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The President's Report for the Year 1917-1918

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THE PRESIDENT'S REPORT FOR THE YEAR 1917-18

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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 the following report covering the period from July 1, 1917, to July 31, 1918. The last annual report (1916-17) of President Vincent deals with the period which ended on June 30, 1917. I assumed the Presidency of the University on July 1, 1917. In order, therefore, to keep our records complete, it seems necessary to have this my first annual report cover the thirteen months falling between July 1, 1917, and the close of the fiscal year on July 31, 1918.

Particular attention should be called to the fact that I have presented in the *Twentieth Biennial Report of the Board of Regents* dealing with the period from August 1, 1916, to July 31, 1918, an extended and somewhat detailed statement of the activities of the University for the biennium there under review. The last year of that biennium was the first year of the present administration with which this report deals. It seems quite unnecessary to repeat here the report which is presented there. Those desiring to obtain further information regarding the year under review in this report, and particularly to see its relationship to the preceding year, are referred to pages 34-134 of the *Twentieth Biennial Report of the Board of Regents.* In that report I have dealt with the statistics of registration, the chief facts relating to students, the outstanding changes in the administrative staff, and several matters of primary concern to the teaching force. I have also endeavored to set forth the effects of the war upon the University and to indicate the many adjustments which were made to meet war conditions. Likewise, I have ventured to indicate there the chief improvements in educational organization and the more notable developments of educational policy during the last two years. Similarly, I have described the more significant developments in both administrative organization and policy.

This report, dealing as it must with the last year of the same period, will be found to differ from the twentieth biennial report in two outstanding respects. In the first place, this volume contains the important annual reports of the Deans, Directors, and

executive officers of the various schools, colleges, departments, and other administrative units which constitute the University. While in this report an effort is made in the "survey of the colleges" to set forth the salient features of those reports, it scarcely needs to be pointed out that the reports themselves contain invaluable material for anyone seeking a real understanding of the actual work of the University. In the second place, I shall endeavor in this report for the first time briefly to outline some of the general questions of primary importance to the University as a whole and to suggest possible solutions for some of these problems.

GENERAL UNIVERSITY PROBLEMS

The report of the President of the University is not necessarily confined to a recital of the events of the past. To be sure, an official record of the activities of the year is essential. It enables one to take a bird's-eye view of the institution and to cast up balances. It sets forth in clear relief the outstanding accomplishments of the year.

Nevertheless, such a report, to be of the highest value, must endeavor to interpret those facts. The real life of a university can never be depicted adequately by a catalog of events. I conceive of an annual report, therefore, as dealing not only with the past but also with the future. With the record of the past as a basis and with the existing facts and conditions as the elements of our problem, it becomes our duty to face the future squarely and to recognize candidly what the chief tasks are upon which we should concentrate our attention and effort. An annual report, because of the conditions which it finds in the year under consideration, should point out the plans by which any unsatisfactory conditions can be corrected. It should seek to set forth the policies and principles which may become the subject of serious discussion among all those primarily concerned for the welfare of the institution, and thus utilize all of the resources of the institution in meeting all of its larger issues of common concern. By such a method, progress may be made more quickly, many of our problems may be anticipated before they reach an acute stage, and many genuinely constructive policies may be adopted.

Moreover, as a state institution we must be peculiarly responsive to the needs of a great developing commonwealth. Inevitably we hold intimate relationships to the people. What we do is of real interest not only to the students, the alumni, and the Faculty, but to every citizen of Minnesota. It is our duty to place at the disposal of the public all of the facts about the University. We shall be guilty of the breach of a public trust if we fail candidly to report, not only what has been done, but what must be done in the future if the institution is to be in a position to realize its high aims and to serve the young people of the state as it should. Therefore no apologies need be made for setting forth our needs and for expressing the confidence that the state will meet any reasonable request.

In dealing with our general problems, it must be pointed out that the University does not consider its needs paramount to all other interests of the State of Minnesota. We fully realize that the first duty of the state government is to maintain strongly its own existence, to uphold the constitution and laws of the state, and to provide adequately for all of its dependents. University interests are not urged to the exclusion of other legitimate concerns. Nevertheless, the citizens of Minnesota commit to the University their most precious possessions. The state has no asset so valuable as the thousands of young men and young women who are seeking an education. They are the trained citizens of to-morrow upon whom the state must depend for intelligent leadership and loyal citizenship. If the war has established any truth it is that education and democracy are absolutely inseparable. Upon a high level of intelligence in our state depends its prosperity and its happiness. The standards of our civilization will be determined by our educational system. It is simply impossible for Minnesota to do too much for the education of her sons and daughters. It is from this point of view that we approach the consideration of our general university problems. It is our duty to set forth the facts, remembering at one and the same time that our interests are not paramount to those of all others, but that our welfare is of primary importance to the state, and intimately related to its future development.

THE GENERAL SALARY SITUATION

The most serious situation confronting the University is that of salaries. Obviously the most important factor in the maintenance of an educational institution is the teaching force. Nothing can take the place of strong, virile teaching in the classroom and laboratory. A state or nation can practice no more short-sighted or expensive economy than to fail to pay a living wage to the men and women who teach its youth.

At the present moment America faces a very serious problem in the shortage of teachers. This statement applies to all grades and units of our educational system. The salaries of teachers have reached the point where they do not compare favorably with those of barbers, mechanics, and common laborers. The inevitable result is that men and women who should be teaching our young people are engaged in other occupations. Even in our institutions of higher learning the same tendency is clearly evident. It is not possible to encourage promising scholars to enter upon the profession of teaching because salaries are so inadequate when compared with those paid in business or other professions. Anyone who enters upon teaching as a career to-day can not look forward with much assurance to the time when he will receive proper compensation for the services he is asked to render. He is compelled to spend from four to seven years in training beyond the high-school course. In return for this investment of time and money he receives a salary which makes it difficult if not impossible to maintain his self-respect. The University therefore is bound to suffer in two respects unless this condition is corrected at a very early date. (1) The supply of teachers for the future will be greatly diminished, and (2) the very best members of our present staff will be attracted either to other institutions which are in a position to pay more adequate salaries or to other fields of activity.

It is scarcely necessary to point out that the high cost of living has placed very heavy burdens upon all persons who live upon salaries. Since 1914 the prices of commodities have more than doubled. In other terms, the members of our staff have experienced a sharp reduction in income. It is not proposed, of course, that salaries should be doubled. Members of the Faculty, along with all other citizens, are willing to bear their share of the war burden. But has the state a right to expect its employees to

meet the existing conditions without a reasonable increase in salary? There is some probability that prices may decline during the coming year, but any prospective change can not possibly offset the tremendous handicap under which teachers have struggled in recent years.

In order that there may be no possible misunderstanding of the present situation, I wish to present a table showing the exact conditions which existed at the University in the spring of 1918. The first column represents the amounts of the individual salary classified in groups; the second column indicates the number of persons in each group; the third column gives the total amount of the salaries paid to each group; and the last column shows the average salary within each group.

Salary	Number of Persons	Total Salaries for Group	Average Salary
$ 0 to $ 500	179	$ 60,208	$ 336.35
501 to 1,000	359	288,057	802.38
1,001 to 1,500	200	260,013	1,300.00
1,501 to 2,000	130	236,230	1,817.15
2,001 to 2,500	90	215,929	2,399.21
2,501 to 3,000	65	185,250	2,850.00
3,001 to 3,500	43	148,100	3,444.18
3,501 to 4,000	17	64,950	3,820.58
4,001 to 4,500	12	53,400	4,450.00
4,501 to 5,000	11	55,000	5,000.00
5,001 up	14	86,450	6,175.00
	1,120	$1,872,094	

It will be observed that out of a staff of 1,120, there were 359 persons receiving salaries ranging between $501 and $1,000 annually. This group constitutes 32 per cent of the entire staff. Moreover, if the three groups receiving between $1,001 and $2,500 are added together they make a total of 420 more. In other words, 38 per cent of the entire staff was receiving annual salaries ranging between one thousand and twenty-five hundred dollars. If now we add together all those receiving salaries ranging from $501 to $2,500 inclusive, we have a total of 779 or 69 per cent of the entire staff. It should be observed that this statement does not include 179 other persons receiving less than $500 annually. We sometimes hear it remarked that large numbers of the staff receive unusually large salaries. This table shows that there are only eleven persons receiving between $4,501 and $5,000, and only 14 persons, including the president, deans, and executive officers, receiving more than $5,000 annually.

It is not difficult to suggest the solution for this problem. The University in fairness to the state must ask the Legislature for funds sufficient to correct the condition. Two facts deserve special consideration. (1) The lower rankings of the Faculty simply must receive larger salaries if they are to maintain their self-respect and be in a position to render valuable service; and (2) the whole question of the salary schedule must receive careful and decisive consideration. Attention must be given to the ultimate prospects which are to be held before teachers. If even at best the future of a professional career is discouraging, then undoubtedly the high quality of our faculties will rapidly deteriorate. We are being brought more and more into competition with commercial, industrial, and professional enterprises which will force us to adopt a more adequate salary scale or we shall lose our most desirable and valuable teachers. This statement applies particularly to our staff in Engineering, Chemistry, Mines, Medicine, Law, and Business Training.

We do not propose a "blanket increase" of all salaries. Each case should be decided upon its own merits, but in general it may reasonably be urged that marked improvement must be made immediately if we are to maintain our standards. Surely an average increase of 15 per cent to be distributed in accordance with the principles already suggested would be the very minimum which should be considered. The State of Minnesota should be counted among the agencies struggling to counteract the tendency toward a serious deterioration of the teaching profession. We have confidence to believe that the Legislature will recognize the seriousness of this situation and provide funds for its immediate correction.

Another important phase of the salary situation arises in connection with the need for more teachers. In the twentieth biennial report of the Regents (p. 63 ff.) statistics were presented which show how necessary it is that provision be made for additions to the staff. The rapid growth of the University has developed a situation which is second only to the importance of a strong faculty. There must be a sufficient number of teachers for the students or the quality of our work inevitably declines. I am not arguing for any expansion of the activities of the University. In fact, after a careful study of the institution, I have concluded that we must strengthen and improve the work already

undertaken rather than launch out into new fields. This statement must not be interpreted to mean that no new projects will be undertaken. It does mean that the emphasis should be placed upon stabilizing and developing the present work rather than upon expanding into entirely new fields. To accomplish this purpose large numbers of new teachers are necessary, particularly in the Colleges of Science, Literature, and the Arts, of Engineering, of Agriculture, of Pharmacy, of Chemistry, and of Education. Within the Arts College the work in Business Education and Journalism is urgently in need of immediate and generous enlargement. To meet the needs of the University, both for increasing salaries and for making additions to the staff, an annual appropriation of not less than $500,000 is absolutely necessary. With such an amount the University could take a forward step of real significance and meet in an honorable way its responsibilities both to the present Faculty and to the students by the provision of a more adequate teaching force. We have every confidence that the presentation of this situation is sufficient to convince anyone of the wisdom and justice of the policy which has been outlined. Without any qualification, the first outstanding problem of the University will be solved by providing the funds necessary to meet this salary situation.

THE COMPREHENSIVE BUILDING PLAN

Another large problem of the University relates to buildings. It should be stated emphatically that the only reason for requesting new buildings is that the actual work of the University may be prosecuted vigorously under favorable conditions. We have no desire for buildings as buildings. We ask only for the equipment and facilities necessary for the scientific investigation and research work of the staff and for the training and teaching of the students. It is not economy to sacrifice human resources to material equipment. If teachers can do better work, and if students can be better trained by the provision of adequate buildings and laboratories, then no one can doubt the wisdom of such a proposal. To limit the effectiveness of teachers and to deprive the student of modern opportunities is the most expensive policy which we can pursue.

In order to appreciate the acute form which this problem has assumed, it will be helpful to set down here in tabular form the

appropriations for buildings which the Legislature has made since 1911.

Legislative Appropriations for Buildings

Available for 1911-1913	$1,761,980
Available for 1913-1915	1,177,150
Available for 1915-1917	296,650
Available for 1917-1919	125,250

It becomes obvious at once that these funds have steadily declined since 1911. We must not overlook the fact that the great world war began in August, 1914, which accounts fully for the enormous decline in 1915. Likewise, in April, 1917, the United States entered the world war and consequently the appropriation of 1917 was cut to the very lowest possible minimum. Of the $125,250 finally granted, $56,000 was used to provide a dining-hall and assembly-room for the School of Agriculture at Morris. Over against these appropriations it will be wise to observe that in 1915 the University asked for $552,900 and received only $296,650; while in 1917 it asked for $1,150,000 and received only $125,250. In other terms, for at least four years *the building needs of the University have been accumulating and now present a serious and acute problem.* In normal times the demands for buildings would be great, but back of these needs lie the conditions arising out of delay and postponement. In reality we are seriously in debt from the standpoint of accepting our responsibilities for the steady and normal development of the buildings and equipment of the University.

Beyond these important considerations, however, lies the fact of the unprecedented growth of the institution creating unanticipated needs for new buildings. If the University has been organized by the people of Minnesota for the training of its youth, and if those youth come in increasingly large numbers to the campus, then new buildings become absolutely necessary. The following table sets forth in graphic fashion the astounding growth of the institution in recent years:

	Collegiate	Non-collegiate	Total
1890	828	179	1,007
1900	2,482	782	3,264
1907	3,199	1,008	4,207
1911	3,824	2,258	6,082
1917	6,311	8,562	14,793

It now becomes very apparent why our building problem is so acute. On the one hand funds for buildings have not been available, and on the other hand the need for more buildings has grown apace. While building needs were permitted to accumulate, the students of the state sought the privileges of the University in almost overwhelming numbers.

But this is not all. With the great influx of students, housing conditions became serious. The state has recognized at various institutions the general principle that dormitories are essential to the best welfare of the students. Here at the University, dormitories have been provided on the Farm campus for students in the School of Agriculture. On the main campus Sanford Hall for women has been erected. So in reality the policy of providing dormitories for students has been adopted. Nevertheless, no adequate provision has been made for college students at the Farm and none for men on the main campus.

Now it is doubtless becoming evident to the reader that the present administration of this University, without in any sense neglecting to emphasize the primary importance of that function of a true university which promotes scientific investigation and research, proposes in no formal or conventional fashion to recognize the fact that a University exists for its students. We have insisted that the salary situation must be corrected in order that a splendid faculty may be provided in the interests of the student. An excellent faculty means excellent opportunities for the youth of Minnesota. We have advocated the necessity of new buildings in order that men may not be sacrificed to bricks and mortar. Excellent equipment means excellent facilities for the student to do his work.

But this student is a human being who must live under conditions which are healthful and wholesome. He must be given a real opportunity for the acquiring of those habits and standards of living which will determine, to a considerable extent, his future success and usefulness. Good manners, high moral standards, and gentlemanly conduct are absolutely essential to any man in any walk of life. Discriminating parents are not to be criticized when they hesitate to send their sons or daughters to the University to live in boarding-houses without the immediate supervision of educational authorities. The state has here an opportunity to render real service to all the people.

It should be pointed out that the privileges of the University would become far more available to students residing outside of the Twin Cities if adequate systems of dormitories were provided. Moreover, students whose homes are in St. Paul or distant sections of Minneapolis would profit far more from a college course if they resided in University dormitories and thus escaped from long, time-consuming street-car rides each day.

By means of dormitories the whole spirit and atmosphere of the University could be greatly improved. Students would live in groups enjoying a common life and sharing their college experiences. Far more time would be available for serious intellectual study. The real purposes of the University would be furthered and the daily work of the classroom would show marked improvement. Again this plan is intended to benefit the student. If he can live under wholesome conditions, where the commonly accepted standards of life are fostered and encouraged, he will emerge from his college career better equipped to meet the duties of life.

A dormitory system when once provided need not be a constant expense to the state. In fact, the state should never be put to any expense for the housing or feeding of its students. Eastern universities regard their dormitories as a real source of income. Here at a state institution dormitories could be provided by appropriations for the original construction, students could be housed at reasonable rates, and a sufficient income could easily be produced to provide for repairs and maintenance.

It is natural that some of our citizens should send their sons and daughters to eastern colleges. Such a course can only benefit our state in the long run. But for the thousands of men and women who choose to take their university training here we must insist that they be given as good opportunities for study and residence as exist anywhere. I am confident that no lower aim will satisfy the citizens of Minnesota.

We now have before us the elements of our building problem: (1) the accumulated needs of several years; (2) the demands of a rapidly increasing student body; and (3) the necessity of providing a system of dormitories for men and another system for women.

It only remains to set forth in detail the specific needs for buildings. During the first year of the coming biennium we

should build at least two dormitories for men at a cost of $300,000, and one dormitory for women at a cost of $150,000. Plans should be made to build at least two dormitories a year for the next ten years.

The first outstanding need is for a new central library to serve the entire University. A library is the center and soul of a university. Around it the work of the entire faculty and student body must center. The present library was erected in 1895 when the total registration of the University was only 2,469. In 1917 our collegiate students numbered 6,311 and our total registration was 14,973. Our present Library is utterly inadequate to the needs of this great University. Funds should be available for beginning a central library which ultimately, let us say in four or five years, will cost $1,250,000.

In speaking of dormitories and the library first, possibly injustice has been done to other urgent needs. Funds must be immediately available for the construction of a storehouse and general office building and shops to cost $200,000. Our present storehouse represents a fire hazard which the state should not condone. The Board of Regents has twice agreed with the Federal Bureau of Mines to ask the Legislature for an appropriation of $175,000 for a Mines Experiment Station building and equipment. The Federal Government provides $25,000 annually for this station. An emergency appropriation of $75,000 must be asked for a new dormitory for boys at Morris. Shevlin Hall for women on the main campus has been completely outgrown so far as dining-room facilities are concerned. One only needs to visit this building at meal-time and see long lines of women students waiting for an opportunity to secure their food to realize the necessity of making at once an addition to Shevlin Hall at a cost of $35,000. Our College of Education, if it is to perform its high function of training teachers for our public high schools, must be provided with a building more adequate for the needs of the University High School which serves as the practice school for students in the College of Education. The sum of $50,000 for an addition to this building is needed during the first year of the biennium. The veterinary barns at the Farm must be completed at once, involving an expense of $25,000. The School of Agriculture at Crookston asks for $100,000 for a general building including a dining-hall. This appropriation was

actually voted by the Legislature of 1917, but vetoed by the Governor owing to the war. A superintendent's house at Waseca, costing $6,000, must be provided. Buildings at the Northeast Station destroyed by the great forest fires should be immediately replaced at an expense of $9,000. The last Legislature gave serious attention to the request for an Electrical Engineering building. It seems to be conceded by everyone that this building, the estimated cost of which is $250,000, must be provided at the earliest possible date. Our School of Chemistry is entirely justified in the position that a new building for Chemical Engineering is essential to its service to the state. This structure would require an appropriation of $200,000. Among this list of essential buildings needed just as soon as they can be provided, is a Plant Industry building at the Farm. The estimated cost of this structure is $400,000. The purposes which it would serve are so intimately related to the prosperity of the state that delay here is almost suicidal. A new development of the University is the establishment of its Health Service. Other state universities, including Michigan, Wisconsin, and California, have maintained such an organization with great success for several years. The Health Service is indispensable to the operation of a large institution. It exists to protect the students and to prevent disease. It cares for the sanitation of the campus and buildings. By various methods, it aims to educate all of the students in matters of public health and personal hygiene. In particular, it cares for the individual student when he becomes sick. It maintains a dispensary service where the young man or young woman may go at any time night or day for treatment of any ailment, or for the dressing of any wound. It puts a heart into the University. It removes fears when there is no occasion for fear. It aims to develop men and women who are superbly fit for the work of life. It provides a student's hospital where the sick may be given the best of care. At present this very important organization is temporarily housed in the basement of Pillsbury Hall. It is no expense to the state, for each student pays two dollars each quarter for all these varied forms of service, including the hospital. In order adequately to house this Health Service it is essential that the sum of $200,000 be made available at once for a Health Building. The total estimated cost of this list of essential buildings which ought to be provided immediately is $2,980,000.

That our building situation is very acute is doubtless already fully established in the mind of the reader. Another large factor in the situation, however, relates to buildings which have not been completed and which in the years just ahead must be provided for. The following list will indicate the magnitude of this particular phase of our building situation:

Name of Building	Estimated Cost of Additions
1. School of Mines (geological wing)	$150,000
2. Animal Biology building	250,000
3. Home Economics building (north wing)	60,000
4. Institute of Anatomy (south wing)	75,000
5. Millard Hall (south wing)	75,000
6. School of Chemistry	100,000
Total	$710,000

If, now, we are facing frankly the building problem in its entirety and are remembering emphatically that the program already outlined greatly exceeds any possible appropriations for the next biennium, there will be great value in knowing just what must be anticipated in the next ten years. The wise man is not content in ascertaining what he must do to catch up with the past. He is putting questions to the future in order that he may anticipate his tasks and avoid any possible mistakes. By so doing he obviates the necessity of correcting costly errors and avoids the evils of expensive economies. From this point of view what new buildings is it probable, if not certain, we shall have to erect?

When I became President of the University I asked each Dean to make a statement setting forth his program for the next five years. These documents were prepared with great care and represent the mature thought and judgment of the chief administrative officers of the University. I have studied these programs carefully. Committees of the staff and of the Regents have given painstaking and prolonged consideration to the entire situation. As a result, in facing our needs for the next ten years it became evident that the following list of buildings must be regarded as necessary to the real work of the University.

Name of Building	Estimated Cost
1. Astronomical Observatory	$75,000
2. Remodeling Botany, Chemistry, and Horticultural Buildings at Farm	55,000
3. Animal Industry Building at Farm	200,000
4. University Shops	100,000
5. Nursing Service Building	125,000

6. Hospital Pavilion No. 1	225,000
7. Addition to General Service Building	75,000
8. Hospital Pavilion No. 2	225,000
9. Central Administrative Building	400,000
10. Training School Building (College of Education)	200,000
11. Law Building	250,000
12. Physical Laboratory	275,000
13. University Auditorium	500,000
14. Mechanical Engineering Laboratory	250,000
15. Music Hall	200,000
16. Addition to Dental Building	75,000
Total	$3,230,000

As we face this building problem as a whole it becomes quite evident that the state has here a huge task. Let no one misunderstand us. We are not asking for these buildings for this biennium, nor even the next. We are only endeavoring to gather our whole situation together and to set it forth in its entirety. By this method we aim to make it evident that we must think in larger terms if we are to accept our responsibilities for the education of our youth. The University of Minnesota has been established by the people and has been given enormous tasks to perform. When we realize that it includes not only the main campus and the University Farm, but the work at the Schools of Agriculture at Crookston and Morris, we begin to realize its scope. Add to these statements the fact that agricultural experiment stations exist at the University Farm, Crookston, Grand Rapids, Morris, Duluth, and Waseca, and the extent of our activities takes on new meaning. Moreover, we must not forget the Fruit Breeding Farm at Zumbra Heights, the State Tree Station at Owatonna, and the forest experiment stations at Itasca and Cloquet. Beyond all of these activities are the Agricultural and General Extension Divisions and all of the short courses which have their ramifications into every community of the state. Details given in the *Twentieth Biennial Report of the Board of Regents* amply support this assertion. Only one who day by day is forced to view this institution in its entirety can have any comprehension of the magnitude and the value of the service which in so many varied forms is being rendered to the citizens of Minnesota. To do this work, equipment is absolutely essential.

Now to summarize our building problem as set forth in the preceding paragraphs we find ourselves confronted with these amazing figures:

Summary

1. Buildings needed at once.....	$2,980,000
2. Completion of existing buildings...	710,000
3. Buildings needed prior to 1929....	3,230,000
Grand total.....	$6,920,000

At once it must be pointed out that this huge sum makes no provision for dormitories—a need so essential to student life that it stands in a class by itself. Funds will also be needed for various minor buildings at the substations and for the necessary expansion of the heating plant and system.

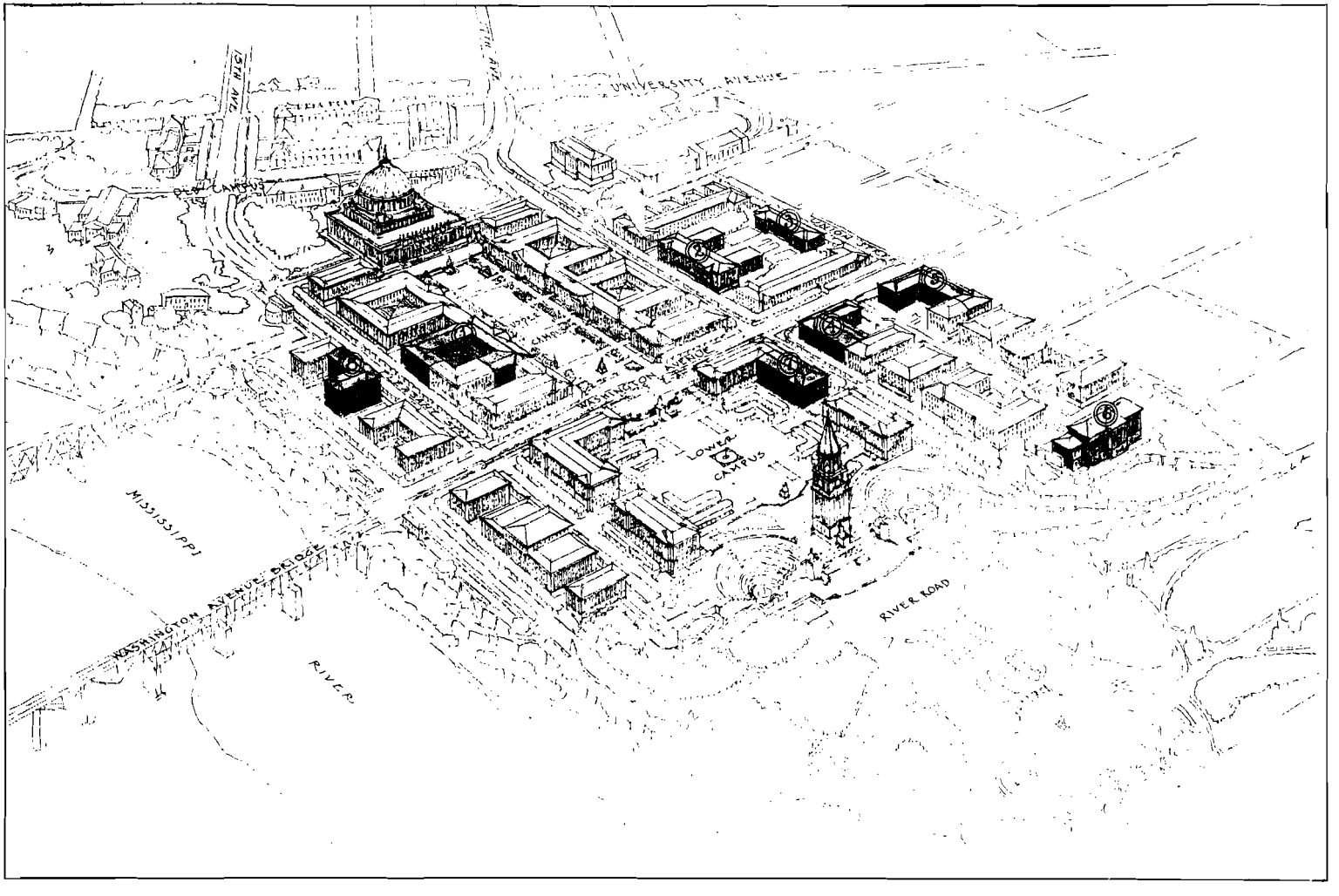
Now what solution may be proposed for this problem? The facts presented in the preceding paragraphs seem to suggest an impossible program. We have not been dealing with the figments of our imagination nor with the whims and fancies of impractical dreamers. We are confronted by the solid, stern facts of a real institution. Let no one imagine that we think it is possible for any person to be wise enough to anticipate precisely the building needs of this great institution for the next ten years. Unforeseen changes will inevitably have to be met, but the general character of our problem will not change. Now what policy does common sense dictate? If we must cut our needs down to the very lowest possible minimum what plan shall we advocate? After the most careful deliberation we propose what shall be known as "The Comprehensive Building Plan of the University." It is obvious that our needs can not be met in any one biennium, or even in two or three bienniums. Therefore we propose to submit to the Legislature a comprehensive, systematic, statesmanlike program covering the next ten years. After a careful study of the whole situation we propose a plan which we think any individual or private corporation would adopt as the most economical and wise policy to pursue. We are convinced that this program will save money for the State of Minnesota and enable us to plan systematically and coherently for the next decade. Not by the haphazard occasional construction of buildings, but by a carefully prepared plan looking into the future, will we arrive at satisfactory results. There are two ways of doing anything. One man drifts. Another man plans and then goes forward to the systematic realization of his plans. We believe that the interests of the citizens of Minnesota will be protected not by drifting but

by a far-sighted, statesmanlike policy. By such a method our requests for the coming biennium can be much smaller than otherwise they would have to be.

The plan which we propose, therefore, is to ask for $505,000 for the first year of the biennium and $560,000 for the second year, making a total of $1,065,000 for this biennium. The items for the first year would be as follows:

Business Building, Storehouse, and Shops	$200,000
Dormitory for Men, Morris	75,000
Preparation of General Library Plans	5,000
Addition to Shevlin Hall Dining Room	35,000
Addition to High School Building	50,000
Completion of Veterinary Barn, Farm Campus	25,000
Dining Hall, Crookston	100,000
Superintendent's House, Waseca	6,000
Replacing burned buildings, Duluth	9,000
Total	$505,000

Now the outstanding feature of the proposal is the request for a 35/100 millage tax for the next ten years beginning with the second year of the biennium. It is estimated that this will produce approximately $560,000 annually. If this amount is multiplied by ten and allowance made for increased valuation of taxable property we may safely assume that such a millage tax would provide six million dollars. It will be seen at once that this would not meet fully the needs of the University *for the next ten years,* even when the proposal for dormitories is *excluded.* That is to say, we have here a proposal which is by no means unreasonable or excessive, in view of the work which must be done for the state. Summarized in a sentence, the Comprehensive Building Plan asks for $505,000 for next year and for $560,000 annually for the next ten years. These amounts are not as large as were actually appropriated at the sessions of 1911 and 1913. We have confidence to believe that the citizens of Minnesota prefer to have their problems presented in this fashion with all the facts available. We have no fear regarding their intention to provide for their sons and daughters those facilities for education which will be second to none in America. We have expended billions of dollars for the business of war. We have been taught many new and valuable lessons. Surely we shall not fail now to meet the needs of our institutions upon which depends the future of democracy.



THE BUILDING PLAN

Key to buildings which have been constructed:

1. Chemistry Building
2. Main Engineering Building
3. Mechanical Experimental Building
4. Institute of Anatomy
5. Millard Hall
6. Elliot Memorial Hospital
7. Biology Building
8. Mines Building

CAMPUS MAINTENANCE

A third general University problem is very closely related to the one we have just been considering. We refer to the maintenance of the campus.

The state wisely appropriated $800,000 for the purchase of the larger campus. The wisdom of that step is now apparent to all. It provides an unbroken area of 108.5 acres on the high eastern bank of the Mississippi River. The comprehensive plans for the enlarged campus prepared by Mr. Cass Gilbert have been followed in the actual construction of buildings. Starting at the river bank, the School of Mines Building determines permanently the first line for later edifices. The School of Chemistry fixes definitely the western side of the great central mall. The existing portion of the Biology Building in reality determines the eastern boundary for the mall. The Main Engineering Building and the Institute of Anatomy establish the line for the next row of structures. The Experimental Engineering Building and Millard Hall are constructed on the line which determines the present eastern boundary of the campus. The main outlines of the campus are therefore actually determined. In general terms, it may be said that those plans are acceptable to everyone and that they have commended themselves heartily to those who are charged with the task of realizing them.

Unfortunately, with the lapse of years the progress made in the development of these plans has been rather slow. Conditions still exist which demand immediate correction. Through the campus pass two sets of railroad tracks. Doubtless nothing can be done regarding the Great Northern Railway beyond urging its electrification at the earliest possible date. The Northern Pacific Tracks, however, must be covered or removed. They lie right in front of the proposed building which will stand at the head of the central mall—the main landscape feature of the entire campus. The Legislature of 1909 (see *General Laws of Minnesota for 1909,* Chapter 302) provided for the covering of these tracks. Steps must now be taken 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 and contiguous to the right of way of the railway

company. Moreover, the surface rights over the existing right of way should be purchased. If this railroad could be covered or removed, it would eliminate a barrier which divides the campus into two sections and makes the circulation of traffic on the campus very awkward and difficult. The first and most important step in campus improvement must be the disposal of this railroad. The realization of our larger plans simply can not go forward so long as the Northern Pacific tracks remain in their present condition.

Another situation on the campus which demands immediate action is the presence of a large number of small frame houses, several of which are not in good repair. By the early removal of some of these structures, particularly those now standing on the land which will become the central mall, great improvement would result in the general appearance of the grounds. By such a method the plan for the campus as a whole would become quite apparent even to the casual visitor. If, in addition to this, a reasonable sum of money could be expended in improving this section by the planting of trees and shrubs and by the laying out of the permanent walks and drives, we should be making real progress toward the achievement of our larger plans.

Finally, more money should be spent in maintaining both campuses. More attention must be paid to our walks and driveways. The surface drainage is inadequate and results particularly in the winter and spring months in very unsatisfactory conditions. These statements must not be interpreted as criticisms of those chiefly responsible for the conditions of our grounds. The difficulty has arisen wholly from the lack of funds. Higher standards of cleanliness and neatness both for the buildings and the grounds are necessary if we are to do for the students the things that we should. Inevitably the external equipment of an institution has its influence on the student's life and character. During the impressionable days of their university career our youth must live under conditions which will make for an appreciation of order, neatness, and cleanliness. Without any trace of ostentation or display the campus and buildings of a University should help to create a general environment in which high standards of character and conduct are readily established.

STUDENT LIFE

Another general University problem concerns the life of the students as a whole. To a very large extent our treatment of the general salary situation, our statement of our building needs, and our discussion of the condition of the campus, have pointed to the necessity of creating an environment which will bring the largest possible benefits to the students. A further question of vital importance concerns the actual life which the student lives, and the general spirit and atmosphere which pervades an institution. It is almost impossible to exaggerate the importance of this factor. To the casual observer or visitor it may seem like a very vague and intangible thing. But I venture the assertion, without any hesitation or fear of successful contradiction, that no single influence is more potent in the mind of the student. Young men and women, just like all persons, are chiefly concerned about the judgment of their peers. It need not surprise anyone, therefore, to discover that students are more concerned about what their fellow students think, than they are about what university officials and professors think. College atmosphere at first thought may seem a secondary consideration, but nothing will rob an institution more quickly of its effectiveness and value than to have false standards and ideals commonly accepted among its students.

Institutions differ remarkably in the effects which are produced and the results which are secured over a long period of years. Any university which fails to recognize as a serious part of its duty the maintenance of a fine, strong spirit among its students, is doomed to very disappointing results. Undoubtedly many parents in selecting the institution at which their sons and daughters shall be trained are influenced more by what they understand to be the general atmosphere of the place than by any other consideration.

From this point of view the University has provided certain facilities of great value. Undoubtedly the Minnesota Union not only serves as a place where the men students can secure good meals at reasonable rates, but is a very strong factor in developing college spirit and in fostering mutual understanding among the men. It helps to make them feel that they belong to the University and that there is a place outside of their own rooms where they may gather and share their experience. Likewise,

Shevlin Hall for women affords opportunities for rest and recreation which are invaluable. But it goes further and becomes a potent influence in unifying the women students and in encouraging a fine University spirit. Whatever may be one's attitude to fraternities and sororities, it must be admitted that for several hundred students they not only provide suitable homes but bring students together under conditions which compel each group to stand for high ideals in scholarship, character, and conduct. The athletics of the University do much in promoting University enthusiasm and loyalty. To a very large extent the earlier evils of athletics have been eliminated and wholesome conditions prevail in the conduct of the various games. Totally aside from the physical training which the students receive, the very fact that occasionally during the year large groups of University people, including Faculty and students, come together to witness the games, does much to create a genuine University consciousness and to make everyone realize that he is a part of a large institution worthy of his generous support and enthusiastic loyalty.

The University Senate on May 23, 1918, took a very wise and significant step in setting aside the last hour of every Thursday morning for all-University Convocations. Such gatherings unquestionably make for the unity and cohesion of the entire institution. They not only afford opportunities for hearing men and women of note from all sections of the world, but make it possible for officers of the University to meet with the students as a group. At such times, questions of University concern may be discussed, any unfortunate tendencies or conditions may be corrected, and, above all, positive convictions and ideals may be set forth. In this critical period of readjustment to new world conditions such a plan is essential to the largest life of the institution as a whole.

