1919.

OPHTHALMOLOGY AND OTO-LARYNGOLOGY

HAROLD I. LILLIE, B.A., M.D., Assistant Professor of Otology, Rhinology, and Laryngology

Tonsillectomy in myositis and arthritis. Results in two hundred consecutive cases (with H. R. Lyons). *Journal of the American Medical Association* 72:1214-16. 1919.

GORDON BALGARNIE NEW, D.D.S., M.B., M.D., Assistant Professor of Rhinology, Laryngology, and Stomatology

The use of heat and radium in the treatment of cancer of the jaws and cheeks. *Journal of the American Medical Association* 71:1369-70. 1918.

Ankylosis of the jaw due to fixation of the temporal muscle. *Ibid.* 73:264-65. 1919.

Amyloid tumors of the upper air passages. *Laryngoscope* 29:327-41. 1919.

Rhinophyma. *Ibid.* 29:391-95. 1919.

ROY A. BARLOW, M.D., Instructor in Rhinology and Oto-Laryngology

Case of acute appendicitis: suppurative pylephlebitis recovery. *Lancet* no. 1:844. 1919.

PATHOLOGY AND BACTERIOLOGY

EDWARD CARL ROSENOW, M.D., Professor of Experimental Bacteriology

The etiology and treatment of acute poliomyelitis. *Journal-Lancet* 38:624-25. 1918.

Prophylactic inoculation against respiratory infections during the present pandemic of influenza. Preliminary report. *Journal of the American Medical Association* 72:31-34. 1919.

Studies in influenza and pneumonia II. The experimental production of symptoms and lesions simulating those of influenza with streptococci isolated during the present pandemic. *Ibid.* 72:1604-9. 1919.

A method for the preparation of prophylactic and autogenous lipovaccines (with A. E. Osterberg). *Ibid.* 73:87-91. 1919.

Study X. The etiology and treatment of acute poliomyelitis. *Minnesota Medicine* 2:253-56. 1919.

WILLIAM CARPENTER MACCARTY, M.S., M.D., Associate Professor of Pathology

The need and value of biopathological standardization. *Surgery, Gynecology, and Obstetrics* 27:523-27. 1918.

Clinical efficiency and terminology in cancer of the breast (with H. M. Conner). *Ibid.* 29:44-51. 1919.

The frequency of "strawberry" gallbladder. *Annals of Surgery* 69:131-34. 1919.

A biological conception of neoplasia, its terminology and clinical significance. *American Journal of the Medical Sciences* 157:657-74. 1919.

ARTHUR HAWLEY SANFORD, M.A., M.D., Associate Professor of Clinical Bacteriology and Parasitology

Clinical observations concerning the fragility of erythrocytes (with H. Z. Giffin). *Journal of Laboratory and Clinical Medicine* 4:465-78. 1919.

PHYSIOLOGY AND PHYSIOLOGIC CHEMISTRY

EDWARD CALVIN KENDALL, Ph.D., Associate Professor of Biochemistry

The active constituent of the thyroid, chemical groups that are responsible for its physiologic activity. *Journal of the American Medical Association* 71:871-73. 1918.

The thyroid hormone and its relation to the other ductless glands. *Endocrinology* 2:81-93. 1918.

The physiologic action of thyroxin. *Ibid.* 3:156-63. 1919.

The use of turpentine resin in turpentine as a foam breaker. *Journal of Biological Chemistry* 38:529. 1919.

ROENTGENOLOGY

RUSSELL DANIEL CARMAN, M.D., Professor of Roentgenology

Roentgenologic aspects of hour-glass stomach. *Surgery, Gynecology, and Obstetrics* 27:426-37. 1918.

SURGERY

WILLIAM FREDERICK BRAASCH, B.S., M.D., Professor of Urology

Roentgenographic diagnosis in renal tuberculosis (with F. A. Olson). *Surgery, Gynecology, and Obstetrics* 28:555-61. 1919.

CHARLES HORACE MAYO, M.A., M.D., D.Sc., LL.D., Professor of Surgery

Fistula of the colon. *Annals of Surgery* 68:211-13. 1918.

The principles of the thyroid surgery. *Journal of the American Medical Association* 71:710-15. 1918.