In developing a splendid student atmosphere, however, we are confronted by serious limitations which ought to be corrected as rapidly as possible. Our entire situation is complicated by the fact that we are located between two large cities. Our students are widely scattered. It is extremely difficult to find an hour when students may be called together. Our urban location compels us to make special efforts to protect the University against needless diffusions and distractions. Life upon the campus must

be made attractive, and genuinely valuable privileges must be made available. Our situation contrasts rather sharply with that of Universities such as Michigan, Wisconsin, and Iowa, where the town really serves the best interests and primary purposes of an educational institution. It must not be forgotten that large cities inevitably offer fine advantages. Our location is by no means a total liability, but does offer splendid compensations which small cities simply can not provide. It only becomes necessary for us to study the disadvantages and to set in operation the forces which will fully counteract them.

Undoubtedly the most effective method for securing this result is that of providing residence halls. I have already pointed out the importance of dormitories. (See pages 11, 12.) They would not only provide homes for the students, but they would be a powerful influence in establishing high standards of living and in unifying the students as a group. Greater cohesion would inevitably result. When one stops to consider the size of the University and to realize that during the decade from 1907 to 1917 the number of full-time collegiate students more than doubled, one must appreciate the importance of taking every honorable and legitimate means for maintaining the unity of the institution. Such growth places very heavy strains upon the traditions and spirit of a university. Dormitories would help remarkably in the maintaining of a worthy student life.

Finally, the University in the not far distant future must have an auditorium. At the present moment there is no place where the entire University can gather. The Little Theater seats 420. The large lecture room in the School of Chemistry will accommodate 514. The assembly room in the College of Engineering provides seats for 400. We are therefore forced to use the Armory for all-University Convocations. This building is very satisfactory for the purposes for which it was constructed, but it was never intended to serve as the convocation hall for a large and dignified University. At best, it seats only 2,100. With a student body numbering 6,311 and with a staff of 1,120, it becomes evident that the Armory is utterly inadequate. We need a structure carefully designed to accommodate an audience of six to eight thousand people.

Every high school in the Twin Cities has better facilities for public gatherings than the University. For a number of years

our needs in other directions have been so serious that the provision of some adequate meeting place has been postponed, if not neglected. The former State Superintendent of Education, the Honorable C. G. Schulz, is authority for the statement that "every high school in the state built during the last ten years and situated in a town whose population is eight thousand or more has a better auditorium than the University." When we compare our equipment in this regard with that of other state universities the same general situation is apparent. The University of Michigan has a beautiful structure known as the "Hill Auditorium," which is sufficiently large to accommodate practically the entire university. Experience at Ann Arbor shows that frequent use is made of the building. In fact, it seems indispensable to the life of the university. It goes without saying that such a building would have a remarkable effect upon the life of the students as a whole. It would become the place which typified for them the spirit of their Alma Mater. It would give them a common meeting place and would afford privileges of the greatest importance to their proper training and development.

This auditorium should be simple and unostentatious, but dignified and refined. It should provide adequate facilities for conducting properly the large official gatherings of the University as a whole. The opening convocations, the special exercises necessitated by the visits of distinguished groups from other nations, the occasions upon which the University is the host of the officials of the state government and the Legislature, the various events of commencement week, when literally thousands of persons are deprived of the coveted privileges of attending graduation exercises, and the numerous occasions when speakers of national reputation are available for all-University convocations —all of these functions argue strongly for the early provision of an auditorium equal to the needs of a large institution. In my own mind, I have hoped from the beginning of my administration that this building could be known as "Northrop Hall." President Northrop exerted a marvelous influence upon the students and the citizens of the state. It seems eminently fitting that a building dedicated to the maintenance of lofty ideals and the fostering of a worthy university life should bear his name.

It will be observed that the need of this building was not enlarged upon in the presentation of our comprehensive building plan. The reason for this fact is quite obvious. We are discussing now the life of the students and we conceive of this building as one of the most important instrumentalities for enriching student life. Moreover, it is to be hoped that in view of our amazing needs, such a building might not have to await legislative appropriations, but might be provided by the generous gift of some benefactor.

Doubtless the preceding paragraphs have made clear, by inference at least, that the life of our students could be greatly improved. Everyone is aware that there is a lack of unity and cohesion. It could not be otherwise under existing conditions. The lack of university consciousness is at times painful. In an institution so large as ours it is difficult to maintain a point of view which always recognizes that the interests of the University are paramount to those of any group or organization. Our residence conditions account for the lack, to a certain extent at least, of those social and cultural standards which are so essential to any institution of higher learning. The University is failing utterly in providing any real opportunity for the students to come in contact with the best in art and music. Occasional art exhibitions and a series of concerts by leading artists and musical organizations would add greatly to the quality of the life of the entire University. An auditorium such as we have suggested would afford a suitable place for the holding of such concerts. With our large student enrollment such opportunities could be provided without expense to the state by the charge of very nominal admission fees. It becomes apparent that our aim is to set in operation the forces which will gradually but inevitably modify and reform existing conditions and result in the deepening and enriching of student life. It is no difficult task. The students literally crave the privileges which have been suggested. Their response to genuine values in any realm is almost instantaneous. We are very short-sighted if we fail to see the bearing of this point of view upon the real work of the University. A richer student life means that better intellectual work will appear in the classroom. When the human spirit is awakened it spontaneously acquires new interest in everything that is beautiful,

and good, and true. Instinctively it responds to that which is excellent in whatever form it may appear. Quietly and certainly we would find ourselves in an environment at once stimulating and satisfying. We would be drawing a little nearer to that goal of a true university which ever lures us on, but which, like any true ideal, ever recedes as we approach it. In any event, a rich, abundant, unified, coherent student life is essential to the attainment of our primary purposes.

GEOGRAPHICAL DISTRIBUTION OF STUDENTS

Another general University problem, closely akin to the one we have just discussed, concerns the geographical distribution of our students. At first thought, it may seem rather strange to attach much significance to the question of where our students come from. Upon reflection, however, it will become apparent that here is a subject which rarely receives the consideration which it deserves.

It is generally conceded that travel is an important factor in the education of anyone. It inevitably broadens the mind and gives new points of view and new appreciations of the various sections of our own country and of the world. Knowledge may be gained through teachers and books but there is no substitute for actual contact with the objects of knowledge. This truth lies back of the modern scientific method of study which has employed so wisely the laboratory and the shop. Consequently, students who come from all parts of this state, from all sections of our own country, and from all parts of the world, represent widely varying traditions and customs. Each one sees the world from the standpoint of his own experience. An institution made up of students gathered from a comparatively small area will inevitably lack some things which a university possesses when its students come from widely separated geographical areas. Without doubt, a local constituency involves a certain amount of provincialism and narrowness of vision, while a world-wide constituency engenders breadth of view and cosmopolitan interests.

Now what are the facts regarding our students? During the year 1917-18 every county within the state of Minnesota was represented by at least one student. Of the 48 states in the

Union, 36 sent students to this University. It must be observed, however, that of the college students registered between September, 1917, and June, 1918, only 14.5 per cent came from outside the state. It is of considerable interest to note that 56 foreign students came from 21 different countries. In the interests of accuracy it should be added that this statement includes the six students who came from Alaska, Porto Rico, and Cuba. It is apparent that our students come from widely separated regions within our country and from all parts of the earth. Undoubtedly, the presence of students from the South, East, and West gives a national quality to the University which makes for a larger point of view. Without question, the foreign students on the campus compel their colleagues to be more conscious of the world as a whole.

The practical issue to which we come is this: Is the amount of money which the University receives by charging larger fees for non-resident students equal in value to the influence which the presence of more students from other states and countries would exert upon the life of the University? This query assumes that larger non-resident fees do prevent students from coming to the University. It is obvious, of course, that the State of Minnesota can not be expected to educate free of charge the citizens of other states. The change under consideration, however, would not cancel all fees but simply make them the same for all students whether resident or non-resident. It must be remembered that our neighboring states have strong universities which are attractive to their own citizens and in some cases to the residents of Minnesota. We need fear no great influx of students from all sections of the country or of the world. It will be of interest to know that the University of Illinois admits non-residents upon the same basis as resident students. At the University of Iowa the fees are the same, except in the College of Engineering where the tuition is raised from twenty dollars to forty dollars, and in the Medical School where it is increased from eighty-five dollars to one hundred dollars for non-residents. At the University of Missouri there are no tuition fees for resident students, while all non-residents are required to pay a fee of twenty-four dollars. At the Universities of Michigan and Wisconsin larger fees are charged for students coming from outside

the state. The practice at this University requires the non-resident student to pay double fees in the Colleges of Science, Literature, and the Arts, of Agriculture, Forestry, and Home Economics, and of Education. If we should decide to treat all students alike it would reduce our annual income from student fees by approximately $9,000. On the other hand, careful consideration must be given to the effects that such a policy would have upon the life of the students and upon the general standing of the institution. Wider contacts with the country and the world can not fail to benefit in a very significant way not only the University but the entire state. It is generally conceded that the wide geographical distribution of the students of the University of Michigan during its earlier history gave to it the leadership and primacy which it has enjoyed. As a policy we may wisely consider the best methods for encouraging students from all sections of the country and the world to attend this University. Our aim should not be to have more students, but to develop a student body which will foster broad, cosmopolitan interests and points of view. In this new era, students must acquire a world outlook. Provincialism and narrowness must be replaced by toleration and brotherhood. During their student days our future citizens must acquire an outlook upon life as a whole which will help to make them better citizens for our state and nation.

RESEARCH

Another problem which concerns the entire University and is related to the work of all departments is research. All of the general University questions discussed thus far in this report have related themselves very definitely to the welfare of the students. We now come to an issue which represents another primary function of every true university. It must not be assumed, however, that an institution which fosters and encourages original investigation does not thereby produce conditions of direct value to its students. It must be observed that the primary aim of research is to make contributions to knowledge and to expand the borders of truth. The scientific investigator is engaged in an open, frank, candid search for the truth in all realms regardless of its consequence to existing theories or preconceived notions. Every true university recognizes that it has two distinct

tasks. (1) Its students must be taught. The teaching function, particularly in a state university, must always command a very large proportion of the time of the teaching staff and of the resources of the institution. (2) Scientific research and original investigation must be carried on with great enthusiasm and prosecuted with genuine fervor. A university, in the long run, is judged chiefly by the quality of the output of its research workers. No institution can legitimately lay claim to the title of "university" unless there is ample evidence of sincere devotion to the cause of investigation.

At the University of Minnesota there are positive indications that research work is not totally neglected. The list of the publications of the Faculties which appears in this report is the most authoritative proof of the truth of this statement. Taking the University as a whole this record of the year's work in research makes a creditable showing. It may be said that our Department of Agriculture deserves special recognition for the amount and quality of its research activities.

The establishment at the University of Minnesota during the last two years of the Mayo Foundation for Medical Education and Research has given a very great stimulus to our work. This generous gift of $1,656,072 can not fail to have a profound influence upon our graduate work in medicine and surgery. Anyone interested in the details of this organization will find it described in full in the *Twentieth Biennial Report of the Regents* (pages 86-99). The financial statement of the Foundation is given on pages 143 and 144 of the same volume. There is every reason to expect that this University increasingly will give proof of its genuine devotion to scientific and scholarly investigation and research.

It may be of advantage to point out here that the two chief functions of a University—teaching and research—are not so unrelated as might appear. A man who devotes his entire strength and energy to an unreasonably heavy teaching schedule can not be expected to produce much evidence of scholarly activity. Some men who show rare skill in one field often prove somewhat defective in the other. A research worker of unusual originality oftentimes proves unequal to the task of teaching. Some of the

most stimulating teachers often show little ability in investigation. The temperaments of individuals can not be ignored, but speaking *in general,* I am convinced that few men can prove to be stimulating and virile teachers *over a long period of years* without being actively engaged in research which relates itself vitally to their chosen fields. I thoroly believe that it is possible for a person to be at one and the same time a genuinely successful teacher and an investigator of real merit. It is the duty of the institution to make such a result possible. In fact, one function inevitably reacts upon the other. A research worker gains genuine benefit from being compelled to present his thought to others, and a true teacher maintains a vigorous, alert, intellectual life by struggling with the unsolved problems of his subject. Reasonable teaching schedules, a minimum of committee and administrative work, well-equipped libraries and laboratories, are essential to the proper development of research work, but I am inclined to believe that in the last analysis the deciding factor is the man. It would be impossible by any untoward conditions to prevent some men from engaging in investigation and from publishing the results of their work. Others under very favorable conditions seem to give little external evidence, at least, of any vital activity in a scholarly sense.

We must give very definite and decisive consideration to the question of research. We must seek to eliminate the conditions which make it difficult, and to create a university atmosphere in which it will thrive. In encouraging scholarly investigation there is no more potent agency than the ideals of the members of the various faculties and staffs. If a man's colleagues insist upon evidence of scholarly productivity before according to him the high honors of a full professorship, the problem is largely answered. When the faculties themselves not only encourage but demand genuine research, it may safely be assumed that other conditions will correct themselves almost automatically.

CHANGES IN THE FACULTIES

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

Gertrude Harper Beggs, Dean of Women.

A.B., 1893, University of Denver; Ph.D., 1904, Yale University; LL.D., 1914, University of Denver; Professor of Latin, University of Denver, 1901-3; Professor of Greek, Earlham College, 1904-5; Professor of Greek, University of Denver, 1905-14; Dean, Chicago Kindergarten Institute, 1914-15; Social Director, University of Michigan, 1915-16.

Lauder W. Jones, Dean of the School of Chemistry.

A.B., 1892, Williams College; Ph.D., 1897, University of Chicago; Assistant Professor of Chemistry, University of Chicago, 1897-1907; Head of Department of Chemistry, University of Cincinnati, 1907-18.

Starkey Y. Britt, Professor of Military Science and Tactics.

National Law University, Washington, 1898-1902; Harvard University, Summer 1907; LL.B., 1915, Cumberland University.

George William Dowrie, Professor of Economics.

B.A., 1901, Lake Forest; M.A., 1907, University of Chicago; Ph.D., 1913, University of Illinois; Professor of Latin, Kingfisher College, 1907-10; Assistant in Economics, University of Illinois, 1911-13; Assistant Professor of Economics, University of Michigan, 1913-14; Associate Professor of Economics, University of Michigan; Professor of Economics, University of Michigan, 1917-18.

Elias J. Durand, Professor of Botany.

A.B., 1893, Cornell University; D.Sc., 1895, Cornell University; Instructor 1896-1910, Cornell University; Assistant Professor, University of Missouri, 1910-12; Associate Professor, 1912-18.

Norman Scott Brien Gras, Professor of Economic History.

B.A., 1906, Western University; M.A., 1906, Western University; A.M., 1909, Harvard University; Ph.D., 1912, Harvard University; Instructor, Assistant Professor, and Associate Professor of History, Clark University, 1912-18; Lecturer in History, Brown University, 1914-15; Lecturer in Economic History, Harvard, 1915-16; Lecturer in Economics, Harvard, 1917-18 (second semester).

W. E. Hotchkiss, Director of Business Education and Professor of Economics, College of Science, Literature, and the Arts.

Ph.B., 1897, Cornell University; New York Law School, 1900-1901; A.M., 1903, Ph.D., 1905, Cornell University; studied in France and Germany 1903-4 as Fellow from Cornell; Instructor Political Science, University of Pennsylvania, 1904-5; Assistant Professor of Economics, Northwestern University, 1905-7; Associate Professor 1907-9; Professor, 1909-17; Dean, School of Commerce, 1908-17; Visiting Professor of Political Science, Stanford University, 1915-16; University of California, summer 1916.

William Albert Riley, Professor of Entomology and Chief of Division.

B.S., 1897, De Pauw University; Ph.D., 1903, Cornell University; Instructor in Physiology, De Pauw Academy, 1896-8; Instructor, 1902-6; Assistant Professor of Entomology, 1906-12; Professor of Insect Morphology and Parasitology, 1912-18.

Dr. John Sundwall, Director of University Health Service and Professor of Hygiene.

S.B., 1903, University of Chicago; Ph.D., 1906, University of Chicago; M.D., 1912, Johns Hopkins University; Professor of Anatomy and Dean, Medical School, University of Utah, 1907-10; U. S. Public Health Service, 1910-12; Professor of Anatomy and Secretary, School of Medicine, University of Kansas, 1912-18; Director of University of Kansas Health Service, 1914-18.

William Francis Gray Swann, Professor of Physics.

B.Sc., 1905, Royal College of Science, London; D.Sc., 1910, University of Sheffield; Associateship of Royal College of Science, 1906; Junior Demonstrator in Physics, Royal College of Science, 1905; Senior Laboratory, 1906; Assistant Lecturer and Demonstrator, University of Sheffield, 1907; Chief of Physical Division, Department of Terrestrial Magnetism, Carnegie Institute, 1913-17.

Ralph Emerson House, Associate Professor of Romance Languages.

B.L., 1900, University of Missouri; A.M., 1899-1900, University of Missouri; Ph.D., 1909, University of Chicago; Professor of Latin and Modern Languages, Central Normal School for Oklahoma, 1900-1904; Instructor in Romance Languages, 1906-16; Assistant Professor, University of Chicago, 1916-17.

M(ayce) Cannon Sneed, Associate Professor of Chemistry.

A.B., 1911, Peabody College; M.A., 1913, University of Cincinnati; Ph.D., 1916, University of Cincinnati; Assistant Professor of Chemistry, University of Cincinnati, 1916-18.

Thomas M. Bains, Jr., Assistant Professor of Mining.

E.M., 1911, Columbia University; Instructor in Mining, Case School of Applied Science, 1914-16.

Percy B. Barker, Assistant Professor of Agricultural Education.

B.A., 1908, University of Nebraska; M.A., 1912, University of Nebraska; Assistant, Instructor, Assistant Professor, and Professor of Agronomy, University of Nebraska, 1906-15; Extension Specialist in Farm Crops, University of Missouri, 1916-16; Head of Department of Agronomy, University of Arkansas, 1916-18.

John D. Black, Assistant Professor of Agricultural Economics.

A.B., 1909, University of Wisconsin; A.M., 1917, University of Wisconsin; Instructor, Western Reserve University, 1910-11; Instructor and Assistant Professor, Michigan College of Mines, 1911-15; Summer Sessions, University of Michigan, 1908; Chicago, 1915; Wisconsin, 1911, 1912, 1916, 1917.

Sylvia Campiglia, Assistant Professor of Textiles and Clothing.

B.S., 1916, Columbia; eight years grammar and high school work; two years Supervisor of Domestic Art and Science, State Normal School, Pittsburgh, Kansas.

Irving D. Charlton, Assistant Professor of Farm Mechanics.

B.S., 1908, University of Michigan; Washington State Agricultural College, 1911-18.

Hermione Louise Dealey, Assistant Professor of Educational Psychology.

Ph.B., 1914, Brown University; A.M., 1915, Clark University; Ph.D., Brown University, 1918; Centenary Collegiate Institute, 1916-17.

R. Adams Dutcher, Assistant Professor of Agricultural Biochemistry.

B.S., 1907, South Dakota State College; M.S., 1910, South Dakota State College; M.A., 1912, University of Missouri; Instructor in Analytical Chemistry 1910-12; Analyst Government Dairy Research Laboratory, 1912-13; Instructor and Assistant Professor of Agricultural Chemistry, Oregon Agricultural College.

Grete Egerer, Assistant Professor of Medical Chemistry.

Ph.D., 1913, University of Prague; Roosevelt Hospital, 1914; Goucher College, 1914-17.

Albert M. Field, Assistant Professor of Agricultural Education.

B.S., 1916, University of Wisconsin; M.S., 1917, University of Wisconsin.

Dr. Charles D. Freeman, Assistant Professor of Dermatology.

M.D., 1904, University of Minnesota.

Gustav W. Gehrand, Assistant Professor of Dairy Husbandry.

Ph.B., 1903, University of Wisconsin; Ph.M., 1916, University of Wisconsin.

Bueford M. Gile, Assistant Professor of Agricultural Education.

A.B., 1913, College of Agriculture, University of Wisconsin.

Benjamin Coe Helmick, Assistant Professor of Agronomy.

B.S., 1914, Iowa State College; M.S., 1915, Cornell University.

J. Hugh Jackson, Assistant Professor of Economics.

B.A., 1912, Simpson College; Assistant Professor of Commerce, University of Oregon, 1916-17; Assistant to Professor Cole of Harvard Graduate School of Business Administration, 1917-18.

Dr. James C. Masson, Assistant Professor of Surgery on Mayo Foundation.

M.B., 1906, Toronto University; Hospital for Sick Children, Interne, 1906-07; Toronto General Hospital, Interne, 1907-08; Manhattan Maternity, Resident, 1908-09; General Practice, 1909-13; Mayo Clinic, 1913-19.

Clarence A. Morrow, Assistant Professor of Agricultural Biochemistry.

B.S., Ohio Wesleyan University; A.M., 1909, Oberlin College; Acting Head, Departments of Chemistry and Physics, Doane College, 1909-10; Harrison Scholar in Chemistry, University of Pennsylvania, 1910-11; Professor and Head of Department of Chemistry, Nebraska Wesleyan University, 1911-17.

Stella Palmer, Assistant Professor of Foods and Cookery.

B.S., 1909, University of Alabama; M.A., 1917, University of Wisconsin.

Dr. Rood Taylor, Assistant Professor of Pediatrics on the Mayo Foundation.

M.D., 1910, University of Michigan; Sc.D., 1917, University of Minnesota.

Nola Treat, Assistant Professor of Institutional Management.

B.S., 1915, Columbia; Assistant Professor of Domestic Science and Director of Cafeteria, Kansas State Agricultural College, 1915-17; Assistant Professor of Institutional Management and Director of University Commons, Indiana University, 1917-18.

Arthur G. Tyler, Assistant Professor in Farm Engineering.

1905-10, Michigan Agricultural College.

Marvin J. Van Wagenen, Assistant Professor of Education.

B.S., 1911, Rutgers and Teachers College; A.M., 1912, Columbia University; Teachers' College, Columbia, 1915-17; Eastman Business College, Poughkeepsie, New York, 1907-08; Cornell University, summer, 1910.

Mrs. Frances Vinton Ward, Assistant Professor in Foods and Cookery.

A.B., Boston University; Teacher, General Science and Home Economics, High School, Middletown, Connecticut, 1906-15; Instructor in Foods and Cookery and Household Management, Cornell University, 1915-17.

Earl Weaver, Assistant Professor of Dairy Husbandry.

B.S., 1913, Oklahoma College; M.S.A., 1917, Iowa State College.

Dr. Archa Edward Wilcox, Assistant Professor of Surgery.

M.D., 1899, University of Pennsylvania.

Balbino Davalos, Professorial Lecturer in Romance Languages.

B. en Ciencias y Artes, 1889; School of Law, Mexico City, 1895.

Cecil Albert Moore, Professorial Lecturer in English.

A.B., 1901, University of Harvard; A.M., 1903, Harvard Graduate School; Ph.D., 1913, Harvard Graduate School.

Promotions.—R. W. Thatcher from Professor to Dean; E. M. Freeman from Professor to Dean; R. R. Shumway from Associate Professor to Assistant Dean; R. A. Gortner from Associate Professor to Professor; W. P. Kirkwood from Associate Professor to Professor; J. Anna Norris from Associate Professor to Professor; F. H. Scott from Associate Professor to Professor; E. C. Stakman from Associate Professor to Professor; Mildred Weigley from Associate Professor to Professor and Chief of Division; Thomas M. Bains, Jr., from Assistant Professor to Associate Professor; R. G. Blakey from Assistant Professor to Associate Professor; W. W. Cumberland from Assistant Professor to Associate Professor and Chief of Division; I. D. Charlton from Assistant Professor to Professor; Samuel L. Hoyt from Assistant Professor to Associate Professor; Edward C. Kendall from Assistant Professor to Associate Professor; E. M. Lambert from Assistant Professor to Associate Professor; Archibald H. Logan from Assistant Professor to Associate Professor; Frank C. Mann from Assistant Professor to Associate Professor; P. E. Miller from Assistant Professor to Superintendent; J. S. Montgomery from Assistant Professor to Associate Professor; M. O. Pattridge from Assistant Professor to Associate Professor; T. G. Paterson from Assistant Professor to Associate Professor; F. W. Peck from Assistant Professor to Associate Professor; Dr. Harry P. Ritchie from Assistant Professor to Associate Professor; Walter E. Sistrunk from Assistant Professor to Associate Professor; John T. Tate from Assistant Professor to Associate Professor; G. R. Bisby from Instructor to Assistant Professor; L. W. Bliss from Instructor to Assistant Professor; S. C. Burton from Instructor to Assistant Professor; Royal N. Chapman from Instructor to Assistant Professor; C. C. Chatterton from Instructor to Assistant Professor; Howard S. Clark from Instructor to Assistant Professor; Lillian Cohen from Instructor to Assistant Professor; W. S. Cooper from Instructor to Assistant Professor; Charles D. Freeman from Instructor to Assistant Professor; W. A. Grey from Instructor to Assistant Professor; Pedro Henríquez-Ureña from Instructor to Professorial Lecturer; May S. Kissock from Instructor to Assistant Professor; Paul E. Klopsteg from Instructor to Assistant

Professor; Dr. J. M. Little from Instructor to Assistant Professor; L. F. Miller from Instructor to Professorial Lecturer; G. M. Olson from Instructor to Assistant Professor; Fred J. Pratt from Instructor to Assistant Professor; Andrew T. Rasmussen from Instructor to Assistant Professor; Ruth Raymond from Instructor to Assistant Professor; R. I. Rizer from Instructor to Assistant Professor; C. O. Rost from Instructor to Assistant Professor; Arthur G. Tyler from Instructor to Assistant Professor; H. L. Ward from Instructor to Assistant Professor; Lester B. Shippee from Lecturer to Assistant Professor.

Leaves of absence granted during the year.—Dean L. D. Coffman, to serve as Lieutenant-Colonel, Head of the Department of Education, in the Surgeon-General's office. Dean Guy Stanton Ford, for Government service for one year without salary from September 1, as Director of the Division of Civic and Educational Coöperation, Committee on Public Information. Dean W. R. Vance, for Government service with the War Risk Insurance Bureau, with balance of salary to be paid by the University to bring it up to his present University salary. Superintendent L. B. Baldwin, as Major, Medical Reserve, under conditions of resolution regarding salary of August 3, 1917. Professor G. N. Bauer, for service in the War Savings Campaign for one month beginning March 25, 1918, with full pay. Professor Josephine Berry, with Federal Board for Vocational Education for six months beginning September 1, 1917, without salary, and later extended to August 1, 1918. Professor C. P. Bull, as Captain, Red Cross Reconstruction Unit in Serbia, for six months beginning April 1, 1918, without salary. Professor Hardin Craig, as Captain, Quartermaster Corps, beginning August 1, 1917, with salary adjustment. Superintendent E. W. Davis, for one year without salary. Professor William Stearns Davis, to attend a conference on defense propaganda in Boston, July 15, 1918. Professor E. Dana Durand for service on the Federal Food Commission. Professor W. H. Emmons, for the week of May 19, 1917, for geological conferences in Montana, without salary; leave extended to November 26, without salary. Professor G. B. Frankforter, for war service with rank of Major, Ordnance Department, under conditions of resolution of August 3, 1917.

Professor John H. Gray, leave extended, without salary, for service with the Board of Appraisers, War Department. Professor F. F. Grout, on the U. S. Shipping Board, during the period of the war beginning March 18, 1918, without pay. Professor M. E. Haggerty, psychological service as Major, for duration of the war, with salary adjustment. Professor Francis Jager, for six months beginning August 20, as Major in agricultural reconstruction work in Serbia, without pay. Professor F. P. Leavenworth, for second semester of 1917-18, to give course of study in Navigation for the Nautical School conducted by the Shipping Board at Duluth, with salary adjustment. Professor W. S. Miller, First Lieutenant in psychological work, with salary adjustment. Professor Wallace Notestein for first semester, with salary adjustment, for service on the Committee of Public Information. Professor William A. Riley, from March 1 to June 15, previous to beginning of service at the University. Professor H. E. Robertson, service for two years with U. S. Army Laboratory No. 1 in France. Dr. L. G. Rowntree, for an indefinite period beginning August 1, 1918, without salary, in military service, as Lieutenant-Colonel, Board of Control, Medical Division of Aviation in France. Dr. J. P. Sedgwick for war service for six months, with salary adjustment, beginning July 15, 1917, as Major, Medical Corps, French Children Relief work. Professor C. R. Stauffer, for the year 1918-19, without pay. Professor John T. Stewart, as Major, Engineers' Reserve, with salary adjustment. Professor A. A. Stomberg, speaking campaign in the shipyards, beginning May 23, with full salary. Dr. Frank C. Todd, for two months as Major in Medical Corps at Camp Dodge, without pay. Professor E. S. Thurston, as Major, Provost Marshall's office, on sabbatical furlough for year 1917-18. Professor S. Marx White, for service with Base Hospital No. 26, with rank of Major, beginning January 1, 1918, with full salary. Dr. L. B. Wilson, as Major, in the Medical Reserve, beginning January 27, 1918, with salary adjustment by the Mayo Foundation. Professor Robert M. Yerkes, as Major in psychological service, for an indefinite period, without salary. Associate Professor Fred L. Adair, for Red Cross Service from August 1, 1918, without salary, for period of war or term of appointment. Associate Professor Carl Fisher, for war service from December 15, 1917,

without salary. Dr. Emil S. Geist, as Captain in active service during the period of the war, without salary. Dr. Arthur A. Law, for service with Base Hospital No. 26, with rank of Major, beginning January 1, 1918, with full salary. Associate Professor J. F. McClendon, for military service. Associate Professor L. W. McKeehan, for service as Lieutenant in Naval Reserve for one year with salary adjustment. Dr. A. T. Mann, for military service, as Major in Medical Reserve, for the period of the war, beginning August 1, 1918, without salary. Associate Professor W. R. Ramsey, Red Cross service in France, for six months or a year beginning May 15, 1918. Associate Professor E. C. Stakman, for cereal rusts research in the Mississippi valley for the U. S. Department of Agriculture, from March 11 to September 15, 1918, without pay. Associate Professor Sterling Temple, in war service, for an indefinite period beginning January 9, 1918, without salary. Associate Professor Henry L. Ulrich, military service for the period of the war, beginning September 1, 1918. Assistant Professor R. A. Baker, for military service, for an indefinite period beginning December 22, 1917, without salary. Dr. Moses Barron, for service with Base Hospital No. 26, beginning January 1, 1918, without salary. Dr. W. W. Bissell, for service with Base Hospital No. 26, beginning December 15, 1917, with salary adjustment by the Mayo Foundation. Assistant Professor F. G. Blake, for service with Base Hospital No. 26, beginning February 15, 1918, with salary adjustment. Assistant Professor R. G. Blakey, for service with the War Trade Board, beginning August 1, 1918, without pay. Assistant Professor W. M. Boothy, Director of Gas Schools in France, beginning April 1, 1917, with salary adjustment by the Mayo Foundation until March 1, 1918. Assistant Professor S. C. Burton, for the period of the war for service in the Canadian Army, beginning August 1, 1918. Assistant Professor John Butler, as Captain in the Medical Corps, without pay from July 8, 1917. Assistant Professor Wm. S. Cooper, for 1918-19, without pay, to enter Y. M. C. A. service. Dr. J. Frank Corbett for an indefinite period beginning November 1, 1917, without salary, as Captain in the Medical Reserve. Assistant Professor W. W. Cumberland, until August 1, 1918, without salary, for scientific investigation of

economic conditions in Mexico for the War Trade Board. Assistant Professor C. O. Flagstad, for war service in the Dental Reserve. Assistant Professor R. J. Garber, for duration of war without salary. Assistant Professor H. B. Gislason, on account of illness for the second semester, with regular salary. Dr. A. R. Hall, for the period of the war beginning November 1, 1917, without salary. Assistant Professor A. T. Henrici, for service in Medical Reserve, from August 19, 1917, without salary. Dr. H. G. Irvine, for six months as Organizing Director of Bureau of Venereal Diseases in California and Minneapolis. Assistant Professor A. W. Johnston, for one month beginning October 20, without salary, to do experimental work in oil fields, and for year 1918-19 without pay. Assistant Professor Roy Childs Jones, for service in Camouflage Unit, Engineers' Reserve, beginning October 1, 1918, with salary adjustment. Assistant Professor A. E. Koenig, for two and one-half weeks, beginning April 8, 1918, for a speaking campaign in the German district of South Dakota with pay. Assistant Professor Wm. McDougall, for service with Base Hospital No. 26, beginning January 1, 1918, without salary. Assistant Professor F. R. McMillan, with the U. S. Shipping Board, Department of Concrete Ships, without pay, beginning March 1, 1918. Assistant Professor J. S. Macnie, as Captain in Medical Reserve, without pay, from April 1, 1918. Assistant Professor A. B. Moore, for service with Base Hospital No. 26, beginning December 15, 1917, without salary. Assistant Professor Henry T. Moore, in psychological service, beginning February 19, 1918, with salary adjustment. Assistant Professor Angus W. Morrison, for service with Base Hospital No. 26, without salary. Assistant Professor R. D. Mussey, for service with Base Hospital No. 26, beginning December 15, 1917, without salary. Assistant Professor George N. Northrop, for military service in the Quartermaster Corps. Assistant Professor W. L. Oswald for one year beginning September 1, 1917, without salary, in government service for emergency seed survey. Assistant Professor C. J. Posey for service with the Bureau of Research of the War Trade Board, beginning August 1, 1918, without salary. Assistant Professor Charles A. Reed, for service with Base Hospital No. 26, beginning January 1, 1918, without salary. Assistant Professor W. C. Rutherford, as Commanding

Officer, Field Hospital 135, beginning September 1, 1917, without salary. Assistant Professor S. C. Shipley, leave extended to end of year 1917-18, without pay. Assistant Professor Edward H. Sirich, for duration of war. Assistant Professor John T. Tate, for research work with the Bureau of Standards, from January 1, 1918, to August 1, 1918, without salary. Assistant Professor W. L. Underhill, sabbatical leave, changed to war service basis; Captain in Coast Artillery. Assistant Professor Franklin R. Wright, for military service, beginning September 1, 1917, without salary. Assistant Professor O. S. Zelner, for one year without pay beginning August 1, 1918.

Retirement.—Professor T. L. Haecker, Chairman of the Division of Animal Nutrition, with title of Professor Emeritus of Dairy Husbandry, without salary.

Resignations.—During the year, the following members of professorial rank resigned from the Faculty: Josephine T. Berry, Chief of the Division of Home Economics; H. H. Kildee, Chief of Division of Dairy Husbandry; W. H. Bender, Associate Professor of Agricultural Education; I. H. Derby, Associate Professor of Chemistry; C. W. Howard, Associate Professor of Entomology; John F. Murphy, Associate Professor of Mining; A. H. Benton, Assistant Professor of Farm Management; H. F. Bergman, Assistant Professor of Botany; G. A. Gesell, Assistant Professor of Finance in Extension; Haldor Gislason, Assistant Professor of Public Speaking; Greta Gray, Assistant Professor of Foods and Cookery; Ben C. Helmick, Assistant Professor of Agronomy; Paul E. Klopsteg, Assistant Professor of Physics; E. W. McCullough, Assistant Professor of Mining; F. R. McMillan, Assistant Professor of Structural Engineering; T. W. Mitchell, Assistant Professor of Economics; J. S. Montgomery, Assistant Professor of Animal Husbandry; P. J. Olson, Assistant Professor of Agronomy; W. L. Oswald, Assistant Professor of Botany; C. C. Palmer, Assistant Professor of Veterinary Science; Sidney F. Pattison, Assistant Professor of Rhetoric; Dr. Soren P. Rees, Assistant Professor of Medicine; Dr. Samuel Robinson, Assistant Professor of Surgery, Mayo Foundation; Earl Weaver, Assistant Professor of Dairy Husbandry; L. E. Wolgemuth, Assistant Professor of Mechanical Engineering.

Death.—Dr. Frank C. Todd, died July 5, 1918, while in service as Major at Camp Dodge, Iowa.

Termination of service.—By action of the Board of Regents the terms of service of William A. Schaper, Professor of Political Science, and of Charles E. Skinner, Assistant Professor of Rhetoric, were terminated.

STATISTICS OF REGISTRATION

Table I shows the comparative enrollment for the two-year period in those departments of the University termed "collegiate," which require that all entrants hold at least a diploma from an approved four-year preparatory course. It is the total for this group which must be kept clearly in mind in comparing this University with other institutions, inasmuch as very few, if any other, Universities have departments corresponding to our sub-collegiate group.

TABLE I. COLLEGIATE STUDENTS BY SCHOOLS AND COLLEGES, 1916-1918

College or School	Year 1916-17			Year 1917-18			Gain	Loss
	Men	Women	Total	Men	Women	Total		
Science, Literature, and the Arts:								
Seniors	62	197	259	53	209	262	3	.....
Juniors	181	236	417	128	315	443	26	.....
Sophomores	365	354	719	246	311	557	.....	162
Freshmen	520	419	939	471	468	939	.....	.....
Unclassed	38	83	121	36	78	114	.....	7
Total	1166	1289	2455	934	1381	2315	.....	140
Engineering and Architecture:								
Post-seniors	26	.....	26	8	.....	8	.....	18
Seniors	63	.....	63	38	.....	38	.....	25
Juniors	82	.....	82	61	.....	61	.....	21
Sophomores	173	1	174	127	1	128	.....	46
Freshmen	161	3	164	215	2	217	53	.....
Irregular	18	3	21	8	1	9	.....	12
Total	523	7	530	457	4	461	.....	69
Agriculture:								
Seniors	85	73	158	48	74	122	.....	36
Juniors	95	91	186	57	69	126	.....	60
Sophomores	107	77	184	71	66	137	.....	47
Freshmen	119	70	189	88	68	156	.....	33
Unclassed	13	16	29	3	9	12	.....	17
Total	419	327	746	267	286	553	.....	193

TABLE I—*Continued*

College or School	Year 1916-17			Year 1917-18			Gain	Loss
	Men	Women	Total	Men	Women	Total		
Law:								
Third-year	47	.....	47	26	.....	26	.....	21
Second-year	59	1	60	42	.....	42	.....	18
First-year	112	.....	112	64	2	66	.....	46
Unclassed	3	.....	3	....	.....	.....	.....	3
Academic seniors taking Law	25	1	26	10	.....	10	.....	16
Total	246	2	248	142	2	144	.....	104
Medical:								
Sixth-year	43	2	45	61	2	63	18	.....
Fifth-year	65	2	67	60	1	61	.....	6
Fourth-year	78	1	79	68	6	74	.....	5
Third-year	67	7	74	80	2	82	8	.....
Unclassed	14	1	15	14	2	16	1	.....
Total	267	13	280	283	13	296	16	.....
School for Nurses:	....	68	68	....	87	87	.....	.....
Dentistry:								
Seniors	94	5	99	84	1	85	.....	14
Juniors	84	.....	84	70	.....	70	.....	14
Sophomores	89	.....	89	84	1	85	.....	4
Freshmen	97	1	98	97	2	99	1	.....
Irregular	2	.....	2	1	.....	1	.....	1
Total	366	6	372	336	4	340	.....	32
Mines:								
Seniors	15	.....	15	16	.....	16	1	.....
Juniors	21	.....	21	12	.....	12	.....	9
Sophomores	20	.....	20	18	.....	18	.....	2
Freshmen	21	.....	21	20	.....	20	.....	1
First-year	3	.....	3	8	.....	8	5	.....
Total	80	.....	80	74	.....	74	.....	6
Pharmacy:								
Postgraduates	2	.....	2	1	.....	1	.....	1
Seniors	34	3	37	13	5	18	.....	19
Juniors	13	4	17	24	3	27	10	.....
Sophomores	5	.....	5	....	.....	.....	.....	5
Freshmen	38	5	43	19	10	29	.....	14
Special Students	3	.....	3	2	.....	2	.....	1
Total	95	12	107	59	18	77	.....	30
Analytical and Applied Chemistry:								
Post-seniors	1	.....	1	2	.....	2	1	.....
Seniors	18	1	19	12	.....	12	.....	7
Juniors	14	.....	14	15	1	16	2	.....
Sophomores	22	.....	22	21	.....	21	.....	1
Freshmen	42	1	43	36	1	37	.....	6
Irregular students	4	.....	4	11	.....	11	7	.....
Total	101	2	103	97	2	99	.....	4
Education:								
Seniors	17	24	41	11	36	47	6	.....
Juniors	8	32	40	12	34	46	6	.....
Unclassed	14	109	123	16	90	106	.....	17
Total	39	165	204	39	160	199	.....	5
Graduate	285	98	383	221	106	327	.....	56
Summer Session:								
Minneapolis campus	592	654	1246	415	569	984	.....	262
Agricultural	134	67	201	40	87	127	.....	74
Total	726	721	1447	455	656	1111	.....	336
General totals	4313	2710	7023	3364	2729	6083	.....	940
Less duplicates	454	258	712	304	212	516	.....	.....
Grand total—net	3859	2452	6311	3060	2507	5567	.....	744

TABLE II. SUBCOLLEGIATE STUDENTS, 1916-1918

School	Year 1916-17			Year 1917-18			Gain	Loss
	Men	Women	Total	Men	Women	Total		
Central School of Agriculture:								
Seniors	154	60	214	85	38	123	.....	91
Juniors	121	52	173	136	48	184	11	.....
Freshmen	187	49	236	201	64	265	29	.....
Unclassified	63	3	66	33	7	40	.....	26
Normal Course	....	12	12	1	12	13	1	.....
Total	....	.....	.....	456	169	625	.....	.....
Less duplicates	....	.....	.....	....	1	1	.....	1
Net total	525	176	701	456	168	624	.....	77
Northwest School of Agriculture, Crookston:								
Regular students	147	53	200	148	48	196	.....	4
West Central School of Agriculture, Morris:								
Regular students	88	49	137	122	50	172	35	.....
University High School	82	56	138	87	89	176	38	.....
Totals, Schools	842	334	1176	813	355	1168	.....	8
Short Courses:								
Traction Engineering	26	.....	26	46	.....	46	20	.....
Dairy School	104	.....	104	50	.....	50	.....	54
Rural Life Short Course	136	34	170	17	6	23	.....	147
Editor's Week	58	2	60	53	2	55	.....	5
Elevator Men's Short Course	....	.....	.....	20	3	23	23	.....
Mess Sergeants	....	.....	.....	12	.....	12	12	.....
Consolidated School Prin.	....	.....	.....	73	15	88	88	.....
Extension Gymnasium	25	.....	25	45	32	77	52	.....
Farmers' and Home Makers' Week:								
Central	1324	307	1631	1039	259	1298	.....	333
Crookston	477	25	502	....	.....	.....	.....	502
Morris	53	.....	53	....	.....	.....	.....	53
Boys' and Girls' Week (Junior Short Course)								
Central	666	314	980	188	91	279	.....	701
Crookston	51	9	60	55	33	88	28	.....
Morris	15	17	32	61	39	100	68	.....
Teachers' Training School:								
Central	135	1007	1142	21	757	778	.....	364
Crookston	14	175	189	6	134	140	....	49
Morris	8	139	147	4	97	101	....	46
Farmers' Tractor School:								
Morris	....	.....	.....	87	.....	87	87	.....
Mothers' Week:								
Morris	....	36	36	....	.....	.....	.....	36
Embalmers	40	2	42	18	1	19	.....	23
Totals	3132	2067	5199	1795	1469	3264	.....	.....
Less duplicates	....	.....	.....	6	6	12	.....	12
Net total	....	.....	.....	1789	1463	3252	.....	1947
Grand total (less duplicates)	3791	2356	6147	2602	1818	4420	.....	1727

TABLE III. EXTENSION STUDENTS, 1916-1918

Course	Year 1916-17			Year 1917-18			Gain	Loss
	Men	Women	Total	Men	Women	Total		
General	1230	1024	2254	1098	973	2071	.....	183
Correspondence	113	120	233	73	64	137	.....	96
Law	27	1	28	25	1	26	.....	2
Total	1370	1145	2515	1196	1038	2234	.....	281

TABLE IV. SUMMARY, 1916-1918

Division	Year 1916-17			Year 1917-18			Gain	Loss
	Men	Women	Total	Men	Women	Total		
Collegiate students	3859	2452	6311	3060	2507	5567	.....	744
Subcollegiate students	3791	2356	6147	2602	1818	4420	.....	1727
Less duplicates	....	.....	.....	79	29	108	.....	108
Net total	....	.....	.....	2523	1789	4312	.....	.....
Extension students	1370	1145	2515	1196	1038	2234	.....	281
Grand total	9020	5953	14973	6779	5334	12113	.....	2860

The loss in 1917-18 of 744 students is pretty generally distributed and is unquestionably explained by the war. The only gains appear in the Medical School and the School for Nurses, the former having an increase of 6 per cent and the latter 27 per cent. The main campus Summer Session had the largest numerical loss of 262 students, but the Law School suffered a depletion of practically 42 per cent. Agriculture lost 25.8 per cent; Pharmacy, 28 per cent; Graduate School, 14.6 per cent; Engineering, 13 per cent; Dentistry, 8 per cent; Mines, 7 per cent; Science, Literature, and the Arts, 5.7 per cent; Chemistry, 3 per cent; Education, 2.4 per cent. The net loss for the entire group is 11.7 per cent.

Table II comprises that group of students enrolled in departments where the entrance requirement is less than a four-year high-school course. Here the war made even greater inroads than in the collegiate sections. Losses are particularly noted in agricultural courses for mature persons, altho the registration in the Boy's and Girl's Week course at the Central School is a marked exception.

Note that the Elevator Men's Short Course, the Mess Sergeant's Course, and the Farmers' Tractor Course at Morris are offered for the first time.

The net loss for the entire group is 28 per cent.

Table III is self-explanatory. The students in the General and Law divisions take their work in evening classes, the others by correspondence.

Table IV summarizes Tables I, II, and III and shows the total registration for the entire University. The institution as a whole suffered a net loss of 18.4 per cent in 1917-18 as compared with 1916-17.

Table V assembles the registration figures for the entire institution, or in other words combines Tables I, II, and III.

Table VI records the number and kinds of degrees issued during the past two years. The current year shows 245 fewer candidates than in the preceding year, or a decrease in graduates of 26 per cent. There are no changes of importance in the list except the establishment of the degree of Bachelor of Medicine. This degree supplants the certificate of completed work heretofore given to students at the end of the six-year period. The M.D. degree when granted after the completion of the internship or laboratory year will bear the date of issue.

Table VII shows the distribution by schools of students entering the University for the first time. (a) Accredited public schools in Minnesota; (b) private schools in this state; (c) schools outside of Minnesota. Twenty-seven states are represented in our entering group.

Table VIII shows: (a) the distribution, by counties, of Minnesota students of collegiate grade. Every county in the state is represented; (b) the distribution by states; and (c) by foreign countries. Thirty-six states of the Union are represented at Minnesota. Of the 278 accredited high schools, 186 sent students this year, while 92 are not represented. Nineteen of the private schools sent students, while 14 are not represented.

Table IX indicates the qualitative and quantitative value of the credentials submitted by 531 students who did not matriculate. By "low scholarship" is meant more grades of merely "pass" than "pass with honor." Inasmuch as the "letter of warning" heretofore sent to such students has been eliminated, this table will doubtless be discontinued.

A considerable amount of work is involved in evaluating the credentials of these students, but there is no way by which this can be avoided.

TABLE V. COMPARATIVE REGISTRATION FIGURES, 1916-1918

College	1916-17			1917-18			Gain		Loss	
	Men	Women	Total	Men	Women	Total	Men	Women	Men	Women
Science, Literature, and the Arts...	1192	1289	2481	944	1381	2325	....	92	248	.....
Engineering and Architecture ...	523	7	530	457	4	461	....	.....	66	3
Agriculture	4184	2656	6840	2713	2034	4747	....	.....	1471	622
Law	221	1	222	132	2	134	....	1	89	.....
Medical (including nurses and embalmers)	307	83	390	301	101	402	....	18	6	.....
Dentistry	366	6	372	336	4	340	....	.....	30	2
Mines	80	.....	80	74	.....	74	....	.....	6	.....
Pharmacy	95	12	107	59	18	77	....	6	36	.....
Chemistry	101	2	103	97	2	99	....	.....	4	.....
Education (including Univ. High School)	121	221	342	126	249	375	5	28	....	.....
Graduate	285	98	383	221	106	327	....	8	64	.....
Summer Session (net)	256	461	717	165	400	565	....	.....	91	61
Total	7731	4836	12567	5625	4301	9926	....	.....	2106	535
Less duplicates ...	81	28	109	42	5	47	39	23	....	.....
Net total	7650	4808	12458	5583	4296	9879	....	.....	2067	512
Extension:										
General	1230	1024	2254	1098	973	2071	....	.....	132	51
Correspondence	113	120	233	73	64	137	....	.....	40	56
Law	27	1	28	25	1	26	....	.....	2	.....
	1370	1145	2515	1196	1038	2234	....	.....	174	107
Summary										
Total, residence students	7650	4808	12458	5583	4296	9879	....	.....	2067	512
Total, extension students	1370	1145	2515	1196	1038	2234	....	.....	174	107
Grand Totals	9020	5953	14973	6779	5334	12113	....	.....	2241	619

TABLE VI. DEGREES CONFERRED, 1916-1918

Colleges and Degrees	Year 1916-1917			Year 1917-1918		
	Men	Women	Total	Men	Women	Total
SCIENCE, LITERATURE, AND THE ARTS:						
B.A.	89	168	257	47	165	212
B.A. in Music	1	4	5	....	2	2
B.S. (Medicine)	52	1	53	39	4	43
ENGINEERING AND ARCHITECTURE:						
C.E.	8	.....	8	....	.....	.....
E.E.	14	.....	14	1	.....	1
M.E.	4	.....	4	2	.....	2
B.S. in Engineering	50	.....	50	28	.....	28
B.S. in Architecture	8	.....	8	4	.....	4
AGRICULTURE:						
B.S. (Agriculture)	75	.....	75	34	.....	34
B.S. (Home Economics)	....	55	55	....	64	64
FORESTRY:						
B.S.	3	.....	3	5	.....	5
LAW:						
L.L.B.	34	.....	34	18	.....	18
*MEDICINE:						
M.D.	39	2	41	12	.....	12
Certificates	22	2	24	....	.....	.....
M.B.	....	.....	.....	39	.....	39
Graduates in Nursing	....	12	12	....	13	13
DENTISTRY:						
D.D.S.	90	5	95	75	1	76
MINES:						
E.M.	10	.....	10	6	.....	6
E.M. in Geology	5	.....	5	4	.....	4
Met.E.	1	.....	1	3	.....	3
PHARMACY:						
D.S. in Phm.	....	.....	.....	1	.....	1
B.S. in Phm.	....	.....	.....	1	.....	1
Phm.C.	....	.....	.....	3	1	4
G.Phm.	30	2	32	5	3	8
CHEMISTRY:						
Chem. Eng.	1	.....	1	1	.....	1
B.S.	8	.....	8	4	.....	4
B.S. in Chemistry	8	1	9	4	.....	4
EDUCATION:						
B.A. in Educ.	16	22	38	4	31	35
GRADUATE:						
M.A.	25	20	45	13	19	32
M.S.	19	5	24	8	1	9
M.S. in Orthopedic Surgery	....	.....	.....	1	.....	1
M.S. in Surgery	....	.....	.....	4	.....	4
Ph.D.	9	2	11	10	1	11
Ph.D. in Surgery	1	.....	1	....	.....	.....
D.S.	1	.....	1	....	.....	.....
D.S. in Neurology	1	.....	1	....	.....	.....
D.S. in Pediatrics	1	.....	1	....	.....	.....
Totals	625	301	926	376	305	681

* Graduates of this class who enlisted in active service received their M.D. degrees prior to their year of internship.

TABLE VII. SCHOOLS FROM WHICH ENTRANTS WERE ACCEPTED, 1917-1918

	Science, Literature, and the Arts	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nurses	Special Law	Agriculture	Total
MINNESOTA										
Ada	1	....	....	....	....	....	....	....	....	1
Adrian	1	....	....	....	....	....	....	....	....	1
Aitkin	1	....	....	....	....	....	....	....	....	1
Akeley	.....	....	....	....	....	....	....	....	....	....
Albert Lea	4	....	....	....	....	....	....	....	1	5
Alden	1	....	....	....	....	....	....	....	....	1
Alexandria	.....	4	....	1	1	....	....	....	....	6
Amboy	.....	....	....	....	....	....	....	....	....	....
Annandale	.....	....	....	....	....	....	....	....	....	....
Anoka	3	1	....	....	....	1	....	....	2	7
Appleton	3	1	....	....	....	....	....	....	....	4
Argyle	.....	....	....	....	....	....	1	....	....	1
Arlington	.....	1	....	....	....	....	....	....	....	1
Atwater	.....	....	....	....	....	....	....	....	....	....
Aurora	.....	....	....	....	....	....	....	....	....	....
Austin	4	1	....	....	5	....	....	....	1	11
Bagley	.....	....	....	....	....	....	....	....	....	....
Baudette	1	....	....	....	....	....	....	....	....	1
Barnesville	.....	1	....	....	....	....	....	....	....	1
Battle Lake	.....	....	....	....	....	1	....	....	....	1
Beardsley	1	....	....	....	....	....	....	....	....	1
Belle Plaine	.....	....	....	....	1	....	....	....	....	1
Bellingham	.....	....	....	....	....	....	....	....	....	....
Bemidji	1	1	1	....	....	....	....	....	....	3
Benson	2	....	....	....	....	....	....	....	....	2
Bird Island	.....	....	....	....	....	....	....	....	1	1
Biwabik	1	....	....	....	....	....	....	....	....	1
Black Duck	.....	....	....	....	....	....	....	....	....	....
Blooming Prairie	1	....	....	....	1	....	....	....	1	3
Blue Earth	2	....	....	....	....	1	....	....	....	3
Brainerd	2	....	....	....	1	....	....	....	....	3
Brandon	.....	....	....	....	....	....	....	....	1	1
Breckenridge	.....	1	....	....	....	....	....	....	....	1
Brooten	1	....	....	....	....	....	....	....	....	1
Brown Valley	1	....	....	....	1	1	....	....	....	3
Buffalo	.....	....	....	....	....	....	....	....	....	....
Buhl	.....	....	....	....	....	....	....	....	....	....
Caledonia	.....	....	....	....	....	1	....	....	....	1
Cambridge	2	1	....	....	....	....	....	....	....	3
Canby	.....	....	....	....	1	....	....	....	1	2
Cannon Falls	.....	....	....	....	....	....	....	....	....	....
Carlton	.....	....	....	....	....	....	....	....	....	....
Cass Lake	.....	....	....	....	....	....	....	....	....	....
Chaska	.....	....	....	....	....	....	....	....	....	....
Chatfield	.....	....	....	....	....	....	....	....	....	....
Chisholm	1	....	....	....	....	....	....	....	....	1
Claremont	.....	....	....	....	....	....	....	....	....	....
Clarkfield	1	....	....	....	....	....	....	....	....	1
Clearwater	.....	....	....	....	....	....	....	....	1	1
Clinton	1	....	....	....	....	....	....	....	....	1
Cloquet	.....	....	....	....	....	....	....	....	1	1
Cokato	1	1	....	....	1	....	....	....	....	3
Coleraine	.....	....	....	....	....	....	....	....	....	....
Cottonwood	.....	....	....	....	....	....	....	....	....	....
Crookston	3	1	....	....	....	....	....	....	....	4
Crosby	.....	....	....	1	....	....	....	....	....	1
Dassel	2	....	....	....	....	....	....	....	....	2
Dawson	3	....	....	....	....	....	....	....	....	3
Deer River	.....	....	....	....	....	....	....	....	....	....
Delano	.....	....	....	....	....	....	....	....	....	....
Detroit	3	1	....	....	....	....	....	....	....	4
Dodge Center	.....	....	....	....	....	....	....	....	1	1

TABLE VII—*Continued*

	Science, Literature, and the Arts	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nurses	Special Law	Agriculture	Total
Duluth										
Cathedral	.....	....	1	....	....	....	....	....	....	1
Central	10	1	1	3	2	....	3	....	....	20
Indus. High	.....	1	....	....	....	....	....	....	....	1
R. E. Denfield	2	....	....	....	1	....	....	....	....	3
Eagle Bend	1	....	....	....	....	....	....	....	....	1
East Grand Forks	.....	....	....	....	....	....	....	....	....	....
Echo	1	....	....	....	....	....	....	....	....	1
Edgerton	1	1	....	....	....	....	....	....	....	2
Elbow Lake	.....	....	....	....	....	....	....	....	....	....
Elgin	.....	....	....	....	....	....	....	....	1	1
Elk River	1	....	....	....	....	....	....	....	1	2
Elmore	.....	....	....	....	....	....	....	....	....	....
Ely	2	1	....	1	....	....	....	....	....	4
Eveleth	1	1	....	....	....	....	....	....	....	2
Excelsior	.....	....	....	....	....	....	....	....	....	....
Fairfax	1	....	....	....	1	....	....	....	1	3
Fairmont	1	2	....	....	....	....	....	....	....	3
Faribault	1	...	...	1	....	1	1	....	....	4
Farmington	3	....	....	....	....	....	....	....	....	3
Fergus Falls	3	....	....	....	2	....	....	....	....	5
Fertile	.....	....	....	....	....	....	....	....	....	....
Foley	1	....	....	....	....	....	....	....	....	1
Forest Lake	.....	....	....	....	....	....	....	....	....	....
Fosston	.....	....	....	....	....	....	....	....	....	....
Franklin	3	....	....	....	....	....	....	....	....	3
Frazee	1	1	....	....	....	....	....	....	....	2
Fulda	.....	....	....	....	....	....	....	....	....	....
Gaylord	.....	1	....	....	....	....	....	....	....	1
Gilbert	.....	....	....	....	....	....	....	....	....	....
Gladstone	.....	....	....	1	....	....	....	....	....	1
Glencoe	2	....	....	....	....	....	....	....	....	2
Glenwood	.....	....	....	....	1	....	....	....	....	1
Graceville	.....	....	....	....	....	....	....	....	....	....
Grand Meadow	.....	....	....	....	....	....	....	....	1	1
Grand Rapids	1	....	....	....	....	....	....	....	....	1
Granite Falls	.....	....	....	....	....	....	....	....	....	....
Grove City	1	....	....	....	....	....	....	....	....	1
Hallock	.....	1	....	....	....	....	....	....	....	1
Halstad	2	....	....	....	....	....	....	....	....	2
Harmony	.....	....	....	....	....	....	....	....	....	....
Hastings	3	2	....	....	....	....	....	....	....	5
Hawley	.....	....	....	....	....	....	....	....	....	....
Hayfield	1	....	....	....	1	....	....	....	....	2
Hector	1	....	....	....	....	....	1	....	....	2
Henderson	1	....	....	....	....	....	....	....	....	1
Hendrum	.....	....	....	....	....	....	....	....	....	....
Henning	3	....	....	....	....	....	....	....	....	3
Herman	.....	....	....	....	1	....	....	....	....	1
Heron Lake	.....	....	....	....	....	....	....	....	....	....
Hibbing	.....	....	....	....	....	....	....	....	....	....
Hinckley	.....	....	....	....	....	....	....	....	....	....
Hopkins	1	1	....	....	....	....	....	....	....	2
Houston	2	....	....	....	....	....	....	....	1	3
Howard Lake	.....	....	....	....	....	....	....	....	....	....
Hutchinson	2	....	....	....	....	....	1	....	2	5
International Falls	1	....	....	....	....	....	....	1	1	3
Ivanhoe	.....	....	....	....	....	....	....	....	....	....
Jackson	2	....	....	....	....	....	....	....	....	2
Janesville	.....	....	....	....	....	1	....	....	....	1
Jasper	.....	....	....	....	....	....	....	....	....	....
Jordan	.....	....	....	....	....	....	....	....	....	....
Kasota	1	....	....	....	....	....	....	....	....	1
Kasson	1	....	....	....	....	....	....	....	....	1
Kenyon	3	....	....	....	....	....	....	....	....	3
Kerkhoven	.....	....	....	....	....	....	....	....	....	....

TABLE VII—*Continued*

	Science, Literature, and the Arts	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nurses	Special Law	Agriculture	Total
Kimball	....	....	....	....	....	....	....	....	....	....
Lake Benton	....	1	....	....	....	....	....	....	....	1
Lake City	1	....	....	....	....	....	....	....	....	1
Lake Crystal	....	....	....	....	1	....	....	....	....	1
Lakefield	....	1	....	1	....	....	....	....	2	4
Lake Park	1	....	....	....	....	....	....	....	....	1
Lamberton	1	....	....	....	....	....	....	....	....	1
Lanesboro	1	1	1	....	1	....	....	....	....	4
Le Roy	....	1	....	....	....	....	....	....	....	1
Le Sueur	1	....	1	....	....	....	....	....	....	2
Le Sueur Center	....	....	....	....	....	....	....	....	....	....
Lester Prairie	1	....	....	....	....	....	....	....	....	1
Lewiston	....	....	....	....	....	....	....	....	....	....
Lindstrom	....	....	....	....	....	....	....	....	....	....
Litchfield	1	....	....	....	....	....	....	....	....	1
Little Falls	2	1	....	....	....	....	....	....	1	4
Little Fork	....	....	....	....	....	....	....	....	....	....
Long Prairie	3	....	....	....	....	....	....	1	....	4
Luverne	5	....	....	....	....	....	....	....	....	5
Lyle	....	....	....	....	....	....	....	....	....	....
McIntosh	....	....	....	....	....	....	....	....	....	....
Mabel	....	....	....	....	....	....	....	....	....	....
Madelia	4	....	....	....	....	....	....	....	1	5
Madison	1	1	....	....	....	....	....	....	....	2
Mahnomen	....	....	....	....	....	....	....	....	....	....
Mankato	3	1	....	....	....	1	1	....	....	6
Mantorville	....	....	....	....	....	....	....	....	....	....
Maple Lake	1	....	....	....	....	....	....	....	....	1
Maple Plain	....	....	....	....	....	....	....	....	....	....
Mapleton	....	....	....	....	1	....	....	....	1	2
Marietta	....	....	....	....	....	....	....	....	....	....
Marshall	3	....	1	....	1	....	....	....	....	5
Maynard	....	3	....	....	....	....	....	....	....	3
Mazeppa	....	....	....	....	....	....	....	....	....	....
Medford	....	....	....	....	....	....	....	....	....	....
Melrose	2	....	....	....	....	....	....	....	....	2
Milaca	....	....	....	....	....	....	....	....	....	....
Minneapolis										
Central	83	19	4	4	4	2	....	....	10	126
East	50	13	2	....	3	1	1	....	4	74
North	45	16	3	2	6	1	....	....	1	74
South	41	10	....	1	7	1	....	1	4	65
U. of Minn. H.S.	4	2	....	....	....	....	2	....	2	10
West	68	8	5	1	....	....	....	1	7	90
Minneota	....	....	....	....	....	....	....	....	....	....
Minnesota Lake	....	1	....	....	....	....	....	....	....	1
Montevideo	1	1	....	....	....	....	....	....	....	2
Montgomery	....	....	....	....	....	1	....	....	....	1
Monticello	....	....	....	....	....	....	....	....	1	1
Montrose	....	....	....	....	....	....	....	....	....	....
Moorhead	....	....	....	....	....	....	....	....	....	....
Mora	1	....	....	....	....	1	....	....	2	4
Morgan	....	....	....	....	....	....	....	....	....	....
Morris	....	....	....	....	....	....	....	....	1	1
Morristown	1	....	....	....	....	1	....	....	....	2
Morton	1	....	....	....	....	....	....	....	....	1
Mountain Iron	....	....	....	....	....	....	....	....	....	....
Mountain Lake	....	....	....	....	....	....	....	....	....	....
New London	1	....	....	....	1	....	....	....	....	2
New Prague	....	....	....	....	1	....	1	....	1	3
New Richland	....	....	....	....	....	....	....	....	....	....
New Ulm	3	2	....	....	1	....	1	....	2	9
North Branch	1	....	....	....	....	....	....	....	....	1
Northfield	....	1	....	....	....	....	2	....	....	3
North St. Paul	....	1	....	....	....	....	....	....	....	1

TABLE VII—*Continued*

	Science, Literature, and the Arts	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nurses	Special Law	Agriculture	Total
Norwood-Young America	....	....	....	....	....	....	....	....	....	....
Olivia	....	....	....	....	....	....	....	....	....	....
Ortonville	4	....	....	....	....	....	....	....	1	5
Osakis	....	1	....	....	1	....	....	....	....	2
Owatonna	....	....	....	....	....	1	....	....	4	5
Parkers Prairie	1	1	....	....	....	....	....	....	....	2
Park Rapids	....	....	....	....	....	....	....	....	....	....
Paynesville	....	....	....	....	....	....	....	....	....	....
Pelican Rapids	....	....	....	....	....	....	....	....	....	....
Pequot	....	....	....	....	....	....	1	....	....	1
Perham	....	....	....	....	....	....	....	....	....	....
Pine City	1	....	....	....	....	....	....	....	....	1
Pine Island	....	....	....	....	....	....	....	....	....	....
Pine River	....	....	....	....	....	....	....	....	....	....
Pipestone	1	....	....	....	....	....	....	....	1	2
Plainview	....	....	....	....	....	....	....	....	....	....
Preston	....	....	....	....	....	....	....	....	....	....
Princeton	....	1	1	....	1	....	....	....	....	3
Red Lake Falls	....	....	....	....	....	....	....	....	....	....
Red Wing	5	1	1	1	....	....	....	....	....	8
Redwood Falls	2	2	....	....	....	....	1	....	....	5
Renville	1	....	....	....	2	....	....	....	....	3
Rochester	3	3	....	....	1	....	....	....	....	7
Royalton	2	....	....	....	....	....	....	....	1	3
Rush City	....	....	....	....	....	....	....	....	....	....
Rushford	....	....	....	....	....	....	....	....	....	....
Sacred Heart	....	....	....	....	....	....	....	....	....	....
Saint Charles	....	....	....	....	....	....	1	....	....	1
Saint Cloud	1	....	1	....	....	....	....	....	2	4
Saint James	1	....	....	....	....	....	....	....	....	1
Saint Louis Park	3	....	....	....	....	....	....	1	3	7
Saint Paul										
Central	58	5	....	1	2	....	2	....	10	78
Humboldt	8	....	....	....	1	....	....	....	2	11
Johnson	8	3	1	....	3	....	....	....	1	16
Mechanic Arts	16	1	3	....	2	2	1	1	6	32
Saint Peter	1	....	....	....	....	....	....	....	....	1
Sandstone	1	....	....	....	....	....	....	....	....	1
Sauk Center	2	1	....	....	....	....	....	....	....	3
Sauk Rapids	1	1	....	....	....	....	....	....	....	2
Shakopee	....	....	....	....	....	....	....	....	....	....
Sherburn	....	....	1	....	....	....	1	....	....	2
Skyberg	1	....	....	....	....	....	....	....	....	1
Slayton	....	....	....	....	1	....	....	....	....	1
Sleepy Eye	....	....	....	....	....	....	....	....	....	....
South St. Paul	1	1	....	....	1	....	....	....	1	4
Spooner	1	....	....	....	....	....	....	....	....	1
Springfield	1	....	....	....	....	....	....	....	....	1
Spring Grove	....	....	....	....	....	....	....	....	....	....
Spring Valley	1	....	....	....	....	....	....	....	1	2
Staples	2	....	....	....	1	....	....	....	....	3
Starbuck	2	1	....	....	....	....	....	....	2	5
Stephen	2	....	....	....	....	....	....	....	....	2
Stewartville	3	....	....	....	....	....	....	....	....	3
Stillwater	3	2	....	1	1	....	....	....	4	11
Taylors Falls	2	....	....	....	....	1	....	....	....	3
Thief River Falls	....	....	....	....	2	....	....	....	1	3
Tower	1	....	....	....	....	....	....	....	....	1
Tracy	1	....	....	....	....	....	....	....	....	1
Truman	....	....	....	....	....	....	....	....	....	....
Two Harbors	1	....	1	....	....	....	....	....	....	2
Twin Valley	....	....	....	....	....	....	....	....	....	....
Tyler	....	....	....	....	....	....	....	....	....	....
Villard	....	....	....	....	....	....	....	....	....	....
Virginia	7	....	....	....	....	....	....	....	....	7
Wabasha	1	....	....	....	1	....	....	....	....	2

TABLE VII—*Continued*

	Science, Literature, and the Arts	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nurses	Special Law	Agriculture	Total
Waconia	1	1	....	....	....	....	....	....	....	2
Wadena	2	....	....	....	1	....	....	....	2	5
Wahkon	.....	1	....	....	....	....	....	....	....	1
Walker	.....	....	....	....	....	....	....	....	....	....
Walnut Grove	1	....	....	....	....	....	....	....	....	1
Warren	1	1	....	....	....	....	....	....	....	2
Waseca	.....	....	....	....	....	....	....	....	....	....
Waterville	.....	....	....	....	....	....	....	....	....	....
Watertown	.....	2	1	....	....	....	....	....	....	3
Wayzata	1	....	....	....	....	....	....	....	....	1
Welcome	.....	....	....	....	....	....	....	....	....	....
Wells	.....	....	....	....	....	....	....	....	....	....
Westbrook	.....	....	....	....	....	....	....	....	....	....
West Concord	.....	....	....	....	....	....	....	....	....	....
Wheaton	1	....	....	....	....	....	....	....	....	1
White Bear	4	1	....	1	1	....	1	....	1	9
Willmar	.....	1	....	....	1	....	....	....	....	2
Windom	2	....	....	....	....	....	....	....	....	2
Winnebago	.....	....	....	....	....	....	....	....	....	....
Winona	.....	....	....	....	....	....	....	....	1	1
Winthrop	.....	....	....	....	1	....	....	....	....	1
Worthington	1	....	....	....	....	....	....	....	....	1
Zumbrota	.....	....	....	....	....	....	1	....	....	1
MINNESOTA										
State Board Examinations	1	1	....	....	....	....	....	....	1	3
Augsburg Seminary	1	....	....	....	....	....	....	....	....	1
Backus School	7	....	....	....	....	....	....	....	....	7
Bethel Academy	.....	....	1	....	1	....	....	....	....	2
Blake School	1	1	....	....	....	....	....	....	....	2
Central School of Agriculture	.....	....	....	....	....	....	....	....	2	2
Concordia College, Moorhead	1	....	....	....	....	....	....	....	....	1
Gustavus Adolphus	1	....	....	....	....	....	....	....	....	1
Minnehaha Academy	2	....	....	....	....	....	....	....	....	2
Minnesota College	6	1	....	1	1	....	....	....	1	10
Northrop Collegiate Institute	4	....	....	....	....	....	....	....	....	4
Northwestern School of Agriculture, Crookston	.....	....	....	....	....	....	....	....	1	1
Park Region Luther College	1	....	....	....	1	....	....	....	....	2
Parker College	.....	1	....	....	....	....	....	....	....	1
Pillsbury Academy	2	....	....	....	....	....	....	....	....	2
St. Benedict's Acad	1	....	....	....	....	....	....	....	....	1
St. Catherine's Acad	3	....	....	....	....	....	....	....	....	3
St. John's College	1	2	....	....	1	....	....	....	....	4
St. Joseph's Acad	3	....	....	....	....	....	....	....	....	3
St. Margaret's Acad	4	....	....	....	....	....	....	....	1	5
St. Mary's Hall	1	....	....	....	....	....	....	....	....	1
St. Thomas College	1	4	....	....	1	....	....	....	....	6
Shattuck	6	....	2	....	....	....	....	....	....	8
Stanley Hall	2	....	....	....	....	....	....	....	....	2
Summit School	4	....	....	....	....	....	....	....	....	4
Villa Sancta Scholastica	1	....	....	....	....	....	....	....	....	1
Visitation Convent	2	....	....	....	....	....	....	....	....	2
ARKANSAS										
Monticello Academy	.....	....	....	....	....	1	....	....	....	1
CALIFORNIA										
Long Beach	1	....	....	....	....	....	....	....	....	1
Oakland—Tech. H. S.	1	....	....	....	....	....	....	....	....	1
COLORADO										
Pueblo—Centennial H.S.	2	....	....	....	....	....	....	....	....	2