The treatment of peptic ulcer by gastro-enterostomy. *Minnesota Medicine* 2:1-4. 1919.

The relation of mouth conditions to general health. *Journal of the National Dental Association* 6:505-12. 1919.

DONALD CHURCH BALFOUR, M.B., M.D., Associate Professor of Surgery

Primary retrograde intussusception of the sigmoid associated with tumor. *Annals of Surgery* 68:588-90. 1918.

Polyposis of the stomach. *Surgery, Gynecology, and Obstetrics* 28:465-67. 1919.

The utility of end-to-end anastomosis between small and large intestine. *Ibid.* 27:249-52. 1918.

Cancer of the thyroid gland. *Medical Record* 94:846-50. 1918.

MELVIN STARKEY HENDERSON, M.B., M.D., Associate Professor of Orthopedic Surgery

Loose osteocartilaginous bodies in the shoulder joint. *American Journal of Orthopedic Surgery* 16:488-500. 1918.

Osteocartilaginous joint bodies. *Railway Surgery Journal* 25:49-53. 1918.

Mechanical derangement of the knee joint. *Journal-Lancet* 38:523-29. 1918.

Derangements of the semilunar cartilages of the knee joint. *Minnesota Medicine* 2:138-42. 1919.

Fractures considered as potential deformities. *Ibid.* 2:163-68. 1919.

Ankylosis of the jaw (with G. B. New). *Surgery, Gynecology, and Obstetrics* 27:451-58. 1918.

EDWARD STARR JUDD, M.D., Associate Professor of Surgery

- Diverticula of the bladder. *Annals of Surgery* 68:298-305. 1918.
 War surgery. *Journal-Lancet* 38:617-20. 1918.
 Papillary tumors of the pelvis of the kidney. *Ibid.* 247-53. 1919.
 Carcinoma of the small intestine. *Ibid.* 150-59. 1919.
 Prostatic calculi. *Minnesota Medicine* 2:52-56. 1919.
 Extopic or pelvic kidney. *Surgery, Gynecology, and Obstetrics* 28:446-51. 1919.
 Tumors of the urinary bladder (with S. W. Harrington). *Southern Medical Journal* 11:129-38. 1918.

FRANK CHARLES MANN, M.A., M.D., Associate Professor of Experimental Surgery and Pathology

- Further experimental study of surgical shock. *Journal of the American Medical Association* 71:1184-88. 1918.
 Studies on experimental surgical shock. I-IV. *American Journal of Physiology* 47:231-50. 1918.
 The secretory pressure of the liver with special reference to the presence or absence of a gallbladder (with J. P. Foster). *Ibid.* 47:278-82. 1918.
 A method for preserving a sharp scalpel in experimental surgery. *Journal of Laboratory and Clinical Medicine* 4:378. 1919.
 Turkish wash cloths for packs in experimental surgery. *Ibid.* 4:639. 1919.

WALTER E. SISTRUNK, Phm.G., M.D., Associate Professor of Surgery

- Further experiences with the Kondoleon operation for elephantiasis. *Journal of the American Medical Association* 71:800-806. 1918.
 Practical considerations with regard to permanent colostomies. *Surgery, Gynecology, and Obstetrics* 28:436-39. 1919.

JAMES CARRUTHERS MASSON, M.D., Assistant Professor of Surgery

- Exposure in gallbladder surgery. *Annals of Surgery* 69:422-24. 1919.
 An extra tag on the abdominal sponge. *Journal of the American Medical Association* 72:11612-13. 1919.

JOHN LEWIS CRENSHAW, M.D., Instructor in Urology

- Prostate calculi (with E. S. Judd). *Minnesota Medicine* 2:52-56. 1919.

HENRY WILLIAM MEYERDING, B.S., M.D., M.S. in Orthopedic Surgery, Instructor in Orthopedic Surgery

- Cystic and fibrocystic disease of the long bones. *American Journal of Orthopedic Surgery* 16:253-76; 367-82. 1918.

JOHN DE JARNETTE PEMBERTON, B.A., M.D., M.S. in Surgery, Instructor in Surgery

- Blood transfusion. *Surgery, Gynecology, and Obstetrics* 28:262-76. 1919.

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