TABLE VII—*Continued*

	Science, Literature, and the Arts	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nurses	Special Law	Agriculture	Total
FLORIDA										
Winter Pk.—Rollins Col.	1	....	....	....	....	....	....	....	....	1
GEORGIA										
Fort Valley	.....	....	....	....	....	....	....	....	1	1
IDAHO										
Twin Falls	1	....	....	....	....	....	....	....	....	1
ILLINOIS										
Belvedere	1	....	....	....	....	....	....	....	....	1
Canton	.....	....	....	....	....	....	....	....	1	1
Champagne	1	....	....	....	....	....	....	....	....	1
Chicago										
Latin Sch. for Girls	1	....	....	....	....	....	....	....	....	1
Wendell Philipps	.....	....	....	....	....	....	....	....	1	1
Edenbergh	.....	1	....	....	....	....	....	....	....	1
Greenfield	.....	....	1	....	....	....	....	....	....	1
Joliet	.....	1	....	....	....	....	....	....	....	1
Lake Forest, Ferry Hall	1	....	....	....	....	....	....	....	....	1
Rockford	.....	1	....	....	....	....	....	....	....	1
Rock Island	.....	....	....	....	....	....	....	....	1	1
INDIANA										
Culver Mil. Acad	1	....	....	....	....	....	....	....	....	1
South Bend	.....	1	....	....	....	....	....	....	....	1
Valparaiso	.....	1	....	....	....	....	....	....	....	1
IOWA										
Burt	1	....	....	....	....	....	....	....	....	1
Cedar Rapids	1	....	....	....	....	....	....	....	....	1
Charles City	2	....	....	....	....	....	....	....	....	2
Cherokee	1	....	....	....	....	....	....	....	....	1
Cresco	.....	1	....	....	....	....	....	....	....	1
Davenport	1	....	....	....	....	....	....	....	....	1
Dayton	2	....	....	....	....	....	....	....	....	2
Des Moines										
North High	1	....	....	....	....	....	....	....	....	1
West High	2	....	....	....	....	....	....	....	....	2
Emmetsburg										
St. Mary's Acad	1	....	....	....	....	....	....	....	....	1
Hampton	1	....	....	....	....	....	....	....	....	1
Hubbard	.....	....	....	....	....	....	1	....	....	1
Independence	1	....	....	....	....	....	....	....	....	1
Lake Mills	.....	....	....	....	....	....	1	....	....	1
Le Mars	1	....	....	....	....	....	....	....	1	2
Mequoketa	1	....	....	....	....	....	....	....	....	1
Marion	1	....	....	....	....	....	....	....	....	1
Mason City	1	....	....	....	....	....	....	....	....	1
Nashua	.....	....	....	....	1	....	....	....	....	1
New Hampton	1	....	....	....	....	....	....	....	....	1
Nora Springs	1	....	....	....	....	....	....	....	....	1
Parkersburg	1	....	....	....	....	....	....	....	....	1
Penora										
Guthrie Co. H. S.	1	....	....	....	....	....	....	....	....	1
Perry	1	....	....	....	....	....	....	....	1	2
Postville	1	....	....	....	....	....	....	....	....	1
Primghar	1	....	....	....	....	....	....	....	....	1
Rock Rapids	1	....	....	....	....	....	....	....	....	1
Sac City	1	....	....	....	....	....	....	....	....	1
Sibley	.....	1	....	....	....	....	....	....	1	2
Tipton	1	....	....	....	....	....	....	....	....	1
Waukon	1	....	....	....	....	....	....	....	....	1
Webster City	1	....	....	....	....	....	....	....	....	1
West Waterloo	3	....	....	....	....	....	....	....	....	3
KANSAS										
Kansas City										
Kansas University	1	....	....	....	....	....	....	....	....	1
Sumner Co. H. S.	.....	1	....	....	....	....	....	....	....	1
MAINE										
Fort Fairfield	1	....	....	....	....	....	....	....	....	1
MASSACHUSETTS										
Cambridge	.....	....	....	....	....	....	....	....	1	1

TABLE VII—*Continued*

	Science, Literature, and the Arts	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nurses	Special Law	Agriculture	Total
Wellesley										
Dana Hall	1	....	....	....	....	....	....	....	....	1
MICHIGAN										
Charlotte	.....	....	....	....	....	....	....	....	1	1
Crystal Falls	1	....	....	....	....	....	....	....	....	1
Menominee	1	....	....	....	....	....	....	....	....	1
Muskegon	.....	1	....	....	....	....	....	....	....	1
St. Mary's H. S.	.....	1	....	....	....	....	....	....	....	1
MISSOURI										
St. Louis—Principia	1	....	....	....	....	....	....	....	....	1
Shelbina	1	....	....	....	....	....	....	....	....	1
Willow Springs	.....	1	....	....	....	....	....	....	....	1
MONTANA										
Anaconda	1	....	....	....	....	....	....	....	....	1
Billings	1	2	....	....	....	....	....	....	....	3
Butte	.....	....	....	....	....	1	....	....	....	1
Chokio	.....	....	....	....	1	....	....	....	....	1
Culberton	.....	....	....	....	1	....	....	....	....	1
Cut Bank	.....	1	....	....	....	....	....	....	....	1
Glasgow	1	....	....	....	....	....	....	....	....	1
Havre	.....	1	....	....	....	....	....	....	....	1
Miles City										
Custer Co. H. S.	.....	....	....	....	....	1	....	....	....	1
Sidney	1	....	....	....	....	....	....	....	....	1
NEBRASKA										
Jackson										
St. Catherine's Acad.	1	....	....	....	....	....	....	....	....	1
Omaha—Central	1	....	....	....	....	....	....	....	....	1
NEW JERSEY										
Englewood—Dwight S.	1	....	....	....	....	....	....	....	....	1
NEW YORK										
Townsend—Harris Hall	.....	....	....	....	....	....	....	....	1	1
NORTH DAKOTA										
Belfield	1	....	....	....	....	....	....	....	....	1
Bismarck	1	....	....	....	....	1	....	....	....	2
Casselton	2	....	....	....	....	....	....	....	....	2
Churchs Ferry	1	....	....	....	....	....	....	....	....	1
Cooperstown	1	....	....	....	....	....	....	....	....	1
Devils Lake	1	....	....	....	....	....	....	....	....	1
Dickinson	.....	1	....	....	....	....	....	....	....	1
Donnybrook	1	....	....	....	....	....	....	....	....	1
Ellendale—Indus. H.S.	1	....	....	....	....	....	....	....	....	1
Enderlin	1	....	....	....	....	....	....	....	....	1
Esmond	.....	....	....	....	1	....	....	....	....	1
Fairmont	2	....	....	....	....	....	....	....	....	2
Grafton	1	....	....	....	....	....	....	....	1	2
Harvey	1	....	....	....	....	....	....	....	....	1
Hebron	2	....	....	....	....	....	....	....	....	2
Jamestown										
Jamestown College	.....	....	....	....	....	....	1	....	....	1
Kenmar	1	....	....	....	....	....	....	....	....	1
Langdon	1	1	....	....	....	....	....	....	1	3
Leeds	.....	....	....	....	1	....	....	....	....	1
Lidgerwood	2	....	....	....	....	....	....	....	....	2
Mayville	.....	1	....	....	....	....	....	....	....	1
Minnewawkon	1	....	....	....	....	....	....	....	....	1
Minot	.....	....	....	....	....	....	1	....	1	2
Minto	1	....	....	....	....	....	....	....	....	1
Pembina	1	....	....	....	....	....	....	....	....	1
St. Thomas	.....	1	....	....	....	....	....	....	....	1
Valley City	2	....	....	1	....	....	....	....	....	3
Wahpeton	2	....	1	....	....	....	....	....	....	3
Walhalla	1	....	....	....	....	....	....	....	....	1
OHIO										
Cleveland—Laurel Sch.	1	....	....	....	....	....	....	....	....	1

TABLE VII—*Continued*

	Science, Literature, and the Arts	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nurses	Special Law	Agriculture	Total
OKLAHOMA										
Pawhuska	1	....	....	....	....	....	....	....	....	1
PENNSYLVYNIA										
Torresdale—Eden Hall	1	....	....	....	....	....	....	....	....	1
SOUTH DAKOTA										
Aberdeen	1	....	....	....	....	1	....	....	....	2
Alexandria	1	....	....	....	....	....	....	....	....	1
Ashton	.....	1	....	....	....	....	....	....	....	1
Beresford	1	....	....	....	....	....	....	....	....	1
Bryant	2	....	....	....	....	....	....	....	....	2
Chamberlain	1	....	....	....	....	....	....	....	....	1
Clark	1	....	....	....	....	....	....	....	....	1
Dakota Wesleyan	.....	1	....	....	....	....	....	....	....	1
Dell Rapids	1	2	....	....	....	....	....	....	....	3
De Smet	2	....	....	....	....	....	....	....	....	2
Egan	.....	....	....	....	....	....	....	1	....	1
Elkpoint	1	....	....	....	....	....	....	....	....	1
Ft. Pierre	1	....	....	....	....	....	....	....	....	1
Garretson	1	....	....	....	....	....	....	....	....	1
Hecla	.....	....	....	....	....	....	....	....	1	1
Hot Springs	3	....	....	....	....	....	....	....	....	3
Huron College	.....	1	....	....	....	....	....	....	....	1
Lake Preston	1	....	....	....	....	....	....	....	....	1
Lemon	1	....	....	....	....	....	....	....	....	1
McLaughlin	.....	1	....	....	....	....	....	....	....	1
Marion	1	....	....	....	....	....	....	....	....	1
Milbank	1	....	....	....	....	....	....	....	....	1
Mitchell	.....	1	....	....	....	....	....	....	....	1
Peever	1	....	....	....	....	....	....	....	....	1
Redfield	.....	....	....	....	....	....	1	....	....	1
Sioux Falls										
All Saints	1	....	....	....	....	....	....	....	....	1
Washington	1	....	....	....	1	....	....	....	....	2
Sisseton	1	....	....	....	....	....	....	....	1	2
Summit	.....	....	....	....	....	....	....	....	1	1
Toronto	.....	1	....	....	....	....	....	....	....	1
Watertown	3	1	....	....	....	....	....	....	....	4
Waubay	1	....	....	....	....	....	....	....	....	1
Webster	1	1	....	....	....	....	....	....	....	2
White Rock	.....	2	....	....	....	....	....	....	....	2
Willow Lake	1	....	....	....	....	....	....	....	....	1
Wilmot	.....	1	....	....	....	....	....	....	....	1
TEXAS										
Wichita Falls	1	....	....	....	....	....	....	....	....	1
WASHINGTON										
Centralia	.....	....	....	....	....	....	....	....	1	1
Marysville	.....	....	....	....	....	....	....	....	1	1
Seattle										
Queen Anne H. S.	.....	....	....	....	1	....	....	....	....	1
Spokane										
Lewis and Clarke	.....	....	....	....	....	....	....	1	....	1
Wakeno	.....	....	1	....	....	....	....	....	....	1
Whitewater	.....	1	....	....	....	....	....	....	....	1
WISCONSIN										
Ashland	1	....	....	....	....	....	....	....	....	1
Baldwin	1	....	....	....	....	....	....	....	....	1
Barron	.....	....	....	....	....	1	....	....	....	1
Cashton	1	....	....	....	....	....	....	....	....	1
Chippewa Falls	2	....	....	....	....	....	....	....	....	2
Colby	1	....	....	....	....	....	....	....	....	1
Delafield										
St. John's Mil. Ac.	5	....	....	....	....	....	....	....	....	5
Durand	2	....	....	....	....	....	....	....	....	2
Eau Claire	1	2	....	....	....	1	....	....	....	4
Fairchild	2	....	....	....	....	....	....	....	....	2
Fond du Lac										
Grafton Hall	1	....	....	....	....	....	....	....	....	1

TABLE VII—*Continued*

	Science, Literature, and the Arts	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nurses	Special Law	Agriculture	Total
Glenwood City	1	....	....	....	....	....	....	....	....	1
Hudson	3	1	....	....	1	....	....	....	....	5
Galahad	1	....	....	....	....	....	....	....	....	1
La Crosse	1	....	....	....	....	....	....	....	....	1
Ladysmith	.....	....	....	....	....	....	....	....	2	2
Lancaster	1	....	....	....	....	....	....	....	....	1
Madison	.....	....	....	....	....	....	....	....	1	1
New Richmond	4	1	....	....	1	....	....	....	....	6
Racine	.....	....	....	....	....	....	....	....	2	2
St. Croix Falls	2	....	....	....	....	....	....	....	....	2
Sinsinawa—St. Clara	1	....	....	....	....	....	....	....	....	1
Sparta	1	....	....	....	....	....	....	....	....	1
Stevens Point	1	....	....	....	....	....	....	....	....	1
Superior										
Nelson Dewey H. S.	.....	1	....	....	....	....	....	....	....	1
Whitewater	1	1	....	....	....	....	....	....	....	2
WYOMING										
Torrington	.....	....	1	....	....	....	....	....	....	1
CANADA	.....	2	....	....	....	....	....	....	1	3
CHINA	.....	1	....	....	....	....	....	....	....	1
NORWAY	.....	....	....	....	2	....	....	....	....	2

SUMMARY

South Dakota	50	Missouri	3	Georgia	1
Wisconsin	49	California	2	Idaho	1
North Dakota	42	Colorado	2	Maine	1
Iowa	41	Kansas	2	New Jersey	1
Montana	12	Massachusetts	2	New York	1
Illinois	11	Nebraska	2	Pennsylvania	1
Washington	6	Ohio	2	Texas	1
Michigan	5	Arkansas	1	Wyoming	1
Indiana	3	Florida	1		

Total number of entrants for Minnesota	1104
Total number for United States outside of Minnesota	244
Total number for foreign countries	6
Grand total	1354

TABLE VIII. GEOGRAPHICAL DISTRIBUTION OF MINNESOTA STUDENTS OF COLLEGIATE GRADE (OTHER THAN SUMMER SESSION)

1917-1918

COUNTIES:	Science, Literature, and the Arts	Engineering	Agriculture	Law	Medical	Nurses	Dentistry	Mines	Pharmacy	Chemistry	Education	Graduate	Total
Aitkin	3	...	2	...	...	...	...	...	...	...	...	...	5
Anoka	6	2	3	...	2	...	...	...	2	...	...	1	16
Becker	9	3	3	2	1	1	2	...	...	...	1	...	22
Beltrami	6	3	1	...	...	...	3	...	...	1	...	1	15
Benton	1	...	...	1	...	...	...	...	...	...	1	...	3
Big Stone	6	...	1	1	...	...	2	...	...	1	...	...	11
Blue Earth	9	6	6	3	2	3	5	...	...	3	4	2	43
Brown	11	3	6	...	1	1	3	...	...	...	...	1	26
Carlton	8	...	2	1	1	...	...	...	...	1	...	...	13
Carver	3	3	...	...	3	...	...	...	1	1	...	...	11
Cass	3	...	1	...	1	...	...	...	...	...	1	...	6
Chippewa	6	4	1	...	1	...	...	...	1	...	...	...	13
Chisago	5	2	2	...	...	...	3	...	1	...	2	...	15
Clay	4	4	...	2	...	...	1	...	...	...	...	...	11
Clearwater	1	...	...	...	...	...	...	...	...	...	...	...	1
Cook	.....	...	...	1	...	...	1	...	...	...	...	...	2
Cottonwood	9	1	2	2	1	..	.2	...	...	...	...	...	17
Crow Wing	5	2	3	...	...	1	3	2	1	...	...	...	17
Dakota	15	5	3	1	2	...	1	...	...	...	...	2	29
Dodge	3	...	3	...	...	...	2	...	...	...	1	...	9
Douglas	4	5	3	1	...	...	3	...	1	...	...	...	17
Faribault	8	1	2	...	2	2	1	...	...	1	2	2	21
Fillmore	8	1	4	1	1	...	5	...	1	1	1	...	23
Freeborn	7	2	2	...	2	5	1	...	...	...	...	...	19
Goodhue	20	8	2	...	1	4	3	1	2	...	...	3	44
Grant	2	1	3	1	1	...	1	...	...	...	1	...	10
Hennepin	1090	164	153	52	105	14	100	33	21	39	80	110	1961
Houston	5	...	4	1	...	...	2	...	2	...	2	...	16
Hubbard	1	...	1	...	...	...	1	...	...	...	...	...	3
Isanti	2	1	...	...	...	...	1	...	1	...	1	...	6
Itasca	7	2	...	1	1	...	1	...	2	...	1	...	15
Jackson	5	1	5	...	...	...	2	1	...	1	...	...	19
Kanabec	3	1	3	...	...	...	2	...	1	...	...	1	11
Kandiyohi	4	4	3	1	...	...	3	...	...	...	2	1	18
Kittson	5	1	1	...	...	...	...	...	...	...	...	...	7
Koochiching	3	...	3	1	1	...	1	...	...	...	...	...	9
Lac qui Parle	8	...	4	2	5	1	1	...	1	...	...	...	22
Lake	3	2	...	...	1	...	...	...	...	1	...	...	7
Le Sueur	10	5	5	...	2	2	3	...	1	1	...	...	29
Lincoln	2	1	1	...	...	...	1	...	...	...	...	...	5
Lyon	5	1	2	...	2	1	3	...	...	2	...	1	17
McLeod	19	3	6	2	4	1	2	...	...	...	...	1	38
Mahnomen	.....	...	...	...	...	...	1	...	...	...	...	...	1
Marshall	5	3	3	...	1	2	2	1	...	...	...	...	17
Martin	4	3	1	1	1	...	1	...	...	1	1	1	14
Meeker	16	3	2	...	1	...	1	...	...	...	...	1	24
Mille Lacs	2	4	...	...	1	...	...	...	...	...	...	...	7
Morrison	8	1	3	...	1	...	...	...	1	...	...	...	14
Mower	17	4	7	...	3	...	3	...	...	...	...	...	34
Murray	3	1	3	...	1	1	1	...	1	...	...	...	11
Nicollet	2	...	2	...	2	...	1	...	...	...	1	...	8
Nobles	4	2	4	1	1	...	...	...	...	1	...	...	13
Norman	6	...	4	...	...	1	1	...	...	1	1	...	14
Olmsted	13	7	2	...	2	1	3	...	...	1	2	31	62
Otter Tail	14	...	1	2	6	3	7	1	1	...	4	2	41
Pennington	4	...	2	...	2	...	...	...	...	...	...	...	8
Pine	12	...	1	...	...	...	...	...	...	1	2	...	16
Pipestone	5	1	3	...	...	...	1	...	...	...	...	...	10
Polk	7	1	1	1	...	2	1	...	1	1	1	2	18
Pope	8	4	2	...	...	3	4	...	2	...	2	...	25
Ramsey	365	48	103	12	39	8	34	11	5	15	37	50	727
Red Lake	.....	1	...	...	...	...	1	...	...	...	...	...	2
Redwood	12	3	6	2	...	1	1	...	1	...	2	...	28

TABLE VIII—*Continued*

	Science, Literature, and the Arts	Engineering	Agriculture	Law	Medical	Nurses	Dentistry	Mines	Pharmacy	Chemistry	Education	Graduate	Total
Renville	17	1	9	2	2	1	6	...	...	2	...	1	35
Rice	11	...	3	...	5	2	2	...	3	...	1	2	29
Rock	9	1	2	...	...	...	...	...	...	...	...	1	13
Roseau	.....	1	...	...	...	...	...	...	...	...	...	...	1
St. Louis	66	16	12	3	5	5	11	9	2	6	4	...	139
Scott	3	1	1	1	4	1	4	...	...	...	...	...	15
Sherburne	3	1	4	...	...	...	1	...	1	...	...	...	10
Sibley	3	4	5	...	1	...	2	...	...	...	...	...	15
Stearns	18	4	11	...	1	1	8	2	...	...	2	...	46
Steele	11	...	9	...	...	...	2	...	1	...	1	...	24
Stevens	1	2	1	...	...	...	...	...	...	...	1	...	5
Swift	7	3	1	1	...	...	3	1	...	...	...	1	17
Todd	9	2	2	1	2	...	1	...	...	...	1	1	19
Traverse	4	...	2	...	1	...	1	...	...	1	1	2	12
Wabasha	8	4	4	...	2	...	6	...	...	...	...	1	25
Wadena	3	...	3	1	1	...	1	...	...	1	...	...	10
Waseca	5	1	1	...	2	4	3	...	4	1	...	...	21
Washington	18	5	5	...	1	...	4	3	...	...	...	2	38
Watonwan	6	3	7	1	2	...	2	...	...	...	...	...	21
Wilkin	1	...	...	...	...	...	...	...	...	...	1	...	2
Winona	6	1	4	...	1	2	2	...	...	...	3	...	19
Wright	5	2	5	...	...	1	5	...	1	...	2	...	21
Yellow Medicine	9	2	2	...	2	...	2	...	...	...	...	...	17
Totals	2058	382	193	106	236	75	294	65	63	85	170	224	4251
STATES:													
Arkansas	.....	...	...	...	...	...	...	...	1	...	...	...	1
California	.....	...	...	...	2	...	...	...	...	...	...	2	4
Colorado	3	...	...	...	...	...	...	...	...	...	...	1	4
Florida	1	...	...	...	...	...	...	...	...	...	...	...	1
Idaho	1	...	...	...	1	1	...	...	...	...	...	1	4
Illinois	4	2	3	3	3	...	...	...	...	1	...	6	22
Indiana	1	3	2	...	...	...	...	...	...	...	1	4	11
Iowa	59	10	11	7	12	1	2	...	...	4	4	10	120
Kansas	1	1	...	...	...	...	...	...	...	...	...	...	2
Kentucky	.....	...	...	...	...	...	...	...	...	...	...	2	2
Maine	1	...	...	...	1	...	...	...	...	...	...	2	4
Maryland	.....	...	...	...	1	...	...	...	...	...	...	2	3
Massachusetts	1	1	...	...	...	...	1	...	...	...	...	4	7
Michigan	7	3	1	...	3	...	...	1	...	...	4	...	19
Mississippi	.....	...	...	...	...	...	...	...	...	...	...	1	1
Missouri	3	2	...	...	1	...	...	...	...	...	1	3	10
Montana	21	11	7	1	3	...	3	...	3	1	1	1	52
Nebraska	1	...	2	...	...	...	...	...	...	...	1	5	9
New Hampshire	.....	...	...	...	...	...	...	...	...	...	1	...	1
New Jersey	1	...	...	...	...	...	...	...	...	...	...	...	1
New York	2	...	3	...	4	...	...	...	...	1	...	5	15
North Dakota	51	8	4	9	9	4	17	3	2	2	1	...	110
Ohio	3	...	...	...	...	...	...	...	...	...	1	6	10
Oklahoma	1	...	...	...	...	...	...	...	...	...	...	...	1
Oregon	.....	...	...	...	...	...	...	...	...	...	...	2	2
Pennsylvania	.....	...	1	...	...	...	...	1	...	...	...	1	3
Rhode Island	.....	...	...	...	...	...	...	...	...	...	...	1	1
South Carolina	.....	...	...	...	...	...	...	...	...	...	...	5	5
South Dakota	62	21	9	2	6	1	5	...	2	...	4	5	117
Tennessee	.....	...	...	...	...	...	...	...	...	...	...	1	1
Texas	.....	...	...	...	...	...	...	...	...	...	...	2	2
Vermont	.....	...	...	...	...	...	...	...	...	...	1	...	1
Virginia	.....	...	...	...	...	...	...	...	...	...	...	2	2
Washington	4	...	2	1	7	...	1	...	...	...	...	3	18
West Virginia	.....	...	...	...	...	...	...	...	...	...	...	2	2
Wisconsin	29	10	9	4	3	3	11	...	3	2	9	12	95
Wyoming	.....	...	...	...	...	...	...	...	...	1	...	1	2

TABLE VIII—*Continued*

	Science, Literature, and the Arts	Engineering	Agriculture	Law	Medical	Nurses	Dentistry	Mines	Pharmacy	Chemistry	Education	Graduate	Total
U. S. Possessions:													
Alaska	1	...	...	...	1	...	...	...	...	...	...	...	2
Cuba	.....	1	...	...	...	...	...	...	...	...	...	2	3
Porto Rico	.....	...	...	...	...	...	...	...	...	...	...	1	1
Other Countries:													
Canada	2	1	3	...	...	1	2	...	...	...	...	...	9
China	3	2	1	...	...	...	...	4	...	1	...	1	12
Egypt	.....	...	...	1	...	...	...	...	...	...	...	...	1
Finland	1	...	...	...	...	...	...	...	...	...	...	...	1
Greece	.....	1	...	...	...	...	...	...	...	...	...	...	1
India	1	...	1	...	2	...	...	...	1	...	...	3	8
Japan	.....	...	...	...	...	...	1	...	...	...	...	...	1
Korea	.....	...	...	...	...	...	...	...	1	...	...	...	1
Mexico	.....	...	...	...	...	...	...	...	...	...	...	1	1
Norway	1	1	...	...	1	...	3	...	...	...	...	1	7
Russia	1	...	...	...	...	...	...	...	...	...	...	...	1
Siberia	.....	...	...	...	...	...	...	...	...	1	...	...	1
South Africa	.....	...	1	...	...	...	...	...	...	...	...	...	1
South America	.....	1	...	...	...	...	...	...	...	...	...	...	1
Sweden	.....	...	...	...	...	...	...	...	...	...	...	1	1
Syria	.....	...	...	...	...	1	...	...	...	...	...	...	1
Turkey	.....	...	...	...	...	...	...	...	1	...	...	...	1
Wales	.....	...	...	...	...	...	...	...	...	...	...	1	1
Grand total..	2325	461	553	134	296	87	340	74	77	99	199	327	4972

TABLE IX. CREDENTIAL STATUS OF FRESHMEN WHO APPLIED BUT DID NOT REGISTER

	Science, Literature, and the Arts	Engineering	Chemistry	Mines	Special Law	Dentistry	Nurses	Agriculture	Total
Low scholarship	117	11	3	1	....	27	....	42	201
Credentials O. K.	161	20	3	....	....	12	..7	94	297
Lacking credit	3	5	....	....	....	7	....	7	22
With condition	.....	10	....	....	....	....	....	....	10
Non-accredited school	.....	1	....	....	....	....	....	....	1
Total	281	47	6	1	....	46	7	143	531

A SURVEY OF THE COLLEGES, ETC.

College of Science, Literature, and the Arts.—(1) Because of war conditions the staff was decreased 10 per cent, including members on leave of absence; the departments were adjusted, however, to meet the enrollment: the staff in German was reduced, while that in Romance Languages was increased. (2) Many leaves of absence were granted to faculty members for war service. (3) Attendance dropped from 2,481 to 2,315. (4) A total of 36,655 student credit hours of teaching was done in the first semester. (5) Two departments, Romance Languages and History, showed a rapid growth; German, a steady decline. (6) Regulations were adopted establishing the Junior and Senior Colleges. (7) As steps to meet the demand for semi-professional training, a course in Interior Decorating was established, also a six-year combined course in Arts and Architecture. (8) The four-year course in Music hereafter will lead to the degree of Bachelor of Music. (9) Students to receive the teacher's certificate must hereafter register in the College of Education.

College of Engineering and Architecture.—(1) Decrease of 12.8 per cent in enrollment, with half the entire college in the freshman class. (2) 60 students joined the Enlisted Reserve Corps, remaining in school. (3) Entrance requirements modified. (4) Changes in degrees have been made, transferring the fifth year to the Graduate School with the degree of Master of Science. (5) A Mentor System was established for the freshmen; also a weekly assembly hour. (6) Vocational training for the army was carried on. (7) Need of more equipment for experimental laboratory and of a new electrical building emphasized.

Department of Agriculture.—(1) Dean A. F. Woods resigned; R. W. Thatcher succeeded him. (2) The administrative organization was clarified, with five resulting units. (3) Response was made to the war situation in many ways: e.g., concentration courses were offered in preparation for vocational service, and half-semester credit courses, to permit early completion of work; modified short courses were given and special short courses offered; 40 bulletins and articles were published by the staff; many of the Faculty on leave of absence. (4) Decrease

of 27.8 per cent in enrollment in the College. (5) Collegiate work has been combined in the College of Agriculture, Forestry, and Home Economics. (6) Unqualified degree of Bachelor of Science was approved. (7) Extension department published bulletins in large numbers; county agent work was carried on in 18 counties; food conservation courses offered to women, with 13 additional emergency instructors. An amazing amount of work was done in all lines. 18 demonstration farms. Director of the Division was made Federal Food Administrator for Minnesota. (8) Short course for traction engineers and the Rural Life Conference were not held. (9) Resolutions were adopted concerning the maintenance of research organizations for war purposes. (10) The Experiment Station had an especially active year.

Law School.—(1) Decrease of 40 per cent in enrollment due to the war. (2) Chief Justice Andrew A. Bruce of the Supreme Court of North Dakota added to the Faculty. (3) Need of new building emphasized. (4) *Minnesota Law Review* proved successful in its second year.

Medical School.—(1) Further development of full-time clinical professorships was made. (2) A "war Faculty," with 57 in service, and 27 with the Minnesota Base Hospital. (3) Slight increase in enrollment. (4) 248 students entered the Medical Enlisted Reserve Corps. (5) The degree of Bachelor of Medicine was adopted, for the period of the war, upon completion of four years. (6) Training was given to 300 members of the Naval Hospital Corps.

College of Dentistry.—(1) Course in first-aid dentistry was given to Naval Hospital Corpsmen. (2) Many enlistments of students and Faculty in the Dental Reserve Corps. (3) Steps were taken for the establishment of regular extension courses. (4) A graduate course under the direction of the Graduate School was formulated; future five-year course announced.

School of Mines.—(1) State Mining Experiment Station made 231 tests. (2) Tests were also made on Cuyuna manganiferous ores. (3) New building needed for the U. S. Bureau of Mines; Mr. Edmund Newton, formerly of the State Station, made first superintendent of the Lake Superior Station; specialized on manganese problems this year. (4) Work for the

Tax Commission continued. (5) Coöperative agreement with the U. S. Geological Survey still continues.

College of Pharmacy.—(1) Decrease of 32 per cent in enrollment. (2) Fourth-year subcourse in drug and food analysis was offered for the first time in several years. (3) Special lectures to all students were omitted. (4) 23,690 prescriptions were filled at the Free Dispensary. (5) Usual outside activities were carried on; offices held by Faculty members. (6) Digitalis was cultivated for the Medical Department of the Army.

School of Chemistry.—(1) Dean G. B. Frankforter, upon his request, was relieved of his duties as Dean; Mr. W. H. Bussey made Executive Secretary, the President of the University assuming responsibility for administration. (2) It was voted that the School continue as a separate college of the University. (3) Deanship declared vacant and Dr. Lauder W. Jones appointed Dean. (4) Graduate work seriously affected by the war. (5) Storeroom was enlarged and made into a general chemical storeroom for the University.

College of Education.—(1) Increase of 5 per cent in enrollment. (2) The fifth annual short course for superintendents and principals was held in March; also, a conference of teachers of secondary subjects. (3) Information of various sorts was sent to the Bureau of Coöperative Research. (4) The Handicraft Guild School of Normal Art was taken over and put in the College of Education. (5) College further recognized as a professional school. (7) The Smith-Hughes Bill provided for courses in training trade and industrial teachers, subject to the approval of the State Board of Education. (8) Work of the Committee on Appointments increased 196 per cent; amount of business justifies a permanent secretary.

Graduate School.—(1) Dean Ford absent on leave for work with the Committee on Public Information. (2) Decrease of 19 per cent in enrollment. (3) 46 Master's degrees and 11 Doctor's degrees conferred. (4) Publications have been in charge of an Editorial Board. (5) $7,945 appropriated for research.

Women of the University.—(1) Gertrude H. Beggs appointed Dean of Women. (2) 2,058 women students, 1,461 lived at home or with friends or relatives. (3) Women's Self-Government Association active with Red Cross Auxiliary. In May, the

fifth annual conference of the Middle Western Intercollegiate Association for Women's Self Government was held here with 19 institutions represented. (4) Advisory House Council formed. (5) Housing Bureau formed with Mrs. Ladd as Director. (6) Four coöperative cottages were maintained. (7) Pan-Hellenic entertainment netted $300 which was given to the Red Cross. (8) $950 loaned to students. (9) Eight scholarships were awarded. (10) Voted to admit three French women scholars.

Student Affairs.—(1) New position created with Mr. E. E. Nicholson as Dean of Student Affairs. (2) Student Council hampered by changing personnel. (3) Publication of magazines discontinued; *Daily* and *Gopher* issued. (4) Campus organizations submitted financial statements. (5) Decrease in social activities; formal functions were omitted. (6) Fraternities suffered because of the war. (7) Old regulations used in academic college, thus keeping scholarship up to normal level. (8) Closer coöperation between Administrative Board and colleges urged.

General Extension Division.—(1) Registration affected by the war. Loss of 28.7 per cent. Correspondence courses also affected. Persons needed to take charge of correspondence work. (2) Certificates in business conferred. (3) Short Course for Merchants was held, one week session for this year. (4) Two new short courses offered: Training for Volunteers in Social Service Work, and Short Course for Dentists. (5) Senate Committee on University Extension voted to retain lyceum work. Increase of 10 per cent in number of communities served. (6) The Municipal Reference Bureau in need of a municipal engineer. Increase of 20 per cent in inquiries, mostly from city and village officials; two from governors; from 26 places outside of Minnesota. Election law bulletin issued to villages. Coöperation with other departments of the University increasing. (7) Sending out of sets of lantern slides on the circuit plan was inaugurated. One film was circulated. (8) Plays and coaching service furnished by the Drama Service. (9) War demands met by courses in French, historical background of the war, map interpretation, etc. Patriotic speakers provided. Government publications provided.

Summer Session.—(1) Total enrollment 1,245 (including Agriculture), increase of 121 on main campus. (2) This year

for the first time $22,000 was appropriated for maintenance of the Summer Session. (3) A circular letter was sent to former students. More advertising needed. (4) Centralized control again in effect. Resolutions were adopted by the Regents. (5) Registration system improved. (6) Definite policy on exemption of fees is necessary. (7) Social activities received more emphasis. (8) No undergraduates were admitted to classes as auditors. (9) Continuation courses offered for the second time. (10) Subcollegiate students not admitted.

Department of Physical Education for Men.—(1) 3,285 physical examinations were made during the year. (2) Special lecture on sex hygiene was given to 1,411 students. (3) 1,243 disease census cards were filled out. (4) Personal hygiene courses given to 715 students. (5) 606 students enrolled in regular gymnasium classes. (6) Corrective gymnastics given as usual. (7) Intramural sports encouraged. (8) Honorary athletic fraternity well established. (9) Helped promote an intercollegiate basketball conference. (10) No intercollegiate gymnastics or wrestling on account of war conditions. (11) For the first time, 58 students participated in the Conference Mass Athletic Meet. (12) Need of a new gymnasium and more ground for intramural sports again emphasized.

Department of Physical Education for Women.—(1) Full examinations were given to 669 new students, 98 candidates for teachers' certificates, 374 reëxaminations; new students at all schools of agriculture and 49 new University High students. (2) 670 sophomores and juniors were interviewed. (3) 350 consultations held with members of physical training classes. (4) Interest in swimming increased; extension work for 90 students. (5) Great improvement in orthopedic group. (6) Recommendations again urged that requirement in Physical Education be extended to sophomore year, and that a professional training course leading to a degree be offered.

Committee on Physical Education and Intramural Sports.—(1) Under great stress owing to war conditions; football most seriously affected, basket-ball schedules kept up by fraternities, baseball and track events nearly normal, hockey subnormal. (2) Boxing installed as a new feature. (3) 1,487 men competed

in all forms of sports. (4) Women's Athletic Association encouraged tennis, hockey, basket-ball, baseball, swimming, walking. Field day was held in May.

Military Department.—(1) Second year of Reserve Officers' Training Corps with strength of 1,311. (2) Advanced course for juniors and seniors. (3) 127 men sent to R. O. T. C. Camp at Fort Sheridan. (4) Annual inspection resulted in very favorable report. (5) Drill was also given to students at the School of Agriculture.

Geological Survey.—(1) Survey allotted $16,500 for biennial period beginning August 1, 1917. (2) All resources devoted to investigation of mineral products essential for war purposes. (3) Following problems under investigation: detailed survey of (a) Mesabi iron range, (b) the Cuyuna range, and (c) manganiferous ore deposits, (d) investigation of moulding sands for iron and brass foundries, (e) survey of surface formations and agricultural conditions of Minnesota, (f) survey of the peat deposits of Minnesota. (4) Many inquiries and specimens received.

Botanical Survey.—(1) No official work done because of lack of appropriations. (2) Two members of the staff continued phyto-geographical and systematic studies of the vegetation of the state.

Zoological Museum.—(1) New exhibits added. (2) Gifts received. (3) A Museum bulletin contemplated. (4) 500 glass plate negatives, 450 slides, and 1,233 feet of movie film added. (5) Lectures on bird-life of Minnesota given by the Curator. (6) Attendance increasing. (7) Supported by voluntary contributions; maintenance fund from the state urgently needed.

University Library.—(1) Librarian gave much time to Red Cross in connection with the Northern Division. (2) Increased use of books over former years. (3) Use of 308 volumes secured in loans from other libraries. (4) Work of cataloging department hindered by illness of staff members. (5) Total of $28,993.04 expended on new books. Many orders not filled on account of the war. (6) Arrangements made for securing periodicals from Germany. (7) Number of publications from University press decreased. (8) Facilities for students in College of Education unsatisfactory. (9) Need of new library building more acute than ever.

Academic Fraternities.—(1) Great loss of men in fraternities due to enlistments. (2) Scholarship records show improvement in relative ranking of fraternities. (3) Scholarship standard for initiation of men upheld.

The General Alumni Association.—(1) Letters of suggestion regarding the University were secured from alumni members and published in the *Alumni Weekly*. (2) Association paid $738 for membership in American University Union in Europe. (3) New Committee on Buildings and Grounds gave valuable suggestions. (4) Association submitted statement of suggestions to the Board of Regents. (5) Effort made to arouse members to an active interest in election of men to State Legislature.

Registrar's Office.—(1) Engineering entrance requirements modified. (2) Personal statement regarding entrants required from principal or superintendent. (3) Additional accredited schools named. (4) Maximum credit for normal-school work raised. (5) University Examiner appointed.

CONCLUSION

In conclusion, it may not be inappropriate to remind the reader that this report has dealt with the first year of a new administration. Inevitably it has been necessary for me to study the University as a whole and to watch its actual operation without advocating serious changes or new policies. I am convinced that the University, during this very unusual year when the war has affected every enterprise and endeavor, has given ample evidence of its effectiveness and usefulness to the state. Anyone who reads not only these pages but the record set forth in the *Twentieth Biennial Report of the Board of Regents,* together with the reports of the other administrative officers in this volume, can not fail to be impressed by the magnitude and diversity of the activities of this University. Any growing institution is not perfect. Constant changes and readjustments are necessary, particularly in these times. But a survey of the year as a whole gives one new impressions of the importance of the work that is being done, and new confidence to attack the problems which must claim our attention in the years to come.

Very respectfully submitted,

M. L. BURTON, *President*

THE COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

To the President of the University:

SIR: I submit herewith my report for the year 1917-18.

Because of the great changes in university life and work brought about by the entrance of the United States into the great war, it seems well to give some account of the changes and tendencies which have been observed during the preceding years of peace. Detailed data are available for this purpose only for the past four years, and during all this time the work of the College has been influenced to some extent by the war in Europe.

A. FACULTY

Important changes in the Faculty were made on account of the conditions produced by the war. In anticipation of a reduction in the number of students, the number of the Faculty was decreased at the time of making appointments in June, 1917, as shown in the table below. The decrease was effected by dropping men of the rank of Instructor or Assistant on annual appointment. Adjustments were made also with reference to the expected enrollment of students in different departments. The staff of instruction in German, for example, was reduced while that in Romance Languages was increased.

The number of members of the Faculty in the various ranks for the past five years was as follows:

	1913-14	1914-15	1915-16	1916-17	1917-18
Professors	38	38	34½	37½	42
Associate Professors	4	7	6	6	8½
Assistant Professors	22	26	27	35	35
Professorial Lecturers	..	..	2	3	2
Instructors	45	47	49	58	43
Lecturers	..	..	..	..	2
Assistants and Teaching Fellows equivalent to full time	..	..	17	15	19
	109	118	135½	154½	151½
Absent on leave	5	8	3½	5½	17½
In residence	104	110	132	149	134

Resignations.—The following presented their resignations during the year: Herbert F. Bergman, Assistant Professor of Botany, to enter the U. S. Department of Agriculture; Sidney F. Pattison, Assistant Professor of Rhetoric, to accept a professorship in the University of Arizona; and Haldor Gislason, Assistant Professor of Public Speaking, because of ill health.

Termination of service.—By action of the Board of Regents the terms of service of William A. Schaper, Professor of Political Science, and of Charles E. Skinner, Assistant Professor of Rhetoric, were terminated.

Leaves of absence.—The number of members of the Faculty absent from the University on leave for various purposes was much larger than usual.

On sabbatical leave were: J. F. Ebersole, Assistant Professor of Economics, for practical experience in banking; and Frank M. Rarig, Assistant Professor of Public Speaking, for study at Harvard University.

On leave without pay: W. W. Cumberland, Assistant Professor of Economics, to join a commission of inquiry into economic conditions in Mexico; John H. Gray, Professor of Economics, in the service of the Interstate Commerce Commission; and Richard Burton, Professor of English, for the second semester, for lecturing and literary work.

The following men of professorial rank were on leave for participation in work connected with the war:

Commissioned officers in the United States Army: Hardin Craig, Professor of English; L. W. McKeehan, Associate Professor of Physics; Henry T. Moore, Assistant Professor of Psychology; George Norton Northrop, Assistant Professor of English; Edward H. Sirich, Assistant Professor of French; John T. Tate, Assistant Professor of Physics; Anthony L. Underhill, Assistant Professor of Mathematics; Robert M. Yerkes, Professor of Psychology.

For civilian service related to the war for a part or the whole of the year: George N. Bauer, Professor of Mathematics, for the thrift stamp campaign in Minnesota; E. Dana Durand, Professor of Economics, for the Meat Division of the U. S. Food Administration; Guy Stanton Ford, Professor of History, Director of the Division of Education of the Committee on Public Information; Frank F. Grout, Associate Professor of Geology, for work with the U. S. Shipping Board; W. E. Hotchkiss, Professor of Economics, for work with Shipbuilding Labor Adjustment Board; F. L. Leavenworth, Professor of Astronomy, to conduct School of Navigation at Duluth; Wallace Notestein, Professor of History, for work with the Committee on Public Information; A. A. Stomberg, Professor of Scandinavian Languages, for loyalty campaign among laborers in shipbuilding industry.

In addition to the above the following men in the rank of Instructor entered military service: Harry E. Atwood, Cecil C. Bean, Nelson F. Coburn, Elbridge Colby, Lynwood G. Downs, Sandford M. Salyer; and the following entered civilian service connected with the war: Paul E. Klopsteg.

Promotions.—The following were promoted from the rank of Instructor to that of Assistant Professor: William Anderson in Political Science, Royal N. Chapman in Animal Biology, W. S. Cooper in Botany, Paul Klopsteg in Physics, Mason W. Tyler in History; from the rank of Lecturer to that of Assistant Professor, Lester B. Shippee in History.

From the rank of Assistant Professor to that of Associate Professor: Roy G. Blakey in Economics, Frank M. Rarig in Public Speaking, and John T. Tate in Physics.

New appointments.—The following new appointments were made in the professorial ranks: George W. Dowrie, Professor of Economics; Elias J. Durand, Professor of Botany; N. S. B. Gras, Professor of Economic History; W. F. G. Swann, Professor of Physics; Ralph E. House, Associate Professor of Romance Languages; John D. Black, Assistant Professor of Economics.

B. Student Body

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

	1916-17			1917-18		
	Men	Women	Total	Men	Women	Total
Seniors	88	197	285	53	209	262
Juniors	181	236	417	128	315	443
Sophomores	365	354	719	246	311	557
Freshmen	520	419	939	471	468	939
Unclassed	38	83	121	36	78	114
	1,192	1,289	2,481	934	1,381	2,315
Registered in other colleges and taking work in this College equivalent to			658			441

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

	1913-14	1914-15	1915-16	1916-17	1917-18
Men	683	864	1,089	1,192	934
Women	909	954	1,260	1,289	1,381
Total	1,592	1,818	2,349	2,481	2,315

The percentage of men rose from 43 per cent in 1913-14 to 48 per cent in 1916-17, and fell again in 1917-18 to 43 per cent. This fall was probably due wholly to the influence of the war.

A study of the geographical distribution of the students registered in the College during the past five years shows no significant change in the relative number of students coming from the large cities, and from the state outside of the cities. The number of students coming from other states increased before the United States entered the war and again decreased in 1917-18.

STUDENTS COMING FROM OTHER STATES

	1913-14	1914-15	1915-16	1916-17	1917-18
Percentage of total	9	8.3	10	16	11

This probably indicates a normal tendency to draw more students from other states because of the improved standing and reputation of

this University, a tendency which was interrupted by the war. It was a noticeable fact that a larger number of students remained at home to attend their local institutions after the United States entered the war. This is illustrated by the unexpectedly large enrollment of juniors and seniors in 1917-18, shown in the above table.

The following table which shows the amount of teaching done by each department and the growth or decline of each department relative to that of the College as a whole, indicates also the interest of the student body in the various subjects of study.

STUDENT CREDIT HOURS OF TEACHING IN EACH DEPARTMENT FOR THE FIRST SEMESTER OF THE LAST FOUR YEARS

	1914-15	1915-16	1916-17	1917-18
Animal Biology	1,786	2,805	2,751	2,049
Astronomy	288	178	327	225
Botany	1,683	1,740	2,054	1,461
Comparative Philology	36	135	192	191
Economics	2,559	3,371	3,233	2,568
English	1,837	2,196	1,750	1,999
Geology and Mineralogy	1,319	1,157	1,966	1,770
German	3,840	3,714	3,486	2,196
Greek	78	112	129	86
History	2,235	2,415	3,157	3,604
Latin	436	432	402	354
Mathematics	2,231	2,543	2,876	2,126
Music	261	436	723	628
Philosophy }	1,710	1,974	2,247	585
Psychology }				1,642
Physics	1,317	1,596	1,735	1,501
Political Science	1,098	1,320	1,509	1,185
Rhetoric and Public Speaking	4,033	5,049	5,950	4,850
Romance Languages	2,528	3,564	4,697	5,834
Scandinavian	324	500	422	314
Sociology and Anthropology	1,053	1,283	1,246	413
Social and Civic work	....	....	....	1,074
Total	30,652	36,518	40,774	36,655

An examination of this table shows that there has been a remarkably uniform interest in the departments of study during the last four years. Only two departments, Romance Languages and History, have shown a growth much more rapid than that of the College as a whole. The growth in Romance Languages was due in part to reorganization, and in part to increased interest in Spanish for commercial reasons and in French because of the war. The growth in History was due in part to the requirement of History for freshmen in 1916-17, and in part to the influence of the war. The Departments of Geology and Mineralogy, Philosophy and Psychology, Sociology and Anthropology, and Social Service have shown a fairly steady growth more rapid than that of the College as a whole. German has suffered a steady decline since the beginning of the war in Europe, and much more rapid since the declaration of war by the United States.

To determine whether other changes shown in the table are significant would require a study of the requirements of other colleges whose students receive instruction in academic subjects in this College.

C. Curriculum

The Faculty, convinced that the differences which exist between the elementary and foundational work of the first two years and the advanced and intensive work of the third and fourth years of the curriculum should be recognized and further emphasized, has adopted the following regulations establishing the Junior and Senior Colleges:

The Junior and Senior Colleges

1. The College distinguishes between the Junior College, consisting of the first two years, and the Senior College, consisting of the third and fourth years.

2. All courses which are open to freshmen or sophomores are designated Junior College courses. All courses which are open only to juniors, seniors, or graduates are designated Senior College courses.

3. The courses of the Senior College may be taken only by students who have satisfied the requirements for promotion from the Junior to the Senior College.

4. Beginning with the class which entered in the fall of 1917, there shall be required for promotion to the Senior College the completion of fifty-six credits and fifty-six honor points including the studies prescribed for freshmen and sophomores.

5. Senior College courses shall have as prerequisites courses amounting to six credits when the department is not open to freshmen, or to nine credits when the department itself, or the department which offers the prerequisite courses, is open to freshmen. Senior College courses are starred courses.

6. In foreign language departments sophomore students who have had five years of the language, including one year in the College, are allowed to elect those Senior College courses for which they have had the prerequisites.

7. Students registered in combined courses shall secure thirty credits and thirty honor points per year of work required in this College before being recommended for entrance to the work of the professional school. In order that such students may receive the Bachelor's degree after completion of the required professional work the Faculty of the professional school shall certify that they have maintained an equivalent standing in the work of the professional school which is counted toward the degree given by this College.

8. Any student who fails to complete the Junior or Senior College requirements within the normal period will, in order to complete the work, be required to continue in that college for one or more University sessions. During this period, such students will be required to secure an average of one honor point for every credit hour of work carried.

New Courses and Departments

Further steps were taken to meet the demand for semi-professional training.

The Department of Architecture of the College of Engineering and Architecture was recognized as a department in this College. Two new curricula were announced in which architecture constitutes the specialized work: a four-year Course in Interior Decoration for the training of young women for drafting, domestic architecture, and the position of architect's assistant; and a six-year combined Course in Arts and Architecture intended to give men a broader and more fundamental training in architecture as an art than is possible in the present technical course in architecture.

Degrees and Certificates

It was voted that the degree in the four-year course in Music hereafter should be Bachelor of Music.

It was agreed that beginning with the year 1919-20 students entering the junior class who expect to receive the teacher's certificate from the University of Minnesota at the end of their four-year course, must register in the College of Education. Students who can spend a fifth year at the University in order to meet the state requirements for the teacher's certificate, may of course take their Bachelor's degree from this college.

Respectfully submitted,

J. B. JOHNSTON, *Dean*

THE COLLEGE OF ENGINEERING AND ARCHITECTURE

To the President of the University:

SIR: I hereby submit my report for the College of Engineering and Architecture for the college year 1917-18.

Changes during the year.—The present year has been so abnormal owing to war conditions that no comparisons can be made with former years. At the opening of college there were 8 post-seniors, 38 seniors, 61 juniors, 128 sophomores, and 226 freshmen. The above figures show that half of the entire College was in the freshman class. The loss in the Faculty, due to enlistment in war service or in allied service for the Government, was about in ratio with the loss of students. While the students and Faculty remained in about the same proportion, many adjustments were necessary in the distribution of the teaching force. In general the freshman work was very heavy, and the upper-class work very light. This made it necessary for many of the Faculty ordinarily teaching advanced courses to take up the teaching of freshmen. This the Faculty, realizing the extraordinary conditions, did very cheerfully, and their broad-minded attitude and their coöperation in this matter are very much to be commended. During the year many students enlisted in both Army and Navy, so that by the end of the year there were approximately 3 post-seniors, 20 seniors, 54 juniors, 88 sophomores, and 136 freshmen.

Enlisted Reserve Corps.—The lack of engineers in this country and the great demand for engineers by the Government brought about the establishment of the Engineer Enlisted Reserve Corps for both Army and Navy. This was done in order to allow the engineers to remain in college, subject to the call of the Government. Under date of December 15, 1917, provision was made for the enlistment of engineering students who were over twenty-one years of age in the Engineer Enlisted Reserve Corps, and students so enlisted were allowed to remain in college to complete their courses. Later on a Naval Engineer Reserve Corps was established for men under twenty-one years of age. Engineers enlisted in this Corps were permitted to stay in college, but were required to spend their summer in a naval training station on active duty. About 60 joined these Corps and returned to college this fall.

Changes in curriculum.—There is a tendency in this College to have special courses in each subject for the students of the different engineering departments. The fundamental principles, however, remain the same for all departments, and there is no very well-defined reason for so many divisions of the same course. During the year an effort has been made and will continue to be made to eliminate the unnecessary repetition of courses in slightly changed form for different departments of engineering, as, for example, a special course in Experimental Engineering is

given for Civil Engineers, Electrical Engineers, Mechanical Engineers, and for Mining Engineers, when one broad course could be made to serve the purposes of all.

Changes in entrance requirements.—Entrance requirements for the Engineering College have always differed from those of the College of Science, Literature, and the Arts, particularly in the requirement of mathematics. Students lacking solid geometry or advanced algebra could not enter the Engineering College, but they could enter the College of Science, Literature, and the Arts. Quite a number of students therefore entered the College of Science, Literature, and the Arts and later transferred to Engineering, and many students not knowing that such a plan was in operation went to other institutions. The entrance requirements of the College of Engineering and Architecture have now been made practically the same as for the College of Science, Literature, and the Arts, except a minor difference in the English and Modern Language requirement.

Changes in degrees.—This College has heretofore at the end of the five-year course given degrees in Civil, Mechanical, and Electrical Engineering, and this fifth year, called the post-senior year, has been administered in the College of Engineering. This is contrary to the practice of most institutions and contrary to the recommendation of the Society for the Promotion of Engineering Education. These degrees have now been changed and the work of the post-senior year transferred to the Graduate School. Students now completing the first four years will receive the degree of Bachelor of Science in Civil, Mechanical, and Electrical Engineering. The postgraduate year will now go to the Graduate School, and the students will receive the Master of Science degree in the various Departments of Engineering. The question of the higher engineering degrees has been referred to the Graduate School and has not yet been settled.

Mentor and assembly system.—Early in the year a Mentor System was established for the freshman class. Twenty freshmen were assigned to a member of the Faculty for whom he acted as mentor. These mentors were to act in relation to the student as elder brothers, and the freshmen were to be free to go to them with all their problems, whether academic or not. All monthly reports of the students' standings were sent to the mentors and the students could discuss these reports and obtain the advice and counsel of their mentors. Mentors were asked to correspond with the parents of the students, and letters from the parents were referred to the mentors. This system was carried out throughout the year, and its success has been such that we deem it advisable to continue it.

At the same time an assembly system was carried on, all freshmen coming together once a week for one hour. These meetings had as their presiding officer the president of the freshman class. Freshman business was transacted for part of the hour and the remainder of the time was taken up for addresses. Addresses were made by the President of the

University, the President of the Board of Regents, the Deans of the various colleges, and other men of affairs. The idea has been to inform the student in regard to departments and activities of the University, so that early in his college course he might have a comprehensive idea of the University. This also brought him in contact with members of the Faculty and business men, so that he came in touch with men accustomed to the larger point of view. The success of the assembly system has been such that I believe it is desirable to continue it.

Vocational training.—In March, contracts were made with the United States Government for the training of drafted men. The actual training of these men commenced in this College on June 15 when 350 men were received. The training period was for eight weeks for 250 auto mechanics, 50 radio operators, 25 machinists, and 25 blacksmiths. The work was partially supervised by our regular Faculty, but it was necessary to employ a number of men of practical experience to supplement the work of the Faculty. This vocational work has now been thoroly organized and is being effectively carried out. In July a new contract was made continuing this contract for 400 men from August 15 to October 15, and under this contract there are to be trained 250 auto mechanics, 100 telephone electricians, and 50 radio operators.

Research work.—Owing to war conditions and the loss of many members of the Faculty, the amount of research work done during the year was of necessity limited. Special investigations have been carried on in connection with the investigations of the flat concrete slab. Work has been started on special equipment designed to investigate the transmission of heat through various forms of building surfaces. Investigations have been carried on in hydraulics, especially in connection with the action of waves formed by water passing over dams. The research laboratory needs much more extensive equipment, particularly in steam and gas engine work. Most of the present equipment is obsolete and would be of more service in a museum than in an experimental laboratory. If the present experimental laboratory is to be of much service to the state of Minnesota it must have more adequate and modern equipment.

Electrical Engineering Building.—The Electrical Engineering Department is very much overcrowded. It is impossible to do effective work or to handle properly the apparatus owned by the Department in its present building. Owing to lack of space in the present building, it is impossible to set machinery permanently, and the result is great confusion and loss of time. As soon as possible provision must be made for the more adequate housing of this Department.

Scholarships.—A scholarship has been given to this College by the International Pulp and Paper Company for the encouragement of hydraulic research. This scholarship provides sufficient funds to maintain a student in college. A certain portion of this student's time must be given to hydraulic research. We are at present negotiating for other similar scholarships, and I believe it is wise to encourage gifts of this kind which serve to stimulate the interest in research work.

Statistics.—In Tables I and II, forming part of this report, statistics are submitted of the registration in the College for the years 1873 to 1918.

TABLE I. REGISTRATION IN THE COLLEGE, 1873-1918

Year	No.	Year	No.	Year	No.
1873-74	4	1888-89	25	1903-04	395
1874-75	7	1889-90	33	1904-05	399
1875-76	4	1890-91	74	1905-06	412
1876-77	3	1891-92	78	1906-07	458
1877-78	5	1892-93	154	1907-08	473
1878-79	3	1893-94	147	1908-09	467
1879-80	2	1894-95	149	1909-10	407
1880-81	2	1895-96	201	1910-11	420
1881-82	9	1896-97	186	1911-12	378
1882-83	15	1897-98*	129	1912-13	393
1883-84	8	1898-99	143	1913-14	438
1884-85	7	1899-1900	195	1914-15	475
1885-86	None	1900-01	246	1915-16	526
1886-87	15	1901-02	312	1916-17	529
1887-88	28	1902-03	371	1917-18	461
Total					9,186

* Prior to 1897-98 students in Mining and Chemistry are included.

TABLE II. GEOGRAPHICAL DISTRIBUTION OF STUDENTS

DISTRIBUTION BY COUNTIES IN MINNESOTA

Anoka	2	Jackson	1	Ramsey	48
Becker	3	Kanabec	1	Red Lake	1
Beltrami	3	Kandiyohi	4	Redwood	3
Blue Earth	6	Kittson	1	Renville	1
Brown	3	Lake	2	Rock	1
Carver	3	Le Sueur	5	Roseau	1
Chippewa	4	Lincoln	1	St. Louis	16
Chisago	2	Lyon	1	Scott	1
Clay	4	McLeod	3	Sherburne	1
Cottonwood	1	Marshall	3	Sibley	4
Crow Wing	2	Martin	3	Stearns	4
Dakota	5	Meeker	3	Stevens	2
Douglas	5	Mille Lacs	4	Swift	3
Faribault	1	Morrison	1	Todd	2
Fillmore	1	Mower	4	Wabasha	4
Freeborn	2	Murray	1	Waseca	1
Goodhue	8	Noble	2	Washington	5
Grant	1	Olmsted	7	Watonwan	3
Hennepin	164	Pipestone	1	Winona	1
Isanti	1	Polk	1	Wright	2
Itasca	2	Pope	4	Yellow Medicine	2
Total					382

DISTRIBUTION IN OTHER STATES

Illinois	2	Massachusetts	1	North Dakota	8
Indiana	3	Michigan	3	South Dakota	21
Iowa	10	Missouri	2	Wisconsin	10
Kansas	1	Montana	11		
Total					72

DISTRIBUTION OUTSIDE OF UNITED STATES

Canada	1	Cuba	1	Norway	1
China	2	Greece	1	South America	1
Total					7

Respectfully submitted,

JOHN R. ALLEN, *Dean*

THE DEPARTMENT OF AGRICULTURE

To the President of the University:

SIR: I submit herewith the report of the work of the Department of Agriculture for the year ending July 31, 1918.

ORGANIZATION

The resignation of former Dean and Director A. F. Woods at the close of the preceding academic year, and the appointment at the beginning of this fiscal year of myself as Dean of the Department and Director of the Experiment Station, and of Dr. E. M. Freeman as Dean of the College, made it seem both necessary and desirable that the administrative organization of the Department which had been developing by regular steps under the administration of Dean Woods be definitely and clearly set forth. Hence the first administrative problem of the year was the crystallization into definite form of the administrative organization of the Department. It seemed that the first principle to be followed was that administrative organization of the work of an educational institution should be as simple as possible, in order to promote a maximum efficiency in teaching and research work with a minimum of routine administrative duties. Furthermore, it appeared that the organization should be such as to recognize that the work of the Department includes much more than instruction of students on the campus; that, in fact, it actually includes nearly all those activities which are carried on by the "land grant colleges" in those states where these colleges are established as separate institutions instead of as a part of the state university; and that it should provide for efficient administration of collegiate and secondary instruction, of agricultural extension work, and of the research, demonstrational, and regulatory work of the experiment station. Accordingly, after careful consideration of the whole situation, it was decided to group all instruction of collegiate grade into a single college, to be known as the College of Agriculture, Forestry, and Home Economics; all extension work into two units known respectively as Short Courses and Agricultural Extension Work; all experiment station work into a fourth unit which includes the work at the central station and at all the substations; and the secondary school work as a fifth unit, the work at each of the three schools being under the supervision of a superintendent or principal. These fundamental principles having been approved, they were promptly put into operation in the following.

Administrative Organization of the Department

R. W. Thatcher, Dean of the Department and Director of the Experiment Stations

A. CURRICULA OF INSTRUCTION

I. Graduate Work
E. M. Freeman, Chairman of Group Committee

II. The College of Agriculture, Forestry, and Home Economics
E. M. Freeman, Dean

III. The Schools of Agriculture
D. D. Mayne, Principal of the Central School at University Farm
C. G. Selvig, Superintendent of the Northwest School at Crookston
P. E. Miller, Superintendent of the West Central School at Morris

B. SPECIALIZED INSTRUCTION

IV. Short Courses
A. V. Storm, Director

V. Agricultural Extension Work
A. D. Wilson, Director

C. EXPERIMENT STATION WORK

VI. Investigational and Demonstrational Work
Andrew Boss, Vice-Director in Charge
Andrew Boss, Vice-Director of the Central Station, at University Farm
C. G. Selvig, Superintendent of the Northwest Substation, at Crookston
P. E. Miller, Superintendent of the West Central Substation, at Morris
Otto I. Bergh, Superintendent of the North Central Substation, at Grand Rapids
M. J. Thompson, Superintendent of the Northeast Substation and Demonstration Farm, at Duluth
Andrew Boss, in Charge of the Southeast Substation and Demonstration Farm, at Waseca
Chas. Haralson, Superintendent of the Fruit-Breeding Farm, at Excelsior
W. H. Kenety, Superintendent of the Forestry Experiment Station, at Cloquet

VII. Regulatory and Inspection Work
R. W. Thatcher, Director in Charge

Subject-matter groups.—The administrative organization above described provides for administrative supervision of the different types of work of the Department. But for purposes of budgeting of expense, correlation and administration of the teaching, research, etc., in the several fields of subject-matter represented in this Department, the teachers and research workers are organized into "divisions," which correspond

to the "departments" of instruction in other colleges or schools of the University. There are, at present, seventeen such divisions. In a number of cases, several divisions deal with closely allied fields of subject matter, and it is desirable that their instructional and research work be so coördinated that it may be harmonious, consistent, and free from duplication. A step in this direction was taken a year ago when the Divisions of Animal Husbandry, Animal Nutrition, Dairying, Poultry Husbandry, and Veterinary Science were organized into the Animal Industry Group, with Dr. C. W. Gay as its chairman. This organization has worked so well that plans are now being perfected for organizing all of the subject-matter divisions into similar groups, each with its chairman and with provision for frequent conferences concerning methods and organization of the teaching, research, and extension work in the field of industry or vocation represented by the group. It is believed that all present or prospective work of the Department can be logically arranged in the following groups: Agricultural Economics, Plant Industry, Animal Industry, Agricultural Engineering, and Home Economics.

Organization of the divisions.—In previous years there has been a marked tendency toward the organization of the several divisions into smaller administrative units known as "sections," with some member of the staff of professorial rank designated as "in charge" of each section, and with some one of these section heads either elected or appointed as chairman of the division. This experiment in democratic organization resulted in a large increase in the number of members of the staff who had administrative duties to perform, with consequent serious interruption of their teaching or research duties, and in an undesirable decentralization of administrative responsibility for the policies and business affairs of the divisions. Hence, it was determined, early in the year, to abandon this plan of organization of the divisions, to regard the sections simply as convenient units of teaching or research forces which may be changed from time to time to suit changing conditions without disturbing the formal organization of the division, and to centralize administrative responsibility for each division in a single person who should have a permanent appointment as chief of the division. During the year, this organization was put into effect in all the divisions except that of Horticulture, for which a permanent chief has not yet been selected.

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

Resignations.—E. Dana Durand, Professor of Agricultural Economics; H. H. Kildee, Professor of Dairying; Josephine T. Berry, Professor of Nutrition (on leave of absence during the year, for service with the Federal Board of Vocational Education); W. H. Bender, Associate Professor of Agricultural Education; C. W. Howard, Associate Professor of Entomology; P. J. Olson, Assistant Professor of Agronomy; A. H. Benton, Assistant Professor of Farm Management; C. C. Palmer, Assistant Professor of Veterinary Science; W. L. Oswald, Assistant Professor of Agricultural Botany.

Leaves of absence granted during the year.—Professor J. T. Stewart, for military service; Professors Francis Jager and C. P. Bull, for six months, beginning April 1, 1918, for Red Cross work in Serbia; Associate Professor E. C. Stakman, for six months beginning March 15, 1918, for war emergency work in the control of crop diseases with the U. S. Department of Agriculture; Associate Professor C. H. Bailey, for five-sixths time beginning January 1, 1918, for war emergency work for prevention of grain dust explosions, with the U. S. Department of Agriculture; Assistant Professor Grace Williams, for graduate study.

Retirement.—At the close of the year, Professor T. L. Haecker, who had served for many years as head of the dairy and animal husbandry work of the Department retired from active service, and was given the title of Professor Emeritus of Dairy Husbandry.

Appointments.—

William Albert Riley, Professor of Entomology and Parasitology

B.S., 1897, DePauw University; Ph.D., 1903, Cornell University; Assistant in Entomology, DePauw University, 1896-98; Instructor, Assistant Professor, and Professor of Entomology, Cornell University, 1899-1918.

Irving Deloss Charlton, Assistant Professor of Farm Mechanics (resigned later in the year to enter military service).

Arthur Garfield Tyler, Assistant Professor of Farm Buildings

In commercial drafting laboratory 1908-18.

Alice Leora Edwards, Assistant Professor of Nutrition

B.S., 1906, Oregon Agricultural College; B.S., 1916, University of California; M.A., 1917, Columbia University.

Ethel Ronzone, Assistant Professor of Textiles and Clothing (resigned at end of year).

Percy Bonsfield Barker, Assistant Professor of Agricultural Education

B.A., 1908, M.A., 1912, University of Nebraska; Assistant, Instructor, Assistant Professor, and Professor of Agronomy, University of Nebraska, 1906-15; Extension Specialist in Farm Crops, University of Missouri, 1915-16; Head of Department of Agronomy, University of Arkansas, 1916-18.

Bueford Monroe Gile, Assistant Professor of Agricultural Education

A.B. in Agri., 1913, University of Wisconsin; Teacher in public schools, 1910-18.

Albert Martin Field, Assistant Professor of Agricultural Education

B.S. in Agri., 1916, University of Wisconsin; M.S., University of Wisconsin, 1917; Instructor in Agriculture, University of Wisconsin, 1916-18.

Promotions.—William P. Kirkwood from Associate Professor to Professor of Rural Journalism; Elvin C. Stakman from Associate Professor to Professor of Plant Pathology; Joseph S. Montgomery and Thomas G. Paterson from Assistant Professors to Associate Professors of Animal Husbandry; Frank W. Peck from Assistant Professor to Associate Professor of Farm Management; Mildred Weigley from Assistant Professor to Associate Professor and later to Professor of Home Economics; Guy R. Bisby from Instructor to Assistant Professor of

Plant Pathology; Clayton O. Rost from Instructor to Assistant Professor of Soils; Hall B. White from Instructor to Assistant Professor of Farm Buildings.

SPECIAL WAR-TIME ACTIVITIES

On the entrance of the United States into the war in April, 1917, the all-important problem confronting the Department of Agriculture was the proper re-direction of its activities and resources to insure their utilization to the full in helping to win the war. The Executive Committee of the Department met on April 14, and provided for the appointment of a subcommittee to confer with the Chairman of the State Committee on Increased Food Production and Conservation with reference to the plan of procedure which the Department should adopt in cooperating in the mobilization of the agricultural resources of the state. This subcommittee reported on April 16, and acting on its recommendation, the Executive Committee provided for the appointment of special war subcommittees on crops, livestock, publicity, labor, finance, home economy, forestry, and experiment station. These committees were instructed to coöperate with the corresponding divisions of the State Committee on Food Production and Conservation and were authorized to call to their assistance any of the members of the staff of the Department should they find it expedient to do so. It was definitely understood that funds and assistants released by decreased student attendance would be utilized for extension and publicity work; that less important station projects would be temporarily discontinued to permit special emphasis on those having direct bearing on the immediate problems of the war; and that every possible effort would be made to assist in the national and state program for agricultural mobilization.

The specific effect of the war on the Department activities, however, has been difficult, if not impossible to measure. With a few minor exceptions, agricultural education does not lend itself to modification enabling it to prepare students for the various branches of military service. Clearly, also, the greatest value of the Experiment Station and the Agricultural Extension is to be found in performing most efficiently their normal functions. Nevertheless, difficult as it is to differentiate clearly between purely war measures and normal activities of the Department, hardly a course offered to students of either School, College, or Short Courses, not a project of either Experiment Station or Agricultural Extension has been free from the influence of the war.

A special report concerning the more important war-time activities of the Department has been prepared; but it is far too voluminous to be included here. It shows in detail (a) the effect of the war upon student enrollment and attendance in the College and School of Agriculture; (b) the mode and effect of assignment of students to agricultural service; (c) the conduct of special concentration courses in preparation for vocational service, and half-semester credit courses to permit early completion of work; (d) the effect of the war upon the subject-matter taught

in college courses; (e) the increased demand for teachers of agriculture; (f) modifications in the type of short course instruction; (g) results of special war-time investigational projects in the Experiment Station; (h) the almost complete revolution in methods and material used in agricultural extension work, under the influence of the war-time need for increased food production, and with the stimulus of special emergency appropriations by the Federal Government for this work; the titles of more than forty bulletins and special journal articles by members of the staff dealing with war-time problems; and (i) a list of war-time positions, and of committee appointments for special war service work, of the members of the staff.

Specific reference to the effect of some of these activities upon the work of the different units of the Department is made in subsequent sections of this report.

REGISTRATION OF STUDENTS

The following table compares the registration in the Department of Agriculture for the year 1917-18 with that for 1916-17.

	Men		Women		Total	
	1917-18	1916-17	1917-18	1916-17	1917-18	1916-17
I. College of Agriculture						
Agriculture						
Seniors	44	82	...	...	44	82
Juniors	51	85	1	...	52	85
Sophomores	64	96	...	1	64	97
Freshmen	73	104	1	1	78	105
Unclassed	3	13	...	...	3	13
Total	239	380	2	2	241	382
Home Economics						
Seniors	...	...	74	73	74	73
Juniors	...	...	68	91	68	91
Sophomores	...	...	66	76	66	76
Freshmen	...	...	67	69	67	69
Unclassed	...	...	9	16	9	16
Total	...	...	284	325	284	325
Forestry						
Seniors	4	3	...	...	4	3
Juniors	6	10	...	...	6	10
Sophomores	7	11	...	...	7	11
Freshmen	11	15	...	...	11	15
Unclassed	...	...	...	...	...	...
Total	28	39	...	...	28	39
Total for college year	267	419	286	327	553	746
Summer Session	23	134	87	67	110	201
Extension Field Assistants	17	...	...	...	17	...
Total collegiate registration	307	553	373	394	680	947
Duplicates	12	38	38	36	50	74
Net total	295	515	335	358	630	873

	Men		Women		Total	
	1917-18	1916-17	1917-18	1916-17	1917-18	1916-17
II. School of Agriculture						
Three-Year Course						
Seniors	85	154	38	60	123	214
Juniors	136	121	48	52	184	173
Freshmen	201	198	64	49	265	236
Unclassed	33	63	7	3	40	66
Total	455	526	157	163	612	689
Normal Course	1	...	12	12	13	12
Total School Course...	456	526	169	175	625	701
III. Short Courses						
Dairy Short Course						
Creamery Butter Makers..	21	77	...	...	21	77
Ice Cream Makers.....	8	27	...	...	8	27
Short Course	26	...	...	...	26	...
Total	55	104	...	...	55	104
Duplicates	5	18	...	...	5	18
Net total	50	86	...	...	50	86
Farmers' and Home Makers' Week	1039	1324	259	307	1298	1631
Editors' Week	53	58	2	2	55	60
Elevators Week	20	...	3	...	23	...
Boys' and Girls' Week.....	188	666	91	314	279	980
Traction Engineering	46	26	...	...	46	26
Mess Sergeants	12	...	...	...	12	...
Teachers' Training	21	135	757	1007	778	1142
Consolidated Sch. Prin.....	73	...	15	...	88	...
Rural Life Conference.....	17	136	6	34	23	170
Extension Gymnasium	45	25	32	...	77	25
Total of Short Courses..	1568	2474	1165	1664	2734	4138
Duplicates	11	42	6	7	17	49
Net total.....	1557	2432	1159	1657	2717	4089
Total registration at University Farm	2332	3554	1707	2233	4039	5787
Duplicates	102	223	72	76	174	299
Net total.....	2230	3331	1635	2157	3865	5488
IV. Northwest School of Agriculture						
School Course						
Advanced class	5	5	1	...	6	5
Normal Training	...	...	7	7	7	7
Seniors	18	19	5	8	23	27
Juniors	31	20	11	5	42	25
Freshmen	94	103	24	33	118	136
Junior Short Course.....	55	51	33	9	88	60
Teachers' Training	6	14	134	175	140	189
Total Short Courses....	61	65	167	184	228	249
Total registration Northwest School	209	212	215	237	424	449
Duplicates	...	...	2	3	2	3
Net total.....	209	212	213	234	422	446

	Men		Women		Total	
	1917-18	1916-17	1917-18	1916-17	1917-18	1916-17
V. West Central School of Agriculture						
School Course						
Fourth year	3	2	1	1	4	3
Seniors	8	15	9	14	17	29
Juniors	25	12	8	11	33	23
Freshmen	86	59	32	23	118	82
Total	122	88	50	49	172	137
Junior Short Course	61	15	39	17	100	32
Teachers' Training School	4	8	97	139	101	147
Farmers' Week	...	53	...	...	...	53
Farmers' Tractor Course	87	...	...	...	87	...
Mothers' Week	...	...	...	36	...	36
Total registered at West Central School	274	164	186	241	460	405
Total registration of Department of Agriculture	2815	3930	2108	2711	4923	6641
Duplicates	102	223	74	80	176	303
Net total registration	2713	3707	2034	2631	4747	6338

THE COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS

Administration.—The collegiate work of the Department of Agriculture, formerly given in the College of Forestry and the College of Agriculture, has been reorganized as the College of Agriculture, Forestry, and Home Economics.

A definite relationship has been established between the Divisions of Agricultural Economics of the Department of Agriculture and the Department of Economics of the College of Science, Literature, and the Arts. So far as collegiate work is concerned, instructors in Agricultural Economics courses constitute a section of Agricultural Economics of the Department of Economics, and are members of the Division of Agricultural Economics of the Department of Agriculture.

A rearrangement of the relations of the Division of Agricultural Education has been made in conformity with the University policy of bringing all teacher-training courses into the College of Education.

Entrance requirements.—The requirements for admission have remained practically unchanged throughout the year. It was voted by the College to indorse the action of the Senate relative to the abandonment of the form letter which for a number of years has been sent to parents of applicants who presented a low scholarship record for admission.

A special agreement also was made with reference to the admission of graduates of the School of Agriculture, whereby graduates of the School of Agriculture who have completed the two summers of supervised farm work offered in the school course, one additional school year (to include English, algebra, and geometry) and one additional summer's work, or the equivalent thereof, will be admitted to the College of Agriculture, Forestry, and Home Economics.

Curriculum—general.—The change in form of the diploma approved by the Senate and Board of Regents made it necessary to drop from the diploma the reference to college and major line of work, which had previously been included, and to include in the form of the degree any reference which might be desired to the course from which the student graduates. Action was taken approving the unqualified degree of Bachelor of Science.

Steps were taken during the year to provide Saturday classes for teachers and others who could not attend the regularly scheduled courses. As a result of a preliminary letter sent to all the teachers of the Twin Cities and vicinity, it appeared that there was insufficient demand to warrant starting the work at this time. It is probable, however, that it will be necessary to offer such classes in both Agriculture and Home Economics in the near future.

A series of courses in General Agriculture was introduced to be given under the direction of the Division of Agricultural Education.

The procedure for the selection of a line of specialization has been modified. Heretofore each sophomore toward the close of the year has designated the special curriculum which he plans to follow during the remainder of the course. Increasing differentiation in the studies of the sophomore year, however, has made an earlier selection desirable. All freshman students are now called together by the Dean near the close of the year, and the various curricula and lines of specialization with the fields of work to which each lead, are explained in detail. Each student is encouraged to confer with the Dean with reference to his or her own particular purpose in undertaking a college course. Provision has been made for the modification of the existing lines of specialization to fit the needs of individual students. The student is required to obtain the Dean's approval of his selection, in addition to the approval of the head of the division with which he majors. It is believed that this personal contact can not fail to be of considerable value to the student both in his selection of a vocation and of a suitable course of study adjusted specifically to meet the needs of the chosen vocation.

The required work in Rhetoric has been modified by the substitution of a semester's course in Public Speaking for the second semester's work in Argumentation. Public Speaking is now required of all students in the College.

Agriculture.—The freshman year for all students has been modified by introducing a required course in Farm Motors and reducing the Mathematics requirement. Under the new plan the required work in Mathematics is limited to a single course in Applied Mathematics prescribed for those who enter the College without a high-school credit in higher algebra.

The required amount of Chemistry has been increased twenty-five per cent by the substitution of a full year course in Agricultural Biochemistry for all students in the sophomore year.

The change in entrance requirements in 1916-17, whereby farm experience was no longer required for admission, necessitated the introduction during the past year of a no-credit course in Farm Practice for those who enter with little or no actual farm experience.

The work of the Animal Industry group has been readjusted to provide for a number of advanced courses open to graduate students.

Home Economics.—New lines of specialization have been provided for students desiring to prepare themselves as (a) high-school teachers of the foods-management group of subjects, (b) dietitians, and (c) institutional managers.

Work in home practice, under supervision, has been added as a requirement for graduation. These courses carry no college credit, but are required of those who have had insufficient home experience in sewing or cooking.

The work of the freshman year has been so modified as to permit every student in the class to select at least one strictly Home Economics course each semester. This will undoubtedly increase the popularity of the Home Economics courses of study and obviate the criticism that students desiring Home Economics work often are required to complete a full academic year without registering for any of the "practical" courses.

Forestry.—The small registration in the Forestry courses during the last year has made it desirable to decrease the expense for the instruction of these students. Plans have been made and put in operation in the second semester of 1917-18 for combining the instruction in the sophomore and junior years. During the last semester both the sophomores and juniors were scheduled for junior classes, and in 1918-19 only sophomore courses will be offered to both of these classes. Thereafter the sophomore and junior work will be offered in alternate years. The work at Itasca Park will also be offered only during the summers following the years in which the junior courses are given.

The number of credits required for graduation has been increased from 157 to 159. This includes the two summers at Itasca Park in addition to three and two-thirds academic years at University Farm.

THE SCHOOLS OF AGRICULTURE

THE CENTRAL SCHOOL AT UNIVERSITY FARM

The effect of the war upon the spirit and character of work of students of the School was very noticeable. A general seriousness of purpose and intention to make the most of all the opportunities offered to students were manifest. Alumni and former students of the School who are in military service have won rapid promotion as a result of the scholastic, military, and disciplinary training received at the School. Frequent letters from such persons were read at School assemblies and served to stimulate and intensify the earnestness with which the students came to the campus.

Actual supervision and instruction of the School cadet corps were transferred to the authorities of the School itself, and satisfactory scholastic work and personal conduct at all times required as a condition for promotion in the corps. This resulted in a fine spirit and high degree of efficiency in the military training as well as in the scholastic work of the students.

Additional elective courses for all students, both girls and boys, were introduced into the curriculum with the view of permitting each student to prepare himself specifically for the kind of farm work which he expects to pursue. At the same time, additional emphasis and more rigid requirements were placed upon those subjects which train the young man or woman for leadership in the affairs of the home community.

A plan of systematic follow-up of the summer work of the students of the School has been effectively carried out. Two men, P. L. Johnsrud and G. A. Lundquist, were detailed for this work. They have inspected and passed upon the projects for which pupils were registered, they have encouraged students to undertake special projects; they have given information concerning the work of the Department of Agriculture; they have visited former students and alumni of the School, reported on the work done by each one on the farm and in the community, and in general have had a valuable influence in cementing the interests of the School and the farm. This work should be continued and enlarged during the coming year. Funds made available by the Smith-Hughes Act aided in financing this new work, which for the next year will be increased fifty per cent.

THE NORTHWEST SCHOOL AT CROOKSTON

The work of the Northwest School during the past year has been mainly a continuation of previously organized projects. Home work has been placed on a definite basis with federal funds under the Smith-Hughes Act used for supervising this work.

The members of the School Faculty have been called on for considerable extension work, and in addition the emergencies of war have called for service in connection with Red Cross, Y. M. C. A., food conservation and production, and other activities. The Red River Valley counties organized early to assist the Government in the campaign to increase food products.

The course of study has been changed to comprise about sixty per cent of required, and forty per cent of elective subjects for boys. The girls' course will be reorganized on this basis, beginning this year. A very full report of practical exercises that should be included in the various courses was made by a special committee appointed for that purpose. A marked feature of the School's progress has been the improvement of teaching done in the various courses, due to an intensive study by members of the Faculty of the problems involved in this matter. The usual short courses have been offered, including Farmers' Week, Junior Short Course, and Summer Session for teachers.

The School students continue to be the recipients of a number of scholarships offered by local citizens interested in the welfare of the School. These scholarships are awarded for diligence shown and progress made in the various subjects.

The total number of students enrolled in the regular three years' course now numbers 1,039. Of this number 230 have completed the course; 196 were enrolled during the current year. Ninety-six alumni and former students are in the service of the Government.

A motor bus to be used in transporting students from the School to Crookston has been secured. The county and state coöperated in grading the roadway to Crookston, spending for this purpose $4,000, and making a grade sufficiently high to keep the roadway free from snow during the winter. This action is very important in providing better transportation facilities for the students of the School.

The organization of the Agricultural Schools Committee which meets four times a year is another important event of the past year.

The School is in need of a new dining hall. Funds for this building were provided by the last Legislature, but the appropriation was vetoed by the governor. A hard surface for the roadway between the city and the school, which was recommended by the Regents in the last budget, is another legislative request that should be renewed.

THE WEST CENTRAL SCHOOL AT MORRIS

The West Central School has experienced a most substantial growth in all of the School sessions during the past year. The attendance of the various sessions is now such that the physical equipment and the services of the Faculty can be used to their full capacity.

During the past two years, the course of study for both boys and girls has been carefully revised and placed to a large extent upon an elective basis. The results thus far have been most satisfactory. It is, however, necessary to maintain sufficient substantial required subjects to give permanence to the course of study. Farm engineering, animal husbandry, agronomy and farm management are the chief electives for boys. Home nursing, dressmaking, cookery, and music have been the major lines of electives open to girls. To this list will be added business training.

Home projects work was begun during the past year under the Smith-Hughes Act. About 40 boys and an equal number of girls have had home projects. The projects are so planned that the student may assume complete charge of some branch of the farm work. The work is done upon the project basis and reports are made at regular intervals. Instructors in charge of the different sections supervise the work and make frequent visits to the farm, and advise and counsel with the students concerning their projects.

Of the various short courses held throughout the year, the week for farm women was one of the most successful. Seventy-five women from the farms of this section of the state spent a week during June at the School of Agriculture. Experts from the various state departments on

home economics and home management subjects made up the major portion of the program. The gardens, plots, flowers, livestock, etc., were a large source of information.

The crowded condition of the dormitories, dining-hall, classrooms, etc., made it necessary to abandon the Farmers' Short Course during the last year. However, a two days' tractor school was held which evidently met a recognized need. Some of the most inclement weather of the winter did not prevent 72 men from taking the work. Charts, tractor appliances, and laboratory demonstrations made up the program. The greatly increased usage of tractors has created a big need for this work.

A closer relationship should exist between the boys' and girls' club work of this section and the School of Agriculture. Both the Superintendent of the School and the state leader of club work feel that close coöperation would extend the usefulness of the School and at the same time strengthen the club work. In the past there has been no definite plan upon which this arrangement could be worked out. Beginning with next year, a district leader of club work for west central Minnesota will be located at the School.

The buildings and equipment are ample for the present needs of the institution with the exception of the boys' dormitory. The congestion in this building in 1917 was so great that 15 students were moved to the old hospital building, and about 20 boys found rooms down town. There are very few modern houses in Morris which have rooms to rent to students. The distance to town, and the need of dormitory supervision for students, also made it impractical to consider the city of Morris as a future source of rooms for students. The need of an additional boys' dormitory is urgent at the present time, and the increase in the enrollment must depend upon this addition.

AGRICULTURAL EXTENSION WORK

During the year ending July 31, 1918, the Agricultural Extension Division had in its employ 17 men and 6 women for full time. Six men were employed for part time during the winter season, and from 17 to 20 County Agents were employed during the full year with large additions the last few months, 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 1917-18:

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	52,128.25

Federal Smith-Lever funds to be expended under projects submitted by the Director of Agricultural Extension and approved by the States Relations Service of the U. S. Department of Agriculture.....		39,730.63
Federal funds appropriated to the U. S. Department of Agriculture and used for coöperative 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	
		198,757.00
		$348,615.88

Offices and equipment.—The Agricultural Extension Division 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 55,000 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 news 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. 30 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 made a special "Crop Production Number," paying special attention to proper methods of preparation for and growing of the different crops produced in Minnesota.

The following numbers have appeared in Farmers' Library Series:

Bulletin 64 *Conservation Recipes and Suggestions,* by the Division of Home Economics, 16 pages, 75,000 copies.

Bulletin 16 *Strawberries and Bush Fruits,* by LeRoy Cady and K. A. Kirkpatrick, 16 pages, 25,000 copies (reprint).

Bulletin 11 *Dressing and Curing Meats on the Farm,* by W. H. Tomhave and D. A. Gaumnitz, 16 pages, 25,000 copies (reprint).

Bulletin 47 *Clover,* by A. C. Arny, 16 pages, 25,000 copies (reprint).

Special Series bulletins were printed as follows:

No. 12 *Farm Dairy Cheese,* by R. M. Washburn, 8 pages, 25,000 copies.

No. 13 *Storage of Root Crops on the Farm,* by W. W. Cumberland and others, 8 pages, 25,000 copies (published at the expense of the Minnesota Commission of Public Safety).

No. 14 *Preparation of Perishables for Market,* by W. W. Cumberland and others, 8 pages, 25,000 copies (published at the expense of the Minnesota Commission of Public Safety).

No. 15 *Textiles,* by Marion Weller, 20 pages, 15,000 copies.

No. 17 *The Bread-Making Contest,* 1917-1918, by T. A. Erickson, and Mrs. M. B. Baker, 16 pages, 15,000 copies.

No. 18 *The Sewing Project,* 1918, by Miss Annie E. Shelland and Mrs. M. B. Baker, 8 pages, 30,000 copies.

No. 19 *The Cost of Milk Production,* by F. W. Peck and Andrew Boss, 8 pages, 25,000 copies.

No. 20 *Food Conservation Programs for Women of Farmers' Clubs,* by Lucy Cordiner, 8 pages, 10,000 copies.

No. 21 *School and Home Gardening,* by R. S. Mackintosh, 8 pages, 10,000 copies.

No. 22 *Grow Better Potatoes,* by A. G. Tolaas, and G. R. Bisby, 4 pages, 10,000 copies.

No. 24 *The Pig Club Project,* by R. C. Ashby and L. H. Fudge, 4 pages, 5,000 copies.

No. 25 *Clothing Conservation,* by Marion Weller, 4 pages, 10,000 copies.

Miscellaneous publications were:

That Boy on the Farm but Not in School, a reprint of an editorial in Levang's Weekly, by W. S. Sylvester, 20 pages and cover, 10,000 copies.

Leaflets on *Milk, Vegetables,* and *Fish,* published for distribution at the Automobile Show, by Miss Bull, Miss Lange, and Miss Secrest. *Milk,* 35,000 copies; *Vegetables,* and *Fish,* 25,000 copies each.

County agent work.—Under the direction of the Division, 18 counties have continued regular county agent work. These counties are as follows: Anoka, Clay, Crow Wing, Dakota, Faribault, Grant, Hennepin, Jackson, Kittson, Lac qui Parle, Murray, Otter Tail, Ramsey, Renville, St. Louis, Steele, Traverse, and Washington.

In view of the demand on the part of the United States Government that a county agricultural agent be employed in every county as a war measure under the Emergency Food Production Bill which provided increased funds for that purpose, a strenuous campaign was conducted for organizing all the counties. This program was carried out with the result that 68 additional counties were organized, bringing into the work all of the 86 counties in the state. To accomplish this work and to connect it up closely with the progressive farmers of the state, a county farm bureau was organized in each county. Approximately 30,000 farmers have joined these various farm bureaus. With 3 exceptions each county has appropriated $1,000 from county funds for the work, besides raising from $200 to $1,500 by memberships.

County agricultural agents and the organized farmers represented by the county farm bureaus have been especially helpful to the Government in keeping the Government in touch with the farming people of the several counties. Through the efforts of the county agricultural agents during the year, 4,000 acres of alfalfa were seeded, over 1,000 head of pure-bred livestock were procured for Minnesota farmers for breeding purposes, and 9,000 acres in drainage projects were supervised. In spite of very unfavorable conditions, sufficient good seed corn was secured and tested to plant 816,650 acres of corn, or approximately one third of the corn acreage of the state. Assistance was given in the disposition and marketing of farm products, and thousands of farm laborers were secured for farmers.

Every farm bureau organization through the leadership of the county agricultural agent and with the assistance of representatives of the Division, has endeavored to formulate a yearly program of work. This program or plan of work has grown out of the local situation. In developing such programs, effort has been put forth to emphasize the outstanding agricultural enterprises of the county, those from which farmers derive their principal income and those from which there is promise of increased financial returns.

The features of the farm bureau organization as applied in Minnesota lend themselves well to the advancement of a well-balanced program of agricultural activities as each of the officers and executive committeemen, from 10 to 15 persons, is selected to advise and coöperate with the agricultural agent in promoting a particular enterprise with reference to which the officer or committeeman is especially qualified. In promoting local efforts within smaller units of the county, community committeemen or advisory councilmen serve in a similar capacity.

This general plan of organization and procedure gives voice in local agricultural affairs, it develops rural leadership, and the people are served collectively with reference to their common problems by the agricultural agent or other representative of the state and the U. S. Department of Agriculture.

It is meet to mention that during the war nearly all other functions of Government have gone to the agricultural agent and the farm bureau

for assistance. For example, the War Industries Board urged that the County Agents pool the wool clips of their respective counties. The Food Administration coöperating with the U. S. Bureau of Markets designated the agent as a member of the county threshing committee; and the latter requires telegraphic reports monthly of wheat threshed in each county. The War Department requires the agent to approve or dissent from applications for furloughs for soldiers for farm labor. Assistance is given in the organization in the rural sections of the Liberty Loan, Red Cross, Y. M. C. A., and other campaigns.

Never have results been accomplished in county agent and farm bureau effort as this year. When the farmers of the nation are facing great responsibilities under growing difficulties, it is gratifying that the farm bureau movement has demonstrated that it has risen to the situation and assisted in meeting the big problems of the farmer in a constructive way. The merit in the movement seems to justify making the farm bureau organization the local agency through which all extension effort should be cleared and conducted, and under which all county extension workers should be employed in coöperation with the Division.

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 4 assistant state leaders and 70 other leaders whose territory has been a county, or less. Splendid assistance has been given by farm bureaus, county fairs, farmers' clubs, commercial and other organizations.

Funds for the work have been provided as follows:

By State College of Agriculture	$1,205
Federal Smith-Lever	5,270
U. S. Department of Agriculture	4,710
U. S. emergency funds	13,000
U. S. Department of Agriculture for pig club work	1,800

The 70 county and district leaders have been on either a part-time basis, devoting not less than 4 days per month to the work, or on a full-time basis, giving entire time to the work. They have been paid from the emergency funds, together with appropriations by farm bureaus, school boards, commercial clubs, or other local institutions.

The work has been carried on under 10 home and farm projects. The projects, number of clubs organized, and individual enrollments for each are as follows for 1918:

Project	Number of clubs organized	Total enrollments
Corn	120	1,100
Potato	560	3,100
Home garden	411	15,000
Canning	300	3,200
Sugar-saving sugar beet	60	500
Poultry	241	2,245
Pork and crop production	280	1,700
Baby beef and calf	102	625
Bread	320	4,500

Sewing (Red Cross)	85	494
Cow-testing	21	246
Total	2,500	32,710

These figures, however, are not complete as they represent the enrollment only up to July 1.

For the year ending January 1, 1918, the summary of projects is as follows:

Total number projects	8
Total number of clubs organized in all projects	1,762
Clubs actually began work	1,655
Clubs completed all work	1,202
Total enrollment	14,883
Number members actually began work	13,842
Number members reported	6,838
Members who completed all work	6,634
Total value of all products produced	$115,739.20
Total cost of production	$40,388.40
Total overhead or supervisory cost of club work	$11,185.00
Net profit to state	$64,165.80

A few concrete illustrations will show the economic importance of this work:

Carl Potthoff, the 14-year-old garden and canning club member and champion of 1917, is this year the leading member of a family partnership which is canning 25,000 quarts of vegetables, grown on what has been waste plots of ground.

Edmund Lenzmeier, the corn club winner of 1917, selected and sold 45 bushels of seed corn from his club acre, at $14 per bushel, making a net profit on his acre of nearly $700.

The potato club at Iverson has made this community stand for a standard variety of potatoes. Several carloads were shipped out last year through the efforts of a group of 14-year-old boys.

Examples like these could be given from each of the projects.

The club leaders have been fortunate in having the support and cooperation of the State Superintendent of Public Instruction and his entire force of assistants which have helped to make the work especially strong in the schools. The management of the Minnesota State Fair is supporting the work to the amount of nearly $4,000, by assisting to bring in demonstration teams in the different projects, as well as by providing prize trips for county champions in nearly all of the projects. Nearly 400 boys and girls were brought in for the 1918 fair. The Minnesota State Horticultural Society has made club work a special feature of its work, supporting it not only with funds, but by giving the work a special part on its annual program. The Livestock Breeders' Association of the state has made a special appropriation to take care of the calf-growing contest, and we have had closest coöperation and support from its officers in promoting this phase of club work.

The following figures indicate the work which has been done by the State and County leaders during the year:

Field meetings	3,942	Attendance....	158,287
Demonstrations (canning, drying, bread baking, etc.)	539	Attendance....	22,886
Personal visits to club plats	7,150		
Groups of leaders trained	265		
Club fairs, exhibits, etc.	137		
State club leaders' training school	1	Attendance....	75

Farm management demonstrations.—Due to war conditions our activities have not been centered entirely on the program outlined in the project between the Extension Division and the U. S. Department of Agriculture. The war has shown the need of farm management work for the reason that with rapidly changing prices for both the commodities that the farmer sells and buys, and a continually decreasing labor supply, continual analysis and study of his business upon the part of the farmer are required in order that his business practice may respond to these changing prices and the decreasing supply of labor. Furthermore, with continual agitation regarding the question of just prices for wheat and milk, and a partial control by the Government of the price of pork and certain other commodities, it is vital to the public interest that farmers in increasing measure study their business from the cost standpoint so that their leaders will be able to present fully to the public and to the government officials, information that will prevent the fixing of prices so low as to fail to maintain or increase the supply of essential agricultural products. Farmers are showing great interest in the subject of farm records as a result of the recent income tax law.

In view of the limited force available for farm management demonstration work, it would seem that our task is very largely that of training our county agents in the methods of handling farm management subject-matter so as to produce a successful farm bureau project in farm management.

Change of personnel.—Upon October 1, Mr. Frank J. Brown, assistant in farm management demonstrations, was transferred to the position of county agent of Murray County. No successor for Mr. Brown was secured until December 1, when Mr. C. D. Patterson assumed the position made vacant by the transfer of Mr. Brown. Mr. Patterson was formerly student assistant in farm management demonstrations, and at the time of his appointment was high school agriculturist at Delavan, Minnesota.

Statistical summary.—The following gives the salient features of our work for the year ending June 30, 1918:

Demonstrations continued from previous years:	
Number counties having demonstrations	6
Number of coöperators assisted in summarizing account books	63
Farm records summarized from estimates furnished by the farmer	5
Newspaper articles prepared outlining results of demonstrations	10
Meetings attended to explain results of project	3
Total attendance at such meetings	105
Farm bureau circulars prepared	1

Demonstrations inaugurated during year:	
Number of counties	11
Number of coöperators	164
Meetings to explain projects	11
Attendance at such meetings	450
Farm record book in coöperation with State Bankers' Association:	
Number copies distributed by banks	75,000
Short courses:	
Number short courses attended	25
Number sessions attended	76
Total attendance	4,609
Cost of operating tractors:	
Farmers assisted to summarize cost of tractor operation for their individual farms	30
Manuscript prepared for Extension Division bulletin, entitled *Shall I Buy a Tractor?*	
Assistance to county agent leader:	
Time given to assisting in organizing Minnesota under "The Food Production Act"	6 months
Assistance by Mr. Brown to Public Safety Commission on farm labor problem:	
Time given	1½ months
Assistance to Food Administration:	
Time given	½ month
Farmers' club and other meetings in counties not having a farm management demonstration:	
Number meetings	11
Total attendance	785
Judging at fairs:	
Number county fairs at which farmers' club booths, grains, etc., were judged	20
Correspondence:	
Estimated number of letters written in response to requests for specific information regarding farm accounting, farm leases, etc	100
Assistance in brief on railway siding:	
Assisted committee of farmers from Midland Junction prepare brief on economic value of a proposed railway siding.	

Home economics.—During the year five 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 in giving demonstrations by means of the exhibits, and 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 along the line of food conservation and the use of substitutes, and practically all of the effort of the home economics workers was devoted to food work.

One of the women employed is a public health specialist. She has devoted the main part of her time with excellent results to arousing interest in public health and in giving specific information along public health lines by means of lectures and demonstrations.

Emergency home demonstration work.—As a result of an emergency appropriation through the United States Department of Agriculture, funds were available for each state for emergency home economics work. Because of the nature of this work it has been designated emergency home demonstration work. In September, 1917, 13 additional home economics specialists were employed under this appropriation. One was chosen as a state leader, 3 were placed in the three larger cities of the state as urban home demonstration agents, and 9 others placed as district home demonstration agents. It was the desire of the Department of Agriculture to locate these women, one in each county, the Department paying the salaries and the counties the local expenses. During the year 6 counties were organized for the work, so that at the end of the year 3 of the 13 agents were employed as urban home demonstration agents, with expenses paid locally, 6 were employed as county emergency home demonstration agents, 3 as district emergency home demonstration agents, and 1 as state leader.

During the year these home demonstration agents conducted 1,302 lectures and demonstrations, placed and cared for approximately 200 food exhibits, held 537 training classes for local leaders, attended 134 meetings called for the purpose of organizing the work locally, and attended 467 conferences on food conservation and home demonstration work.

Demonstration farms.—During the year the Agricultural Extension Division has directed the management of 18 demonstration farms. These farms are owned by the men living on them. It is required that each farm demonstrate practical farming for its community and that it pay a good labor income besides 5 per cent on the investment.

An inventory is taken at the beginning and close of each year and a careful account is kept of all farm transactions. An annual report is made of the work of each farm. These reports are studied at community and farm club meetings in the vicinity of the demonstration farm, and also published in the local papers.

Livestock judging demonstrations, seed corn selection contests, stump and stone blasting, and various farm demonstrations are held at the different demonstration farms.

During this past year two men have been visiting these farms on an average of every 3 or 4 weeks. One clerk has been employed taking care of the reports, etc.

Several demonstrations were held on the farms last year and were very successful and well attended by surrounding farmers. A very successful stump- and stone-blasting demonstration was put on at the Long Prairie demonstration farm and also at Bagley. Several livestock judging demonstrations were given during the year and were well attended.

Attached will be found a table giving the labor income on fourteen demonstration farms. It was impossible to get the labor income on the other four farms due to incomplete reports.

LABOR INCOME OF MINNESOTA DEMONSTRATION FARMS*

1917

	Acres	Land value	Working capital	Total capital	Interest at 5%	Labor income
Albert Lea	134½	$20,700.00	$12,680.15	$33,380.15	$1,669.01	$3,797.05
Brook Park	159	5,565.00	3,513.62	9,078.62	453.93	654.64
Bagley	172	5,050.00	3,579.75	8,629.75	431.49	1,065.73
Carver	268	16,700.00	8,366.75	25,066.75	1,253.34	4,185.83
Dawson	160	16,200.00	9,551.97	25,751.97	1,287.60	2,063.09
Fergus Falls	310	26,350.00	14,254.12	40,604.12	2,030.21	2,244.07
Fairmont	200	29,500.00	8,368.00	37,868.00	1,893.40	1,658.71
Hutchison	221	20,500.00	6,695.77	27,195.77	1,359.79	3,042.81
Lakefield	92	12,800.00	5,709.75	18,509.75	925.49	1,885.67
Little Falls	120	5,200.00	4,413.00	9,613.00	480.65	975.05
Park Rapids	397	17,865.00	8,564.50	26,429.50	1,321.48	2,010.20
St. Cloud	186	6,975.00	8,698.62	15,673.62	783.68	1,615.10
Thief River Falls	160	7,200.00	5,926.11	13,126.11	656.31	308.29
Wadena	120	7,600.00	4,711.50	12,311.50	615.58	1,430.86

* Labor income is the amount the farm owner received for his own labor and management after paying all expenses including labor by other members of the family and allowing 5 per cent interest on all money invested.

Livestock and dairy extension.—During the year strenuous efforts have been made to maintain the dairy industry of Minnesota. High feed and labor prices, together with the question of just prices for dairy products would, it has been feared, cause many to go out of dairying. The inroad of butter substitutes has been detrimental to dairying and, to overcome this handicap in a measure, and to make the best possible use of dairy products during the heavy production season, a rather intensive campaign was put on to encourage the use of dairy products. This resulted in the use of more milk, more butter, and more cheese.

Work of the cow-testing associations has been continued in spite of great handicap in securing competent men for the work. Cow-testing associations are so limited in finances that they can not pay the wages necessary at present. However, the work has been maintained, tho the assistant in charge at the beginning of the year and 30 local cow testers have gone into army service during the year. The results of cow testing as a means of dairy herd improvement are well illustrated by the following table:

IMPROVEMENT IN DOVER COW-TESTING ASSOCIATION
1916-17 COMPARED WITH 1917-18

	Average pounds milk	Average pounds butterfat	Average value	Total feed	Profit above feed
1917-18	6,490	247.0	$129.27	$67.45	$71.82
1916-17	4,885	186.3	87.54	35.99	51.55
Increase in one year	1,605	60.7	$42.73	$21.46	$20.27

The value of the pure-bred sire has also been shown by testing work. The following table represents the improvement in the herd of Victor Stiehl, Albert Lea, during 6 years' work with the Pioneer Cow-Testing Association, and is the result of testing and the use of the pure-bred sire.

1910-11.....Herd av. 17 common cows.....milk 6,258 lbs.....butterfat....275 lbs.
1915-16.....Herd 17 grade dairy.....milk 8,164 lbs.....butterfat....397.9 lbs.

Another important work of the cow tester is in testing the cream separators. A good separator should leave not to exceed 3/10 of 1 per cent of butterfat in the skim-milk. One separator was tested that was leaving 1½ per cent of fat in the skim-milk and resulting in a loss of over $30 per month to its owner. The following table illustrates some of the work done along this line:

IMPROVEMENT DUE TO MINNESOTA TESTERS

Have you a cream thief on your farm?

Month	Number of machines tested	Per cent testing over .03 per cent
January	123	33
February	138	26
March	134	20
April	127	19
May	135	18

Causes of poor skimming

52 per cent—Too slow turning
11 per cent—Worn discs
5 per cent—Poor foundations
5 per cent—Wobbling bowls

Are you losing money from any of these causes?

Bull association work has been encouraged and there are now 9 of these organizations in successful operation.

The general livestock work of this state has been encouraged through county fairs, through colt and calf clubs fostered by the Minnesota Livestock Breeders' Association, and by means of general livestock extension work, including short courses.

Assistance was given in the organization of the Minnesota Dairy Council for the purpose of gaining the united support of all interested in the dairy business in advertising dairy products and securing a more general knowledge with reference to their value as food.

The Division has coöperated with the livestock interests of the state in encouraging the beef industry through baby beef calf clubs. In several counties a special campaign has been inaugurated, in coöperation with county agents, for more economical production of pork by means of the greater use of pasture and the self-feeder.

Coöperative creameries.—During the year work has been continued with the coöperative creameries and an effort has been made to strengthen the weaker creameries and to make clear to all the creameries the essentials for success. These are probably a combination of three conditions, a reasonable amount of product, good quality of product, and good management. A coöperative creamery that has a fair-sized business and

turns out a good product and is reasonably well managed is absolutely free from any outside competition. Reports have been secured from large numbers of creameries monthly, as to the prices for fat, prices secured for butter, and these have been duplicated and returned to the creameries, showing each where it stood in comparison with others.

Farmers' clubs.—The farmers' club work has been interfered with slightly during the year, because of demand for other things. One man has been employed for this work, but has been able to devote not more than half his time to it. However, the club movement is still thriving through the state and practically 1,200 clubs are active, and over 300 of these have joined the State Federation. The Federation holds its annual meeting each year at the University Farm in connection with the farmers' and home-makers' week.

Poultry extension.—Poultry extension work has been continued as in the past year. One man has devoted full time to this work. The demonstration at Barnum in poultry husbandry has been continued and another demonstration started at Aitkin. The Barnum work has been a decided success and has really become a very important factor in the industry of Barnum, and in that section poultry production comes more nearly being a definite paying business than in any other place in the state. A general poultry production has been encouraged through short courses, in farmers' club meetings, boys' and girls' poultry contests, local poultry shows, and through general publicity. During the year we have had the coöperation of a representative from the United States Department of Agriculture, who has spent full time here in assisting with the poultry extension work.

Short courses.—Agricultural Extension Short Courses have been continued as in the past, 9 5-day courses were held, 4 2-day courses, and 21 3-day courses. At most of these places work was given for men, women, boys, and girls. A total attendance at these courses was 11,000 men, 7,675 women, 1,825 boys and girls; a total of 20,500. Courses were held usually in coöperation with county agricultural agents, or where there were no agents, in coöperation with local high schools.

Horticultural extension.—One man has devoted about half time to this work. Special emphasis was put on gardening and canning because of its importance to the world's food supply. Every effort has been made to encourage gardening both on the farms and in the cities. The results are obvious, nearly everyone has supplied himself with all of the smaller vegetables needed. About 120 meetings of various kinds pertaining to horticultural work were attended by horticultural specialists, and at these meetings there was a total attendance of 12,070. In addition to these meetings, assistance was given boys' and girls' projects, and garden projects, and general publicity was given to the matter of the importance of gardening.

Extension work in plant pathology.—One man has devoted his entire time to this phase of the work. One of the more important features of

this work has been in connection with the potato disease control. Most satisfactory results have been secured along this line, showing that intelligent control of the disease may result in an enormous saving to the state and to the growers who use these methods. It is hoped that this work may eventually develop into a plan for potato seed certification, so that disease-free seed may be intelligently marketed from this state.

Soil extension work.—One man was employed half time making demonstrations in the use of fertilizers and lime, in the growing of alfalfa and legumes. The coöperation of a number of farmers was secured for the demonstrations in the use of phosphate. The Experiment Station has been criticised for failing to give proper encouragement to the use of commercial fertilizer, especially phosphate. For many years experiments have been conducted throughout the state, and with a few exceptions have shown the application of phosphate not to be profitable, consequently it can not be generally recommended. In a few sections of the state, however, present indications are that the use of phosphate is becoming profitable. Considerable work was done in the liming of alfalfa. There is no doubt about the value of applying lime to soil that is sour. This is especially important where it is desired to grow legumes. A number of demonstrations have been conducted in the use of legumes as green manure crops.

Food administration.—The position of Federal Food Administrator for Minnesota was accepted by the Director of the Extension Division about the 15th of September, 1917. This was an entirely new work designed to encourage production, insure equitable distribution, and to secure maximum conservation of food. Normal Agricultural Extension work is approximately the same, except that the Division has had no real authority in the matter of controlling distribution. It is perfectly natural and logical to combine the Food Administration work and the Agricultural Extension work. This involved enlarging the force greatly, and demanded greatly increased office space, which has very generously been provided by the Dean of the Department of Agriculture. The first big task of the Food Administration was to organize the work in each county in the state. This has been accomplished and the following organization effected:

In each county there is a county food administrator with full authority, and with the franking privilege, and during the latter part of the year some office assistance was provided. In each county, a staff has been built up back of the county food administrator consisting of:

The county agricultural agent, representing the farm; a representative merchant, representing the handlers of food; a representative housewife, representing the home; a hotel man, representing the eat shops of the county; a school man, usually the county superintendent, representing the schools; at least one minister to represent the churches, and some newspaper men to represent the press. With this sort of organization in each county it is possible to utilize the different agencies already in existence in the county for food work. The Food Administration work

has been largely an educational proposition, and the schools, churches, public press, and food handlers, together with the women's organizations, have been important factors in making it possible to enlist the coöperation of the greater part of our population.

The State Food Administration office has been organized into departments with a man at the head of each:

Educational Division, County Organizations, Merchant Representative, Hotel and Restaurant Division, Sugar Division, Ice Division, Bakery and Flour Division, Perishables Division, Grain Threshing Division, Transportation Division, Home Economics' Division, Legal Division, Campaign Division, Library Director, Motion Picture Division, and Camp Division.

The voluntary coöperation of all the people in Minnesota, including the handlers of food, has been most encouraging. The program outlined by the Department at Washington has been very generally carried out. Very few violations have been found and in more than 95 per cent of the cases, we have found people in the homes and stores, on the farms, and in all the private and public institutions of the state perfectly willing to follow the food regulations. Most violations have been a result of misunderstanding rather than a result of deliberate violation of a rule.

Minnesota has just harvested the greatest crop in its history, which is not only an indication of favorable weather, but is an indication of the intense patriotism of its citizens, especially all those on the land. It is probable that Minnesota farmers have worked harder and more hours this year than ever before. It is gratifying to know that weather conditions and prices were such that they are reaping handsome rewards for their services.

SHORT COURSES

Continuing the policy established in former years of utilizing the equipment and instruction of the Department of Agriculture for the benefit of those who can pursue work here for brief periods only, the following short courses have been maintained during the past year: Creamery Butter-Makers', two weeks in December; Cheese-Makers', three weeks in December; Ice Cream Makers', one week in December; Farmers' and Home-Makers', one week in January; Beginners' Dairy Short Course, three months, in January, February, and March; Editors', one week in February; Boys' and Girls', one week in April; Summer Session, College of Agriculture, six weeks in June and July; State Teachers' Training School, six weeks in June and July; Grain Elevator Managers', one week in July. The five-weeks' course for Traction Engineers usually held in May and June was planned and a bulletin printed, but was not held because the buildings, Faculty, and equipment were being used for military purposes. The Rural Life Conference which has formerly been held in July was abandoned to make way for other activities already organized and definitely aimed toward the successful prosecution of the war.

The enrollment in the various short courses at University Farm for the year 1917-18 (total 2,750) is shown in detail elsewhere in this report.

At the Farmers' and Home-Makers' Short Course 22 state organizations of stock men, crop men, and civic bodies held their meetings.

In the administration of short courses, the short course committee has been discontinued, its duties now devolving upon the Executive Committee of the Department.

In addition to the above short courses held at University Farm, short courses were conducted at the Northwest School of Agriculture at Crookston and at the West Central School of Agriculture at Morris as shown in the reports from those schools.

THE EXPERIMENT STATION

The Experiment Station staff met April 23, 1917, and adopted the following resolutions:

"Whereas, the present and prospective food shortage demands both increased production of staple food crops and scientific utilization of these and of all possible substitutes for and amendments to them, in both of which lines of endeavor German men of agricultural science have proved of invaluable assistance to their country in a similar crisis; and

"Whereas, the experience of England has shown that in time of war, skilled scientists can render their greatest assistance in promoting industrial, agricultural, and business efficiency, and

"Whereas, the results of up-to-the-minute research in the preparation of munitions and engines of warfare and of meeting emergency needs for food, clothing, medicinal treatment, etc., has been demonstrated to be one of the most necessary elements in successful modern warfare, therefore be it

"Resolved, (1) that it is the sense of the Experiment Station Staff that the highest usefulness of the University, in the present crisis, will be conserved by maintaining its research organizations at their highest possible efficiency.

"(2) That the Experiment Station Staff pledges its members to renewed devotion to the advancement of the science of agricultural production and distribution and offers its services to the State and to the Nation as a research agency for this purpose, and

"(3) That we believe that these ends will best be attained by the uninterrupted continuation of those projects of research which have for their immediate object the increased production or better utilization of agricultural products, and by the devotion of any time and effort which may become available by the discontinuance of other projects or by decreased instructional duties to advisory and extension work having for its object the assistance of farmers in putting the best known methods into actual practice."

So far as possible in all divisions work has been temporarily discontinued on minor projects and sub-projects which have no direct bearing on the war conditions. In the case of such projects organized to cover a period of several years, only such observations are made as will make it possible to continue the project at the close of the war without serious loss of time. All available assistants and funds have been assigned to the problems of immediate importance with a direct bearing on the production and conservation of the agricultural products essential for the carrying on of the war.

THE CENTRAL STATION

The investigational work of the Central Experiment Station has been continued through the year without serious disturbance. The draft and enlistment in various branches of war service has taken out of experiment station work some of the younger men, and has brought many changes in personnel. This has lead to discontinuing temporarily a few projects of minor importance. Other projects have been voluntarily discontinued as not being immediately essential to the production or conservation of foodstuffs or to the needs of the Federal Government. Emphasis has been placed on those projects which promise to give information immediately useful in increasing production or in conserving the highly concentrated foods.

Notwithstanding the shortage of and frequent changes in labor, the number of projects has increased to a total of 112. Of these 57 are classed as research, 31 as experimental, 10 as demonstrational, and 14 as survey or regulatory. Progress reports have been submitted showing the work accomplished for the year from which the following extracts are taken.

Studies of the gluten colloids of wheat indicate that the physical state of the gluten is of paramount importance. Colloidal properties of gluten from a weak flour are markedly inferior to those possessed by a gluten from a strong flour.

Studies of the use of frozen potatoes as adapted to the manufacture of potato flour show that the moisture can be more easily expressed from frozen potatoes than from those not frozen, and that the quality of flour prepared from frozen potatoes was superior to that prepared from unfrozen potatoes. This is a point which should be used in salvaging the large quantities of potatoes which are frozen annually in transit.

Attempts were made to manufacture dry sugar beet powder from sugar beets. A quantity of powder was tested by the Home Economics Division, but it was found unsatisfactory as a sugar substitute, except in certain limited instances. Sirup made from the beets was used to much better advantage than the sugar beet powder.

While the activities in Agricultural Economics have been limited by members of the staff giving service to the Federal Government and to the State Public Safety Commission, it has still been possible to collect the data on various coöperative movements required by state law. These data will be used in studying the progress of these movements and in developing more effective coöperation.

Investigational work in Agricultural Engineering was almost totally discontinued during the year for the reason that the Chief of the Division and other members of the staff entered the war service. The training of aviation mechanics has fully occupied the time of the remaining members of the staff.

The study of barley breeding in coöperation with the Bureau of Plant Industry, of the U. S. Department of Agriculture, has resulted in

the development of a strain of barley with smooth beards, which is apparently meeting the requirements for yield and strength of straw, and which is now being increased for extensive trial in the state. Similarly pure-line selections and purified hybrids of wheat, oats, and other farm crops that give promise of commercial value are being isolated and developed for general distribution.

Considerable progress has been made in developing statistical methods of measuring plant characters and in the determination of the best technic for making variety and other field plot tests. Studies of the soybean, sweet clover, and other legume crops have been employed for the purpose of finding substitutes for grain concentrates for livestock feeding. A mixture of soybeans and corn gives promise of being a valuable combination for silage making. The difficulty of getting reliable seeds of various root crops has stimulated interest in the production of sugar beet and mangel seed. Good stocks have been secured and a considerable amount of seed is being grown. One and one-half acres of sugar beet seed are being grown at Chaska in coöperation with the Minnesota Sugar Company.

The statistical routes maintained since 1902 have been discontinued, as it was thought that the data in hand gave sufficient information concerning the types of farming under investigation. Investigations of types of farming adapted to the cut-over regions of the state and to southwestern Minnesota where beef and hog raising are dominant will be inaugurated as soon as conditions will permit.

The farm management study in coöperation with the office of farm management of the U. S. Department of Agriculture, terminated April 1, 1918, so far as securing the data is concerned. Another year, however, will be required in which to compile and interpret the data.

Considerable attention has been given to the study of the cost of milk production. A bulletin showing the factors of cost and their application to the production of milk was compiled from the statistical route data and published as an Experiment Station Bulletin. This has been extensively used in determining a fair price for milk in various localities of the state. The farm management study in southeastern Minnesota was completed by the publication of the data in bulletin form.

The investigations in Animal Nutrition are being summarized and those bearing on the requirements for beef production are being compiled for publication. Some investigations in the replacement values of legumes in dairy production were undertaken.

The projects of the Veterinary Division were revised during the year, due to changes in the personnel of the Division. In organizing new projects emphasis has been placed on investigations of contagious abortion of cows and mares. These diseases are spreading rapidly. Their control is a matter of great economic importance. The production and distribution of veterinary biological products has been continued, tho the demand is lighter, especially for anti-hog cholera serum, because of the decline in the prevalence of the disease. Attention has been given to

the production of various bacterins and vaccines, with a view to controlling contagious diseases of livestock. Research in connection with the tuberculin test, giving particular attention to the technic of the various methods of making the test and the accuracy of each method has been undertaken.

Extensive study of the development of pure Italian queen bees has been undertaken, and there has been a large demand for these in improving the bee population of the state. Over 400 queen bees have been sent out by mail during the year.

The work in Entomology and Economic Zoology has been largely revised and some new projects initiated. Studies of measures for protecting wheat flour substitutes from insect attack have yielded results of importance. A simple method of heating to about 45 degrees C. at 24 per cent relative humidity to kill any stages of insect growths that may be present has been recommended and is being requested in other states. Attention has also been given to insecticidal investigations and especially to those bearing on body lice, resulting in an efficient fumigant for clothing.

The forest experiment work has continued on much the same lines as heretofore. Work has been completed on the collection and extraction of Norway and Jack Pine and White Spruce seed. Interesting relations have been discovered between source of seed and hardiness, and immunity from insects and disease.

Special attention has again been given to developing hardy fruits. Winter injury has been more severe than in previous seasons. Studies of 150 parent combinations of plums show that the winter injury to the tenderest tissues serves as an accurate index of hardiness. Some progress has been made in the selection or isolation of types of squash, in potato breeding and testing, and in testing varieties of fruit.

The plant disease survey records have been improved and extended. In the summer of 1917 cereals largely escaped rust and scab, but there was considerable smut. Potatoes escaped late blight, but there were considerable losses from other diseases. Frost and winter injury were more than ordinarily serious in the winter of 1917-18.

The breeding work of cereals for resistance to rust has been continued with special stress upon the studies of biologic forms. The fact has been established that a number of biologic forms of black stem rust exist on wheat. This has an important bearing on the epidemiology of wheat rust in various parts of the country, and particularly on the future of breeding of cereals for rust resistance. The study of the fungi causing root troubles of cereals has been continued.

The seed plot work to combat the potato diseases was continued in coöperation with the Extension Division. Considerable progress has been made. The spraying experiments on apples and plums gave very definite and favorable results, especially in spraying for plum pocket and brown rot of plums. Intensive work on raspberry diseases has been begun.

A large amount of work was done on the blister rust of white pine in coöperation with the United States Department of Agriculture and

the State Entomologist. The disease was found as far north as Pine City, as far south as Afton, and west to the eastern portions of Kanabec and Isanti counties. Over 15 small infection centers were found.

Improved laboratory methods have been worked out for germinating flower and vegetable seeds. Thirteen thousand two hundred samples of seeds voluntarily sent in for germination or purity were tested. This is a 20 per cent increase over the previous year.

The inspection work was also increased; 180 samples were collected. Three prosecutions for violation were begun and successfully completed.

A weed survey project in coöperation with the Farm Bureau of Clay County has been begun. This project aims to bring about the eradication of Canada and Sow Thistle entirely from Clay County.

The Soils investigations have been hampered somewhat by the loss of investigators and graduate students who were assisting in the work. The fertilizer experiments indicate that on certain soils in the western part of the state the use of acid phosphate may be found profitable with wheat and clover on fields that do not receive manure in three or five years. On ordinary soils of the state their use does not seem to be justified. Three tracts of peat land have been selected for investigations relating to methods of draining and cropping such lands. These are located, one at Goodridge in Pennington County, one at Dibbell, St. Louis County, and one near Anoka in Anoka County.

The work of the Experiment Station completed during the year resulted in the publication of 7 Experiment Station Bulletins, 7 Special Series Bulletins, 4 annual reports, and 41 scientific papers in the journal series. There have been mailed out during the year 37,552 bulletins.

NEEDS OF THE CENTRAL STATION

The Central Station is still in urgent need of research laboratory space. The erection of a new seed house for the Agronomy and Farm Management Division gives storage space for seed stocks and space for field laboratory work. Additional research laboratory space would add materially to the equipment of the Division. The laboratory space for Agricultural Biochemistry and Soils is altogether inadequate and should be increased as soon as possible. Horticulture and Forestry are still housed in the same building, and the work of each Division is seriously limited by inadequate laboratory space. Equipment and space should be provided the Animal Husbandry Division for feeding experiments with cattle and sheep and for demonstrating good methods of feeding. If this could be provided on a separate farm devoted to Animal Husbandry and within easy reach of University Farm, it would give much better conditions for the work. Assistants are needed in many branches of the work. The loss of men through entry into Army service has been large and it is difficult to secure men with adequate training for research work. The relief given by the employment of graduate students has been largely cut off, as most of these men have entered some branch of the war service.

The funds for the maintenance of Experiment Station work will need to be substantially increased during the next year on account of the high price of labor and increased cost of equipment and supplies.

There should be a more complete separation of men for Experiment Station work. In the past the demand for instructors in College and School work has drawn heavily at times on the Experiment Station staff. The output of research work would be greatly increased by limiting the time that workers employed in Experiment Station work are allowed to give for the instructional work.

The demands of the times are bringing many problems in agriculture, and it is believed that investigational work should be stimulated and increased rather than curtailed.

THE SUB-STATIONS

The investigational work at the sub-stations has come forward satisfactorily. Additional attention has been given to organizing projects and systematizing methods of conducting investigational work. The fertilizer and rotation experiments have been conducted in coöperation with the Central Station. During the year the work in variety testing and in crop culture investigations has also been formulated into coöperative projects. The fertilizer experiments at the West Central Station indicate that on those soils in the western part of the state on which grain had long been grown the use of acid phosphates may be found highly profitable. At the North Central sub-station it was found that early seeding of rye and winter wheat had a pronounced effect on increasing yield and on certainty of a crop. Investigational work at the Northeast sub-station is still handicapped by the undeveloped condition of the farm. The land clearing investigations have demonstrated the value of stump land pastures in the development of a farm in a cut-over region. The investigational work at the Southeast sub-station has been enlarged and better methods of handling the plots have been devised. Purchase of a gas tractor and a small threshing machine which can be used in threshing field plots will make it possible to expand further the field investigations at this station.

Respectfully submitted,

R. W. THATCHER, *Dean and Director*

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 1917-18:

Attendance and military service.—Naturally the chief item of interest in the report for the session just closed is the effect of war conditions upon the work of the Law School. The eagerness with which students in the Law School enlisted for military service at the outbreak of the war, as described in the annual report for 1916-17, gave us every reason to expect that the great adventure of war would keep from the Law School a large percentage of its normal attendance. These expectations proved to be well grounded, the total registrations for the session just closed being almost exactly 40 per cent less than for the preceding year. The students beginning the session, numbering some 133, rapidly decreased in number as new avenues for military and naval service opened for the men who had been unsuccessful in their previous attempts to enter the service. At the close of the year there remained in residence only 74 students. Of this small number who completed the year's work, many have already entered some branch of service.

The rapid reduction in the number of students in the Law School because of the demands of the service was to be expected, not only because of the high spirit of the young men whose temperaments incline them to the profession of law, but also because of the fact that practically all students in the Law School are of such age as to be eligible under the selective draft law. The fact that nearly all of them have spent several years in the University affords evidence of a higher degree of physical fitness than would be found among a similar number of average young men.

The policy of the Law School, in harmony with the general University administration, has been to afford every opportunity for students to enter military service at the least possible loss of academic standing and credit consistent with the reasonable maintenance of standards.

It is impossible at the present writing to make even an approximately accurate estimate of what will be the attendance during the next session. Less than 50 of the students registered during the session just closed are expected to return. Correspondence indicates that there will be a few students from other institutions and former students of this Law School entering next fall to increase slightly the numbers of the advanced classes. The entering class will be much smaller than usual, but it will probably contain a few soldiers who have been discharged from the service by reason of wounds or other invalidity. The number of such students coming to the Law School and other professional schools will probably be greatly increased in later years if the war continues beyond the present year.

The sub-joined Table I shows the registration as compared with that of the past session:

TABLE I. REGISTRATION

	Regular		Special		Total	
	1916-17	1917-18	1916-17	1917-18	1916-17	1917-18
First year	68	42	44	24	112	66
Second year	52	29	8	13	60	42
Third year	40	25	7	1	47	26
Unclassed	.....	.....	.....	.....	3	.....
					222	134

Faculty.—The heavy loss sustained in the resignations of Professors Morgan and Lorenzen was made heavier by the absence of Professor E. S. Thurston, who entered the military service of the United States as captain, and was later promoted to be a major now on duty in the office of the Judge Advocate General in Washington. This loss was partly met by the election of Everett Fraser, Dean of the Law Faculty of George Washington University, to be Professor of Law. Mr. Wilbur H. Cherry, of the Minneapolis bar, who last year served as Assistant in Practice to Professor Morgan, was elected Professor of Law and given charge of the work in Practice and the course in Contracts. Considering the abnormal conditions under which Professor Cherry began his work it has been markedly successful. The course in Equity was entrusted to Mr. Abbott L. Fletcher, a recent honor graduate of Northwestern University Law School, who was made a member of the Law Faculty with the rank of Instructor. Mr. W. M. Jerome, of the Minneapolis bar, who has for many years taught the course in Evidence, was induced to carry the course in Agency as well in order to meet the emergency. With characteristic unselfishness Judge Homer B. Dibell of the Supreme Court of Minnesota agreed to teach the courses in Quasi Contracts and in Wills and Administration, omitting for the time being his usual course on Extraordinary Legal Remedies. This work, as well as all other that Judge Dibell has done for the University, has been done wholly without compensation. For the next session the teaching power of the Law Faculty has been notably increased by the election of Chief Justice Andrew A. Bruce of the Supreme Court of North Dakota as Professor of Law.

Instruction.—Every effort has been made by the members of the Faculty to maintain previously established standards of efficiency and scholarship in the instruction given. But this has proved a difficult task in view of the perfectly natural excitement incident upon the preparations made by our Government for war, and the distractions due to the efforts students were constantly making to secure admission to different branches of the service. I am glad, however, to bear testimony to the remarkable steadiness and fidelity with which the students have done their work in spite of the many inevitable interruptions and diversions.

Library.—The report for last session shows the total number of volumes in the library to be 25,785. During the present session this number has increased to 27,652. During the summer of 1917 a temporary arrangement was made for housing the overflow of books from the stack room by placing shelves in the main reading-room. The shelving so erected is quite sufficient to provide space for the natural increase of the library during the session 1918-19. After these shelves are filled some other temporary arrangement must be made until adequate housing can be provided for the law library. The placing of these book stacks in the main reading-room has not proved a very serious disadvantage during the year, because of the greatly diminished number of students using the library, but upon the restoration of normal conditions the present reading-room arrangements will become intolerable.

New building needed.—In previous reports I have called attention to the need, now rapidly becoming imperative, of a new law building to provide adequate facilities for the work of the Law School, and especially fire-proof housing for the law library. It is recognized that this need can not be met so long as the war continues, but it must be borne in mind that the work of the Law School can not continue to develop along the lines desired, or even be maintained with existing standards without more adequate physical equipment.

Minnesota Law Review.—Without doubt the establishment of the *Minnesota Law Review* in 1916 was the most important forward step in the progress of this Law School toward the goal that we seek. This journal has now completed its second year with a degree of success that must be gratifying to all of those who desire to see the University a real and living influence in the life of the state. The *Law Review,* thanks to the untiring energy and marked business ability of Professor Paige, has been self-sustaining from the very beginning, and there has been no necessity for calling upon the large number of influential alumni and prominent lawyers who agreed to guarantee its deficits for the period of three years. It has proved valuable to the legal profession in the state, and an invaluable aid in stimulating an interest in scholarly research and writing among the students.

Statistics of scholarship.—The figures given in the tables below will have comparatively little value in comparison with those of previous years because of the disturbing influence of war conditions. They are compiled, however, as affording interesting information as to the effect of war upon the work of such a professional school as this. In order to make the figures comparable with those of preceding years it has been necessary to make some rather violent assumptions due to special faculty regulations growing out of the selective draft law. Thus, all students who, under a special University rule, received credit and definite grades for the semester's work upon entering military service within four weeks before the end of the semester have been numbered among those taking examinations.

TABLE II. SCHOLARSHIP STATISTICS

	First Year		Second Year		Third Year	
	1st sem.	2nd sem.	1st sem.	2nd sem.	1st sem.	2nd sem.
1. Total enrollment	65	37	42	23	26	22
2. Number taking examinations	43	35	27	17	24	19
3. Number passing all examinations	22	24	19	11	21	18
4. Number delinquent in one subject only	6	7	3	3	3	1
5. Number delinquent in three or more subjects	11	1	5	1	0	0
6. Percentage of conditions and failures to total examinations	24	9	16	13	2	2
7. Percentage of successful students to total enrollment	33	63	45	47	80	81

TABLE III. PRELIMINARY TRAINING AND SCHOLARSHIP
(First Year Class)

	Regular				Special	
	Academic seniors and graduates		Having two years of college		Less than two years of college	
	1st sem.	2nd sem.	1st sem.	2nd sem.	1st sem.	2nd sem.
1. Total enrollment	17	12	24	14	24	11
2. Number taking examinations	12	13	16	13	15	9
3. Number passing all examinations	9	11	8	8	5	5
4. Number delinquent in three or more subjects	0	0	4	0	7	1
5. Percentage of failures and conditions to examinations taken	5	4	29	7	40	20
6. Percentage of successful students to total enrollment	53	91	33	57	20	45

TABLE IV. CONDITIONS, FAILURES, AND INCOMPLETES

	Regular students	Special students	Total
First semester			85
Incompletes	0	0	0
Conditions	32	31	63
Failures	14	8	22
Second semester			45
Incompletes	0	9	9
Conditions	11	10	21
Failures	8	7	15

In conclusion.—Finally I may add that the power of the Law School has gone to war and rightly so. During the pendency of the war the effort must be earnestly made to maintain the teaching organization as far as circumstances will permit, to keep good the traditions of faithful work and sound scholarship, to sustain the life of the *Minnesota Law Review,* and to keep the Law School ready for the flood of students who will return from service after the war to enter the professional schools of the United States. Returning as men of experience and power, they will expect instruction of a character distinctly superior to that with which less mature and experienced students have been contented.

Respectfully submitted,

W. R. Vance, *Dean*

THE MEDICAL SCHOOL

To the President of the University:

SIR: I beg to submit the annual report of the Medical School and its allied interests, the University Hospital, the School for Nurses, the Naval Hospital Training School, and the School of Embalming, for the school year ending July 31, 1918:

THE MEDICAL SCHOOL

Death loss.—The School has recorded during the year the death of Dr. Frank C. Todd, Chief of the Department of Ophthalmology and Oto-Laryngology. The University suffers a large loss in the passing of Dr. Todd. As student, alumnus, teacher, and clinician he was a man of rare merit. He rendered to the University a very large service. His brief career as a member of the staff and ultimately as Commanding Officer of the Base Hospital at Camp Dodge, Iowa, was the ripe fruitage of his years of training and experience. His death in the military service has conferred upon his memory peculiar and merited distinction.

Resignations.—While the demands of the country have made heavy calls upon the teaching staff of the Medical School, they have led to but one resignation, that of Dr. Martin B. Chittick, Instructor in Pharmacology.

Promotions.—The shifting of the teaching personnel of the School into the various fields of war service has given opportunity for the deserved promotion of an unusual number of Faculty members. These have been for the most part from the grade of Assistants to that of Instructors, to which 15 promotions have been made. Nine Instructors have been advanced to Assistant Professors, and 3 to the rank of Associate Professors. Special note should be made of the return to a teaching position of Dr. John T. Christison, who retired to an Emeritus Professorship some years ago. He has responded to a call to war service in again giving to the School his exceptional gifts as a teacher.

New appointments.—Dr. Grete Egerer has been made an Assistant Professor of Medical Chemistry and Dr. Charles D. Freeman has resumed his former place in the Medical School with the title of Assistant Professor of Dermatology.

Instructorships have been given to Drs. Paul D. Berrisford, Ralph E. Morris, William E. Patterson, John A. Pratt, T. A. Peppard, Charles E. Smith, and Miss Mildred Ziegler.

The principle of full-time or practically full-time clinical professorships has been further recognized by the appointments for such service of Drs. J. P. Sedgwick and J. C. Litzenberg; the one in charge of the Department of Pediatrics and the other of the Department of Obstetrics.

Medical war service.—It may be fairly said that the Medical School is being conducted by a war Faculty. Fifty-seven of its members are in military or naval service. Twenty-seven of them are in the University

of Minnesota Base Hospital No. 26. Its teaching force has been thus reduced to the lowest possible limit for the maintenance of efficient teaching. The burden of work for those who remain is necessarily very heavy. Substitutive appointments for absentees' positions have been made so far as possible, but these for the most part are drawn from the junior ranks. The Medical School differs from other units of the University group in that its Faculty has been seriously diminished, while the total number of its students has increased.

Registration.—For the year 1917-18, 296 students were enrolled in the Medical School and 87 in the School for Nurses.

The limited registration system has been in its second year of trial. Under it, 137 applicants sought admission. Thirty, a significantly large number, withdrew their applications when it was announced that first-year medical men of this registration would not be eligible for the Medical Enlisted Reserve Corps. Seven of these withdrawing students are known to have entered military service; the remainder are unaccounted for. Of the total number of applications received, 83 students were accepted and 24 were rejected. A few of the accepted men were drafted, nevertheless, into the service. Later it was decided that first-year medical students might join the Reserve Corps.

The M. E. R. C.—The medical student body has made a remarkable response to the invitation for enlistment in the Medical Enlisted Reserve Corps, 245 men having entered the Army Corps and 3 the corresponding corps in the Navy.

Degrees.—In view of the difficulty of maintaining hospital internships in the face of invitations to military or naval service, and the necessity of recognizing the completed years of medical study of those who do enlist, the University has adopted the degree of Bachelor of Medicine for the period of the war. This degree is conferred upon senior students who have completed four full years of medical study, while the degree of Doctor of Medicine is reserved for those who complete a year's internship in an approved hospital. In June, 1918, the degree of M.B. was conferred upon 41 seniors, and the degree of M.D. upon 33 students who had completed the hospital year.

War service.—The call to immediate service has been too imperative to permit all of our graduates to accept the internship. Twelve seniors, 2 sophomores, and 2 freshmen have enlisted in the University of Minnesota Base Hospital No. 26, and 11 seniors have accepted commissions in the United States Navy.

The Out-patient Service.—The University Dispensary continues its steady growth and threatens again to become too large alike for its present staff and its present quarters. During the school year, 16,584 new patients have been admitted who have made 59,503 visits to the clinics. A much needed reëquipment of the several divisions is being made.

The control of venereal diseases.—With the progress of the war the problem of the control of venereal diseases has become an increasingly urgent one. The Medical School, coöperating with the State Board of Health and the Minnesota Social Hygiene Commission, has taken up a

share of this burden, providing 10 hospital beds and a night as well as day service of its clinics in this field.

The library.—The usual growth of the medical library has been accelerated by two substantial gifts of books during the current year; the one from the library of the late Dr. Burnside Foster and the other an addition to the already large collection donated to the University by Dr. J. E. Moore.

Graduate work in medicine.—Fourteen Teaching Fellows have been appointed in the several departments and 18 additional graduate students have undertaken majors or minors in medical branches. The call to war service has made special demand upon students of these groups.

Social Service Department.—During the year: 825 families have been visited, with a total of 1,322 visits; 1,713 letters have been written in the interest of patients; 964 reports have been made to coöperating agencies; 362 babies have been referred to the Minneapolis Infant Welfare Society, and 15 babies to the St. Paul Baby Welfare Society; 424 pamphlets upon pre-natal care and 331 pamphlets upon infant care have been sent to mothers.

The School of Embalming.—The session of the School of Embalming covered a period of eight weeks in January and February. The registration in the School suffered heavily in consequence of war conditions; only 19 students being registered, of whom 15 received certificates of satisfactory completion of their studies.

The Naval Hospital Corps Training School.—An opportunity for war service has been offered by the United States Navy in the training of groups of Naval Hospital Corps men, who receive four months of intensive training in the Medical School and the University Hospital. Three groups of 100 students each have been registered since September, 1917. The training school is in charge of Miss Marion L. Vannier, who has done devoted service in directing it. Appreciative testimony has been given by the Surgeon General of the United States Navy and by the commanding officer of the Dunwoody Institute to the efficiency of the training given to the Naval Hospital Corps.

The reports of the Hospital and Training School are appended.

Respectfully submitted,

E. P. LYON, *Dean*

THE UNIVERSITY HOSPITAL

Following is a summarized report of the University Hospital for the year ending July 31, 1918:

HOSPITAL

	1915-16	1916-17	1917-18
Patients in Hospital, beginning of period, August 1	138	163	159
Patients admitted during year	2,216	2,627	2,754
Patients treated during year	2,354	2,790	2,913
Total days hospital care	55,266	59,130	58,765
Average days per patient	25	21+	20+
Highest daily census	181	183	181
Daily average number patients	151	162	161
Daily average cost per patient	1.439	1.467	1.63
Daily cost per capita for provisions for all persons supported	.239	.269	.323

OUT-PATIENT DEPARTMENT

	1915-16	1916-17	1917-18
New patients treated	12,325	15,860	16,584
Total patients' visits made	45,251	55,997	59,503
Average visits per day	151.37	184.80	196.37
Average cost per patient's visit, gross	.259	.277	.34
Average cost per patient's visit, net (after deducting receipts)	.095	.057	.105
Total prescriptions issued			
Drug	18,324	21,604	23,690
Optical	893	1,344	1,271

The staff of the University Hospital has been depleted during the past year as has every other part of the University. The loss of the Medical Superintendent, 10 members of the medical staff and 7 of the graduate nursing staff in war service, has made the work of the Hospital much more difficult, but we feel that the spirit with which those who are left have taken up the work has resulted in no deterioration of the quality of the work done.

While the daily average of patients has remained practically the same, 127 more patients were admitted than during the previous year.

During the summer an agreement was reached between the departments of Pediatrics and Surgery by which the surgical children should be admitted to Pediatrics and referred to the surgical service for operation. I am convinced that this not only results in better treatment for the children, but it greatly enhances the value of our pediatric training for the nurses.

It has been necessary in some measure to reduce our staff of graduate nurses. One graduate supervisor had charge of two surgical floors, and the graduate on one of our medical floors was dispensed with, senior nurses supervising under the direction of the Instructor.

Owing to the greatly increased cost of all supplies, including food, the daily per capita cost has been increased .163. Of this, .054 is accounted for by increase in price of food.

The out-patient staff has also been depleted. The new patients treated show an increase of 724 over the previous year. The total of patients' visits made shows an increase of 3,506. The gross average cost per patient's visit shows an increase of .063.

Owing to the unsettled condition of affairs I feel it is unnecessary to make recommendations for the coming year.

Your attention is called to the attached report of the Superintendent of the School for Nurses.

Respectfully submitted,
LOUISE M. POWELL, *Acting Superintendent*

THE SCHOOL FOR NURSES

The report of the Superintendent for the year ending July 31, 1918, is as follows:

Applications received	74
Student nurses matriculated	31
Student nurses withdrawn or dropped (preliminary)	2
Student nurses withdrawn or dropped (undergraduates)	5
Students graduated	14
Accredited nurses accepted	17
Certificates to accredited nurses	14

Nursing Staff in Hospital and Out-Patient Department

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 Floors	1
Out-Patient Department	3
Student nurses	
Seniors	16
Intermediates	22
Juniors	24
Accredited	7

The health of the nurses has been very good. There have been two major operations and six operations for the removal of tonsils. Including these, the total number of days of illness has been 358 during the year.

In January, owing to the fact that the Medical Superintendent of the Hospital went into service, the Superintendent of the Training School took over his duties in addition to her own. This, with the fact that almost the whole time of the Assistant Superintendent of the School

was devoted to the supervision and instruction of the U. S. Navy Hospital Corps men, made it necessary to add an Instructor to the staff. By an unusual piece of good fortune we were able to secure Miss Elizabeth Pierce, a former instructor.

The students and graduates have rendered valuable assistance to Miss Vannier in the teaching and supervising of the Corps men. This has proved a valuable training for the nurses. The equipping of a teaching laboratory for dietetics in Millard Hall and the use of a ward as a demonstration room for practical nursing, both of which were necessary because of the large groups of Corps men, have incidentally been of great value in the teaching of our increased classes of nurses. In November an affiliation was formed with Glen Lake Sanatorium for Tuberculosis. Two nurses are detailed for a period of two months' time to this service, and it has proved a valuable addition to the course.

Respectfully submitted,

LOUISE M. POWELL, *Superintendent*

THE COLLEGE OF DENTISTRY

To the President of the University:

SIR: I herewith submit my report as Dean of the College of Dentistry for the year 1917-18.

The center of interest in any college report for the year 1917-18 lies in the adjustment of the institution to a condition of war, and the manner in which it has met the needs of the Government.

Minnesota has the distinction of giving a course in first-aid dentistry to 100 Naval Hospital Corps men every four months. From time to time groups of enlisted men are treated in the infirmary. The number of such cases runs into the thousands.

In June, 1918, the following 6 Faculty members were in active service: W. McDougall, E. E. MacGibbon, P. S. Parker, R. E. Ramaker, C. O. Flagstad, R. R. Henry. The following 12 were in the Dental Reserve Corps: G. W. Reynolds, A. W. Delton, J. M. Little, Charles Wiethoff, Clarence Hermann, L. A. Harker, W. A. Roll, H. C. Nelson, V. T. Nylander, H. J. Leonard, B. G. Anderson, H. Holliday. The majority of the class of 1917 were commissioned in the Dental Reserve Corps and most of them are on active duty in this country or overseas. Dental students of military age were placed by the Government in the Enlisted Medical Reserve Corps, and allowed to carry on their education. Thus the members of the class of 1918 are now nearly all in active service.

Steps have been taken toward the establishment of regular extension courses. The course for 1917-18 embraced a week of lectures and clinical work. Interest focussed on minor oral surgery, for which there is an especial need in army dentistry.

A graduate course to begin 1918-19, under the direction of the Graduate School has been formulated.

The year has marked the perfection of the four-year curriculum and the definite announcement of a future five-year course, to include a predental year.

Publications have been issued by the following Faculty men and advanced students: T. B. Hartzell, L. M. Hendricks, M. R. Herrmann, Houghton Holliday, W. P. Larson, F. N. Orton, Alfred Owre.

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 1917-18.

Registration.—The total registration during the year was 71, distributed as follows:

Seniors	15
Juniors	13
Sophomores	17
Freshmen	20
First-year	6
Total	71

Geographical distribution of students.—The above students were registered from Minnesota counties as follows:

Crow Wing	2	Ramsey	11
Douglas	1	Saint Louis	9
Hennepin	32	Stearns	2
Jackson	1	Swift	1
Marshall	1	Washington	3

Students registered also from outside the state as follows:

China	4
Michigan	1
North Dakota	2
Pennsylvania	1

Withdrawals.—During the year, 14 students withdrew. These students were distributed by classes as follows:

Seniors	1
Juniors	4
Sophomores	3
Freshmen	3
First-year	3

Withdrawals in each case were due to the fact that the student entered military service, either under the terms of the selective draft or by enlistment.

The Faculty.—Owing to the demand for technical men in professional work, resignations were received from Mr. E. W. Davis, Instructor in Mine Plant and Mechanics, Mr. John F. Murphy, Professor of Mining, and Mr. Ervin W. McCullough, Instructor in Metallurgy. Mr. T. M. Bains, a graduate of the University of Columbia School of Mines, was appointed Assistant Professor of Mining and placed in charge of all mining work. Mr. Elwyn L. Smith, a graduate of the South Dakota School of Mines, was appointed Instructor in Metallurgy; and Mr. Anders J. Carlson, a graduate of the University of Minnesota College of Engineering, was appointed Instructor in Mine Plant and Mechanics. In order

to meet the increased demand for instruction in metallography, Mr. Francis B. Foley, who was formerly with the Midvale Steel Company, was appointed Assistant in Metallography.

Curriculum.—The changes in the Faculty necessitated adjustments in the subjects offered during the year, but the curriculum as a whole remained unchanged.

State Mining Experiment Station.—During the period of this report, 231 samples were submitted for testing by citizens of the state. Seventy-two of these samples required only sight examinations or simple tests for their identification. Other small samples required 153 determinations. Sixteen large-size concentration tests were made for 7 mining companies. The total number of assays for the year, including those made for the Bureau of Mines, was 10,012.

In addition to the above work, hydro-metallurgical tests were made on Cuyuna manganiferous ores. The results obtained, while fairly satisfactory, indicated the necessity of further investigation. Twenty-three tests were made in the magnetization of low-grade, hematite ores and subsequent magnetic concentration. The results were encouraging, but a larger number of tests must be made before any details can be made public.

Early in the year, Mr. Edmund Newton resigned his position as Metallurgist in charge of the School of Mines Experiment Station and accepted the position of Superintendent of the Lake Superior Station of the Bureau of Mines. Mr. Henry H. Wade, a graduate of the University of Minnesota School of Mines, was appointed Metallurgist to fill the position made vacant by Mr. Newton's resignation.

Late in the year, the School of Mines Experiment Station *Bulletin* no. 5 on, "The Manganiferous Iron Ores of the Cuyuna District," by Edmund Newton, was completed and published. The bulletin, consisting of 126 pages, contains a large map of the Cuyuna Range district and a very complete table of blast-furnace calculations for the production of ferro-alloys. The subject-matter covers the geology of the Cuyuna manganiferous iron ores, mining conditions on the Cuyuna Range, the possibilities of beneficiating the ores so that they may meet the requirements of modern, blast-furnace practice, and the economic conditions involved in the commercial utilization of the ores. Requests for copies of this bulletin have been numerous on account of the fact that it deals with an important Minnesota deposit and is related to one of the great war problems.

The United States Bureau of Mines.—During July, 1917, the Department of the Interior announced the establishment of a Bureau of Mines Experiment Station at Minneapolis, Minnesota. It is known as the Lake Superior Mining Experiment Station of the Bureau of Mines. This station is located on the campus of the University of Minnesota and works in coöperation with the School of Mines Experiment Station.

In view of the fact that the State Legislature failed to make an appropriation for the construction of a suitably equipped building, the

Bureau Station is separately housed in a small, frame structure built as an addition to the Ore-Testing Building. It is hoped that a suitably equipped building will be provided by the coming Legislature, as the present building and equipment are wholly inadequate for carrying on the important work outlined by the Bureau of Mines and the State Mining Experiment Station.

Mr. Edmund Newton, former Metallurgist of the State Station, was appointed first Superintendent of the Lake Superior Station of the Bureau of Mines. Associated with him were Mr. James T. Norton, Ore-Dressing Engineer, Mr. C. E. Plummer, Chief Analyst, Mr. Alexander L. Field, and Mr. P. H. Royster, Physical Chemists, Mr. H. E. Meyer, Chief Clerk, and Mr. F. E. Button, Stenographer.

The purpose of the Bureau of Mines Station is to investigate mining and metallurgical problems of the Lake Superior District (Minnesota, Michigan, and Wisconsin) and iron-ore problems of the entire country. On account of the war importance of manganese, and owing to the experimental work already undertaken by the School of Mines Experiment Station, the Bureau of Mines decided to specialize on manganese problems. Manganese ores from various parts of the United States were submitted to the Lake Superior Station for testing by 68 consignees. Some of these consignments consisted of several different samples and were tested separately, making in all 145 samples. Eighty-nine of these samples were small and required only assay or simple hand tests, while the remaining 56 samples were larger and required more extensive treatment. The analytical work on these 145 samples involved the making of 4,142 determinations. Besides the analytical work, 56 large samples necessitated making 81 screen analyses, 23 classification tests, 85 table tests, 4 log-washing tests, 4 jigging tests, 39 flotation tests, and 1 magnetic separation test.

The results of this coöperative work may appear later in a joint publication. Under the guidance of Mr. Edmund Newton, Superintendent of the Lake Superior Station, the first year of coöperative work was successfully brought to a close. The future years carry untold possibilities for the conservation and development of the remarkable mineral deposits of the Lake Superior Region.

State Tax Commission.—The School of Mines still continues its service to the 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.

In June, 1909, the School of Mines began work for the Tax Commission in the capacity of a consulting mining engineer. From June, 1909, to September 1, 1918, we have furnished technical information and reports on mineral properties whenever requested by the Tax Commission, and have checked and reported 2,190,887,908 tons of merchantable iron ore and manganiferous ore on the Vermilion, Mesabi, and Cuyuna Ranges. In addition, we have furnished information and reports on a number of

non-mineral properties and estimated a considerable tonnage of non-merchantable ore material.

Since September 1, 1916, we have reported on 199 properties, 85 of which showed an increase of 159,834,843 tons, 37 a decrease of 20,243,010 tons, and 7 no change in tonnage over that previously estimated. This makes a net increase in merchantable ore of 139,591,833 tons. The remaining 70 properties, which had never been estimated previously, showed a newly estimated tonnage of merchantable ore of 120,037,286 tons. In addition, a large tonnage of ore material which is at present non-merchantable has been estimated and recorded. When requested, technical information on a number of properties where tonnages were not in question, has been furnished the Commission.

It should be noticed that the above tonnages cover properties reported during the two years 1916-18. This is due to the fact that our reports to the Tax Commission are made biennially instead of annually.

Eighteen trips were made to the mining districts of Minnesota, requiring 95 days of field work for 3 men and necessitating traveling 9,872 miles. In addition, 290 days were devoted to office work by 3 men.

The methods of checking and estimating tonnages have been described in detail in our report to the Commission of November 1, 1914. A large amount of field work is essential, and in most cases of operating mines, it is impossible to check intelligently and report on the tonnage of merchantable ore without first making a study of actual mining conditions.

On March 1, 1917, Mr. John F. Murphy, Associate Professor of Mining, took charge of the ore-estimating work, with Mr. Edwin M. Lambert as Assistant. It is to be regretted that Mr. Murphy decided to give up educational work for active field service in his profession. His work has been most satisfactory for the past five years. Mr. Lambert, Associate Professor of Mining Engineering, who has held responsible positions in the School of Mines for the past nine years and who has been associated with Mr. Murphy, has been placed in charge, assisted by Mr. A. J. Carlson, Instructor in Mine Plant and Mechanics.

The officials of the various mining companies have been prompt in furnishing all data and assistance necessary to enable us to check estimates on their respective holdings.

United States Geological Survey.—The coöperative arrangement still continues with the United States Geological Survey. From time to time, we have furnished the Survey with special information, particularly on manganiferous iron ores, but no experimental tests have been made.

Future needs.—Some provision should be made to increase salaries. Technical men in mining and metallurgy are difficult to get, and, once their services are secured, good salaries should be paid to encourage them to remain in educational work. The character of state service work that members of our Faculty are called upon to perform makes it imperative that men of recognized abilities in their profession be permanently retained.

The contract entered into by the Board of Regents of the University of Minnesota and the United States Bureau of Mines provides for housing the Lake Superior Station in a suitable building and equipping it with modern apparatus and machinery. The present Ore-Testing Building is in a very bad condition. Most of the machinery is antiquated and useless. Immediate action should be taken to provide funds for erecting and equipping a new building.

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 1917-18:

Registration.—The College of Pharmacy completed its twenty-sixth year on July 31, 1918. The University commencement on June 20 was the twenty-fifth of the College. Eight students graduated from the course leading to the degree Graduate in Pharmacy (Phm.G.). These graduates constituted the residue of the matriculants in the regular two-year course which was abandoned two years ago. Four students graduated with the degree Pharmaceutical Chemist (Ph.C.). These graduates had already received the Graduate in Pharmacy degree and by faculty agreement were given a course constituting practically the third year of the present regular three-year course. Only one student, Mr. Muyng Sup Lee, was graduated from the regular four-year course with the degree Bachelor of Science in Pharmacy. One student, Mr. Charles H. Rogers, completed the requirement of the sixth year of course leading to the degree Doctor of Science in Pharmacy. The total registration during the year reached 72: 28 first-year students; 1 special first-year student; 22 second-year students; 1 special second-year student; 13 third-year students of the Phm.G. course; 5 third-year students of the Ph.C. course; 1 student in the fourth year of the four-year course; 1 student in the sixth year of the six-year course. The total enrollment of last year was 105, of the year before 105, and of the year preceding that 101. The enrollment in the three or four years previous to the present one constituted about the maximum number of students that can be accommodated in our present Pharmacy Building. The marked decrease in enrollment is of course ascribable to the war. It is worth noting that the enrollment included 28 freshmen. This was a satisfactory number of students in view of the fact that our present minimum course is three years. Eight students left during the year to enter war service. Their names are as follows: Rolf C. Aurness, Ray M. Amberg, Bernard E. Blomquist, Oliver W. Guilbert, William H. Schultz, Arthur Thompson, Clarence O. Ulven, Webster E. Stovall. The following named students discontinued during the year for reasons stated: George N. Gibbs was advised to drop work; Arthur R. McGillivray disliked the work; Esther P. Myers transferred to the College of Science, Literature, and the Arts; Theodore L. Hatch dropped work; C. Walter Folkestad was called home by the death of his father and was not able to return; A. Sanford Herberg and Armenag Vitchenian discontinued at the end of the first semester, the latter for financial reasons. The Faculty gave instruction to a total of 150 students, including 78 medical students. In addition, lectures on medicinal plants were given to high-school students, nurses, botany classes of the Arts College, and to the Navy men taking training on the campus.

Geographical distribution of students.—The student body represented the following political divisions: Korea 1, India 1, Turkey 1, United States 69, distributed among states as follows: Arkansas 1, Minnesota 60, Montana 2, North Dakota 2, South Dakota 1, Wisconsin 3. From Minnesota counties—Anoka 2, Benton 1, Chippewa 1, Chisago 1, Crow Wing 1, Fillmore 1, Goodhue 2, Hennepin 22, Houston 2, Itasca 2, Kanabec 1, Lac qui Parle 1, Morrison 1, Murray 1, Otter Tail 1, Polk 1, Pope 2, Ramsey 4, Redwood 1, Rice 3, St. Louis 2, Sherburne 1, Sibley 1, Steele 2, Waseca 2, Wright 1.

Instruction.—No changes or additions were made in the Faculty. Mr. Alfred M. Hirscher, senior Ph.C. student, was appointed Student Helper in junior Pharmacy and continued through the year. The Pharmacy assistantship vacancy was not filled because of the impossibility, despite the most earnest endeavors, to find the right sort of man. The past year was the second of the minimum three-year course which is now the regular course and which leads to the degree of Pharmaceutical Chemist. The freshman registration for this course reached 28, which under the critical war conditions can be regarded as very satisfactory. No important changes in any of the courses or in the curriculum were made, but the fourth-year subcourse in drug and food analysis was given for the first time in a number of years. Because of the critical times the usual special lectures to the entire student body were omitted. Mr. F. A. Upsher Smith gave a course in pharmaceutical Latin to those members of the freshman class who, altho graduates of recognized high schools, had not had Latin when they entered. The several classes made the usual number of botanical and pharmacognostical trips under the guidance and field instruction of members of the Faculty. The usual educational trips to local drug houses and drug millers were omitted. Because of the large amount of Government work which the College of Pharmacy carried, the instruction relating to medicinal plant cultivation and the harvesting, curing, and preparation of vegetable drugs was increased over that of last year. The entire student body attended, as in former years, the sessions of the Scientific and Practical Section of the Minnesota State Pharmaceutical Association in Minneapolis in February.

Free Dispensary.—A total of 23,690 prescriptions were dispensed during the year as against a total of 21,704 the previous year. As heretofore, practically all of the prescriptions were dispensed by senior Pharmacy students under direction and supervision. On account of the small dispensing classes, the individual members obtained much more dispensing experience than is usually afforded.

Outside activities.—On account of the war conditions, the Faculty could not yield to all of the many demands for outside activities, but nevertheless managed to carry on the usual and expected work, such as identification of medicinal or supposedly medicinal plants; advice and suggestion on medicinal plant culture; formulation and conduct of the proceedings of the Minnesota State Pharmaceutical Association Scientific Section; editing of the *Northwestern Druggist* through its twelve monthly

issues; editing and publishing of the annual proceedings of the Minnesota State Pharmaceutical Association; giving advice upon difficult prescriptions and formulae; presiding at the sixty-fifth annual meeting of the American Pharmaceutical Association at Indianapolis; attendance upon the usual other associational activities; participation as captain and solicitors in the second and third Liberty Loan campaigns; giving about twenty-five lectures to various local and national bodies, including the principal address at a hearing before the Committee on Military Affairs of the House of Representatives at Washington, D. C., March 19, in the matter of the proposed establishment of a pharmaceutical corps in the Army, etc.

Important offices held by Faculty members.—The presidency of the American Pharmaceutical Association (up to September 2, 1917), vice-presidency of the Minnesota Academy of Sciences, secretaryship of the Minnesota State Pharmaceutical Association, secretaryship of the Northwestern Branch of the American Pharmaceutical Association, membership in the Executive Committee of the American Conference of Pharmaceutical Faculties, membership on the Council of the American Pharmaceutical Association and Committee on Publication of the American Pharmaceutical Association, chairmanship of the Scientific Section of the Minnesota State Pharmaceutical Association, chairmanship of or membership in ten important associational committees.

Departmental library.—Because of the times the work of students was so voluminous during the year that the departmental library was not used in a large measure, nor could the seminar work be given the attention it deserves.

War work.—Immediately upon the declaration of the existence of a state of war on April 6, 1917, the members of the Pharmacy Faculty individually offered their services to the Government, and with the approval of the President of the University, I offered the services of the College as an organization and enumerated to the Government the respects in which the College could render service. Soon after, the College was requested to cultivate as much digitalis as possible for the Medical Department of the Army. This was done by decreasing the number of medicinal plants in the medicinal plant garden and utilizing the space thus released for digitalis planting. In addition, about one acre of campus lawn to the south of the Pharmacy Building was planted to digitalis. The crop turned out to be most excellent and was converted into tincture of digitalis, which was standardized physiologically by the Hatcher cat method. We prepared 8,208 8-ounce bottles of the tincture and filled 2,000 gelatine capsules, each containing 3.75 grams of comminuted digitalis, a quantity sufficient to prepare 250 mils of the infusion of digitalis. The tincture and capsules were sent to various Medical Supply Depots designated by the Surgeon General's Office. The University donated the digitalis, but the Government paid for the bottles, corks, labels, shipping cases, etc., and furnished the alcohol. At this writing the Government has asked us to prepare an additional 20,000 bottles of the tincture during

the ensuing year. While we cultivated a large amount of digitalis during the season just closing, it is insufficient to prepare so large a quantity of tincture. Digitalis growing natively in Oregon and Washington has been sent us through the instrumentality of the Surgeon General's Office and will be used in the making of the additional quantity of the tincture.

Respectfully submitted,

FREDERICK J. WULLING, *Dean*

THE SCHOOL OF CHEMISTRY

To the President of the University:

SIR: As Executive Secretary, I present to you herewith a report of the outstanding facts concerning the School of Chemistry for the year ending July 31, 1918.

Administration.—On October 25, Dean Frankforter asked to be relieved of his administrative duties as Dean. His request was granted by the Regents, and the President of the University was asked by them to assume full and immediate responsibility for the administration of the School. On December 11, Mr. W. H. Bussey, Associate Professor of Mathematics in the College of Science, Literature, and the Arts, was appointed Executive Secretary to act as the administrative head of the School under the immediate direction of the President. During the year a committee of the Faculty considered this question: Shall the School of Chemistry be continued as a separate college of the University or shall the university work in chemistry be done by a department in the College of Science, Literature, and the Arts, by a department in the College of Engineering, or by some other form or organization? On recommendation of this committee, the Faculty voted on February 11, 1918, to recommend to the Regents that the School of Chemistry be continued as a separate college in the University. This recommendation was approved by the Board of Regents on March 5, 1918. On June 3, 1918, Professor Lauder W. Jones of the University of Cincinnati was appointed by the Regents as Dean of the School of Chemistry with the understanding that he continue his service in Government research work for the gas defense, and that frequent trips be made to the University of Minnesota in connection with the reorganization and administration of the School of Chemistry. Mr. Bussey was reappointed Executive Secretary to continue as such during the war service of Dean Jones.

The Faculty.—At the beginning of the academic year the Faculty consisted of two Professors, three Associate Professors, one Assistant Professor, nine Instructors and fourteen Assistants. Of this number, Professor Frankforter, Associate Professor Temple, Mr. Baker, Mr. Bliss, Mr. Henderson, Mr. Peck and eight Assistants left during the year to enter Government war service, the first four mentioned being now absent on leave. The others have severed their connection with the University. It was impossible to find adequate substitutes for all of these men; nevertheless, the work of teaching Chemistry was continued throughout the year by means of less experienced substitutes and by the willingness of the other members of the Faculty to carry extra heavy burdens.

During the year Miss Cohen, Mr. Baker, and Mr. Bliss were promoted to be Assistant Professors. Mr. Ward and Associate Professor Derby will not be here for the next academic year, having resigned to go into industrial work.

In addition to the appointment of Dean Jones, there is an outstanding appointment for the year 1918-19, namely that of Dr. M. Cannon Sneed

of the University of Cincinnati as Associate Professor and acting head of the Division of General and Inorganic Chemistry.

Graduate and research work.—The thirteen assistantships mentioned earlier in this report are supposed to be filled by graduate students studying for the M.S. and Ph.D. degrees. The fact that only two of the thirteen originally appointed finished the year, most of them having gone into war work, gives an idea of how heavily the graduate work in Chemistry suffered on account of the war. There has been a great demand for graduate and upperclass undergraduate students in chemistry. They are needed in gas warfare and in the industrial chemistry of munition factories. On this account the number of students actually doing research work for graduate degrees has been small; and the research of members of the Faculty has been very much hindered by the heavy load of teaching which each one has had to carry.

Building.—As indicated in previous reports of the Dean of the School of Chemistry, the building is in an unfinished condition. Part of the building, as planned, has not been built, and in the building as it now stands the plastered walls were never painted. All the plastering is decidedly porous and the fumes from the chemical laboratories penetrate and deteriorate the plaster, metal laths, etc. All the walls should be painted with a good acid-resisting paint.

The ventilating system of the building was never properly completed. Several fans should be installed and there should be remote control for all the fans.

To put the building in first-class condition will take some thousands of dollars. It will probably be necessary to ask the Legislature for a special appropriation for the purpose. I assume that the recently appointed Dean will make specific recommendations on this subject before the next budget is prepared.

Storeroom.—The storeroom, which has consisted of a part of the basement and a part of the sub-basement, has been much enlarged by the addition of the whole northeast corner of the sub-basement. The enlarged storeroom has been made into a general chemical storeroom for the whole University under the management of the Comptroller's Office. The hydraulic lift which was originally planned to carry supplies from the ground level outside the building to the sub-basement has been installed, and the electrification of the dumb-waiter which runs from the storeroom to the three largest laboratories is in progress, and will be ready for use during the next college year. Altho the School of Chemistry has given up all management of the general storeroom, the lecture preparation room and the small stock-rooms in the large laboratories are to continue under the management of the School of Chemistry. In 1918-19 they are to be in charge of Mr. H. H. Barber, who has already been appointed by Dean Jones to organize and administer the stock-room service.

Respectfully submitted,

W. H. BUSSEY, *Executive Secretary*

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 1917-18.

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) unclassed students, chiefly teachers who are engaged in service and who do not yet possess a Bachelor's degree.

The following table shows the registration for the years 1915-16, 1916-17, and 1917-18.

REGISTRATION IN COLLEGE OF EDUCATION

	1915-16	1916-17	1917-18
Juniors	39	47	39
Seniors	41	38	42
Graduates	14	29	25
Unclassed	12	92	111
Total	106	206	217

Registration according to courses.—The total number of registrations in all courses amounted to 1,391, distributed as follows:

	S., L., & A.	EDUCATION	GRADUATE	AGRICULTURE
History of Education	196	19	15	4
The American School	..	..	..	51
Social Aspects	197	72	2	1
Technique of Teaching	188	23	..	..
Practice Teaching	101	27	1	..
Educational Classics	2	1	4	..
Educational Psychology	9	9	8	..
Educational Diagnosis	4	8	10	..
School Curricula	7	2	1	..
School Organization	26	22	2	..
Theory of Supervision	..	11	2	..
Psychology of Learning	6	27	7	..
Educational Administration	2	9	4	..
Methods of Educational Research	..	4	7	..
Mental Diagnosis	..	10	..	..
Mental Tests	3	4	4	..
Junior High School	..	21	4	..
Experimental Education	2	2	10	..
Psycho-Educ. Clinic	3	4	8	..
School Sanitation	12	7	1	..
Industrial Education	20	12	8	..
Training Dept. Methods	..	30	..	..
History of Religious Educ.	3	1	..	..
Seminar Courses	..	8	31	..
Total	781	323	129	56

College of Agriculture	56
College of Science, Literature, and the Arts	781
College of Education	323
Graduate Students	129
Total	1,391

There were approximately 102 registrations in correspondence, extension, and Saturday classes for teachers.

REGISTRATION IN THE UNIVERSITY HIGH SCHOOL

1915-16

	Boys	Girls	Total
Freshmen	24	8	32
Sophomores	21	5	26
Juniors	12	2	14
Seniors	15	11	26
Total	72	26	98

1916-17

	Boys	Girls	Total
Freshmen	29	27	56
Sophomores	20	9	29
Juniors	17	8	25
Seniors	15	11	26
Total	81	55	136

1917-18

	Boys	Girls	Total
Freshmen	40	42	82
Sophomores	11	17	28
Juniors	12	9	21
Seniors	14	12	26
Total	77	80	157

The following resignations were accepted during the year 1917-18:

College of Education: James W. Norman, Instructor; Charles L. Harlan, Instructor.

University High School: Elsie Smithies, Teacher of Latin; George A. McGarvey, Teacher of Manual Training.

Leaves of absence were granted to Dr. M. E. Haggerty, Professor of Educational Psychology, and to Dr. W. S. Miller, Principal of the University High School, to enter war work.

New appointments for the year 1917-18 were as follows:

College of Education: Jean H. Alexander, Instructor; W. E. Johnson, (part time) Instructor; Ruth Raymond, Instructor; Marvin J. Van Wagenen, Assistant Professor; Florence D. Willets, Assistant.

University High School: Marie Denneen, Teacher of Latin; Lynne E. Stockwell, Teacher of Manual Training; Dora V. Smith, Teacher of English; Josephine de Boer, Teacher of French; Katheryn Dieterich,

Teacher of Science; Clifford O. Bemis, (part time Assistant in Mathematics); Joseph Brom, part time Assistant in Science; Mrs. Holliday, Assistant in Science.

Superintendents' and principals' short course.—The College of Education, in conjunction with the State Department of Education, offered at the University during the spring meeting of the Superintendents' Section of the Minnesota Educational Association, March 27 to March 30, a fifth annual short course for city and county superintendents, and high-school and graded-school principals. Addresses were delivered by Dr. Peter Sandiford, Professor of Education of the University of Toronto; and Professor Henry J. Johnson, Teachers College, Columbia University.

Conference of teachers of secondary subjects.—The third annual conference of teachers of secondary subjects was held at the College of Education, March 26 and 27, 1918. This year representatives of English, history, home economics, and mathematics were present. The general purpose of these conferences is to devise problems for coöperative work. Committees were appointed whose business it is to arrange definitely for specific problems upon which the teachers of the state are to work during the year 1918-19.

Bureau of Coöperative Research.—At the beginning of the year a bulletin was sent out to the high-school teachers of English proposing a plan for measuring the growth in ability to write English composition. Four groups of 12 topics were planned, from which the teachers could select one, two, or three groups. About 100 teachers selected one group of topics and had the pupils write on one topic each week in the order given, during the fall semester. The compositions were graded by the teachers with the Harvard-Newton Scale, and the report of the results, together with the compositions, were sent to the Bureau of Coöperative Research.

At the spring meeting of the English Teachers Association a series of tentative reports, based upon the ratings made by the teachers, were presented.

During the summer about 2,000 compositions were selected from the total number sent in, and graded by three different people competent to rate English composition by the Thorndike Extension of the Hillegas Scale. A report based upon these ratings and showing tentative standards of achievement in English composition for the various classes of the high school, as well as the amount of overlapping of classes, will soon be ready for printing and distribution to the teachers of English in the Minnesota high schools.

Handicraft Guild School of Normal Art.—On December 11, 1918, the Regents of the University of Minnesota voted to take over the Handicraft Guild which has been operating as an independent institution in the city of Minneapolis, and to place it in charge of the College of Education of the University of Minnesota as the Department of Art Education, with the understanding that the Guild would be financed during the years 1917-18 and 1918-19 from its tuition fees and by the Civic and Commerce

Association of Minneapolis. On April 7 the Executive Faculty of the College of Education approved a program leading to a Bachelor's degree in the College of Education. This curriculum will be open, beginning with the freshman year, to students in the University of Minnesota, and the students will be registrants in the College of Education.

Graduate registration.—In 1916-17 there were 29 graduate students, and in 1917-18 25 graduate students in the College of Education. The work of these students was very greatly hampered because of the lack of adequate library facilities. The University Library has never been able to provide a seminar room for graduate students in Education. It would seem in view of the number of students carrying graduate work in this field that more satisfactory facilities should be provided. The graduate registration in Education is larger than that of any other department of the University with the exception of Surgery. The only facilities that these students have had has been a seminar room in the College of Education building, but no librarian is provided for this room and only a fraction of the books needed by such students is available for them.

Bi-weekly conference.—It has been the custom of the Dean to hold a bi-weekly conference for the members of the Faculty and graduate students in Education. This conference is attended not only by the members of the Faculty of the Department of Education on this campus, but by the Department of Agricultural Education and Home Economics Education on the other campus. This year the discussions were devoted entirely to the effect of the war upon public education.

The College of Education a professional school.—Two years ago the Regents adopted certain resolutions providing for the organization of the College of Education as a professional school. For the purpose of reaffirming the principles adopted by the Board of Regents, June 6, 1916, and for their interpretation and successful administration, the President of the University, the Dean of the Department of Agriculture, the Dean of the College of Science, Literature, and the Arts, and the Dean of the College of Education agreed that hereafter they would lend their energy and support to the following propositions:

1. That the Faculty of the College of Education shall consist each year of the following persons:
   a. President of the University;
   b. The faculties of the various departments;
   c. The instructors in other departments or schools of the University who give teachers' courses;
   d. One representative from each academic department whose subject is a secondary school subject;
      NOTE.—The representative may be recommended by the department, but the appointment must be approved by the Dean of the College of Education and the President of the University.
   e. Other persons whose departments represent a distinct division of work important to the preparation of secondary school teachers but whose subject is not a secondary school subject may, upon recommendation of the Dean of the College of Education and the President of the University, be made members of the Faculty of the College of Education.

2. That the Faculty of the College of Education shall have the powers and duties usually ascribed to the faculties of other professional schools.

3. That the College of Education shall be organized by departments and curricula.

4. That beginning with the year 1919-20 students entering the junior year expecting to receive a teacher's certificate from the University shall be registrants in the College of Education. The Faculty of the College of Education shall be empowered to make such rules as shall be necessary to govern the registration of those students who apply for admission to the College of Education after the beginning of their junior year.

5. That the financing of each of the departments of education shall be budgeted by the College of Education but when members of the departments have duties or work in any other unit of the University the budget shall reflect approximately the distribution of duties and responsibilities; but in each case the division of duties and responsibilities shall be arranged for and agreed to by the Dean of the College of Education and the Dean of the other college concerned. In such cases the members of the departmental staffs may be made members of those other faculties in which they have duties and responsibilities.

In conformity with the foregoing the following statement was published in the bulletin of the College of Science, Literature, and the Arts and the bulletin of the College of Education for the year 1918-19:

"Beginning with the year 1919-20 students entering the junior class expecting to receive the teacher's certificate from the University of Minnesota shall be registrants in the College of Education."

In further agreement with the foregoing principles the following departments have been organized in the College of Education:

Department of Art Education
Department of Educational Administration and Supervision
Department of Educational Psychology
Department of History and Philosophy of Education
Department of Theory and Practice of Teaching
Department of Trade and Industrial Education
Department of Agricultural Education
Department of Home Economics Education.

Smith-Hughes Bill.—A federal act known as the Smith-Hughes Bill provides for a federal appropriation for the training of teachers of home economics, in agriculture and in trade and industrial education, each federal dollar to be matched by a state dollar. The State Board of Education of Minnesota has designated the University of Minnesota as the agency for the training of these three classes of teachers. Courses have been arranged and faculties employed subject to the approval of the State Board of Education.

The State Board, in carrying out its function and supervising this work throughout the state, has secured Mr. G. A. McGarvey, formerly manual training teacher in the University High School as supervisor of trade and industrial education, Mr. Bueford Gile in the Department of Agricultural Education as supervisor of agricultural education and Miss Mildred Weigley, Chief of the Division of Home Economics and Head of the Department of Home Economics Education, has been loaned to the State Board to assist in supervising this work throughout the state.

Committee on Appointments.—The statistical features of this report were prepared by Mr. R. H. Boothroyd, secretary of the Committee.

A comparison of this report with the reports of previous years shows that the business increased 46 per cent in 1917 over 1916, and 196 per cent in 1918 over 1917. The work of the Committee is still handicapped because of the failure of students to make wise combinations in their majors and minors. This is due partly to the fact that the students are advised by members of faculties other than the Faculty of the College of Education. We confidently expect that this situation will be changed materially in the interests of the students when all students intending to become teachers are registered in the College of Education.

One of the chief excuses for the existence of this Committee is a desire on the part of the University to coöperate with public-school authorities of the state and to provide them with teachers whose combinations correspond with the combinations required in public-school work. Naturally the Committee is unable to serve satisfactorily these teachers whose combinations are in Norse and Botany, when but five places in the state call for a teacher of Norse and only one of these has one class that recites every day. Other combinations quite as bad could be cited. The result is that many of our candidates are compelled to teach subjects for which they have little preparation.

The success of this work naturally depends in the long run upon the secretary. The secretary should know the different communities of the state, the superintendents of the state, and the candidates enrolled with the Committee, if he is to make recommendations intelligently. This can not be done effectively year after year if the secretary is changed year after year as is now the custom. For this reason it is our opinion that there should be appointed a permanent secretary for this work. He could devote part of his time the first semester to teaching, but the second semester and the summer should be devoted entirely to the work of the Committee. He should be in a position to advise prospective teachers at the beginning of their university course as to fields of preparation. We should then avoid having so many teachers graduated from the University with combinations of subjects which are seldom or never asked for.

The business transacted by the Committee also justifies the appointment of a permanent secretary. In 1916-17 we did $43,623 worth of business; that is, the positions filled through the efforts of this Committee paid salaries totaling that amount. This year we did $73,532.50 worth of business. A fair objective measure of the Committee's services is the commission that would have been charged by commercial agencies. In round numbers a commercial agency would have charged $3,700 for this service. The University appropriates only $300 for the salary of the secretary. This, of course, does not cover the cost of the Committee. I have always been compelled to furnish stationery, printing, and stenographic help. I estimate that the Appointments Committee costs my office in the neighborhood of $300 a year. I have felt, however, that this is a good investment for the University, but viewing it simply as an investment, its value could be greatly increased if we put the Committee on a more permanent basis. That school superintendents find a new secretary

in charge every year when they return to the University is not calculated to inspire confidence. Moreover, the University of Minnesota apparently has not appreciated the importance of this matter as some other universities have. Before Dr. W. S. Miller was brought to the University of Minnesota as Principal of the University High School, he was Secretary of the Appointments Committee at the University of Illinois where he was paid a salary of $2,100 or $2,200 for his work. Iowa now has three clerks and stenographers devoting practically full time to this work. There are few things we could do that would inspire confidence and respect on the part of the school people of the state more than to establish a thoroly efficient appointments office at this University.

The Committee for the year 1917-18 was composed of the following members: W. S. Miller, chairman, L. D. Coffman, A. C. Krey, W. E. Brooke, and A. V. Storm. I suggest that the Committee for the year 1918-19 be as follows: W. D. Reeve, chairman, in place of W. S. Miller; Mr. F. H. Swift, in place of L. D. Coffman; A. C. Krey, W. E. Brooke, and A. V. Storm.

TABLE I. SUMMARY OF POSITIONS REPORTED

	Frequency	Percentage of total
Teachers in rural school	1	0.09
Teachers in grades	142	12.7
Teachers in high school	764	68.33
Teachers in normal school	22	1.96
Teachers in college or university	44	3.94
Principals in junior high school	1	0.09
Principals in high school	90	8.05
Principals in grade school	31	2.77
Superintendents of high school system	23	2.05
Total	1,118	99.98

Respectfully submitted,

L. D. COFFMAN, *Dean*

THE GRADUATE SCHOOL

To the President of the University:

SIR: During the past year, Dean Guy Stanton Ford has been absent on leave in connection with the work of the Committee on Public Information in Washington.

The Executive Committee of the Graduate School (appointed annually by the President of the University) for the year 1917-18 is as follows:

Social Sciences and Law.....Cephas D. Allin
Physical Sciences, Mathematics, and Engineering.....Henry A. Erikson
Biological Sciences .....Hal Downey
Philosophy, Psychology, and Education.....Melvin E. Haggerty*
Language and Literature.....Everett W. Olmsted
Medicine .....Leonard G. Rowntree
Agriculture .....Edward M. Freeman

* Professor Haggerty left on Government Service and was replaced on the Committee by Fletcher H. Swift.

In spite of the difficulties arising from the withdrawal of numerous Faculty members and graduate students to various fields of activity in connection with the war, the Graduate School has had a fairly successful year. The statistics showing the registration of students and the distribution of the work are as follows:

REGISTRATION 1913-18

Year	Graduate study	Master	Doctor	Men	Women	Totals
1913	52	103	28	114	69	183
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

GRADUATE STUDENTS DOING FULL OR PART TIME WORK

	Full time	Part time	Total
Men	130	111	241
Women	47	88	135
Total.....	177	199	376

DISTRIBUTION ACCORDING TO YEARS OF GRADUATE WORK

First year	Second year	Third year	Fourth year and over
243	105	21	7

MEMBERS OF STAFF REGISTERED IN GRADUATE SCHOOL

	Men	Women	Total
Instructors doing graduate work*	25	12	37
Graduate students serving as assistants	29	7	36
Graduate students holding scholarships	11	12	23
Teaching fellows	24	6	30
Fellows (Mayo Foundation)	68	11	79

* Including 5 Assistant Professors and 3 Associate Professors.

GRADUATE STUDENTS MAJORING IN THE VARIOUS DEPARTMENTS

Department	Men	Women	Total
Agricultural Chemistry	5	1	6
Agricultural Economics	5	..	5
Agricultural Education	4	..	4
Agronomy and Farm Management	6	..	6
Anatomy	9	1	10
Animal Biology	4	2	6
Bacteriology and Pathology	8	8	16
Botany	8	5	13
Chemistry	19	3	22
Comparative Philology	..	4	4
Dairy and Animal Husbandry	3	..	3
Economics	1	..	1
Economic Zoology	..	1	1
Education	32	12	44
Electrical Engineering	1	..	1
English	4	24	28
Entomology	1	..	1
Geology and Mineralogy	4	..	4
German	2	8	10
Greek	1	..	1
History	8	16	24
Horticulture	2	..	2
Latin	1	1	2
Mathematics	..	4	4
Medicine	11	2	13
Obstetrics	2	..	2
Ophthalmology and Oto-Laryngology	7	..	7
Pediatrics	2	..	2
Philosophy	4	..	4
Physics	3	3	6
Physiology and Physical Chemistry	..	3	3
Plant Pathology	5	..	5
Political Science	3	..	3
Psychology	7	4	11
Rhetoric	1	5	6
Roentgenology	1	..	1
Romance	7	8	15
Scandinavian	4	1	5
Sociology	8	10	18
Soils	1	..	1
Structural Engineering	2	..	2
Surgery	52	..	52
Total	248	128	376

EDUCATIONAL INSTITUTIONS REPRESENTED IN GRADUATE SCHOOL

1917-18*

Allahabad	1	New York	1
Allegheny	1	North Carolina	1
Antwerp	1	Northwestern	7
Armour Institute of Technology	1	Oberlin	2
Augsburg	3	Ohio	2
Augustana	6	Ohio Wesleyan	2
Barnard	1	Oregon	1
Beloit	4	Oregon State Agricultural College	1
Bethany	1	Park	1
Boston	2	Pennsylvania	9
Brown	1	Pennsylvania State College	2
Bryn Mawr	1	Pomona	1
Calcutta	1	Puget Sound	1
California	1	Purdue	1
Carleton	5	Radcliffe	3
Catholic University	1	Red Wing	1
Chicago (including 1 Rush)	15	Ripon	1
		Saint Catherine	7
Christiania	1	Saint John's	1
Clark	1	Saint Mary's	1
Clemson	1	Saint Olaf's	4
Colgate	1	Saint Thomas	1
Colorado	3	Santo Domingo	1
Columbia	8	Southern California	1
Cornell	3	South Carolina	2
Cotner	1	South Dakota	4
Creighton	1	South Dakota State College	2
Dakota Wesleyan	2	Stockholm	1
Davidson	2	Syracuse	1
De Pauw	1	Tennessee	1
Earlham	1	Texas	1
Elmira	1	Thiel	1
Emory and Henry	1	Trinity	2
Ft. Wayne	1	Tokio	1
Greenville	1	Toronto	1
Hamline	9	Tulane	1
Harvard	1	Saint Louis	1
Havana	1	Union	1
Huron	1	Utah	1
Idaho	1	Utah Agricultural College	1
Illinois	4	Vanderbilt	1
Illinois Wesleyan	1	Virginia	4
Indiana	7	Wales	1
Iowa	6	Wartburg	2
Iowa State College	2	Washington	2
Iowa, Upper	2	Washington and Jefferson	1
Iowa Wesleyan	1	Washington State College	1
Ireland	1	Wellesley	2
Knox	3	Wells	1
Louisiana	1	West Virginia	1
Lombard	1	Western	1
Luther	2	Whitman	1
Macalester	3	Wisconsin	10
Maine	2	Wittenberg	1
Marquette	1	Wofford	2
Marietta	1	Wooster	1
Massachusetts Agricultural College	1	Worcester	1
Mexico	1	Yale	1
Miami	2		
Michigan	9	Total colleges represented	124
Mississippi	1		
Missouri	5	Minnesota registration	124
Morningside	1	Other colleges	252
Mt. Holyoke	1		
Munich	1	Total registration	376
Nebraska	4		

* 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 GRANTED IN 1918 BY DEPARTMENTS

	Minnesota graduates		Other colleges		Totals		
	Men	Women	Men	Women	Men	Women	Total
Agricultural Economics	1	..	..	..	1	..	1
Agronomy	1	..	..	..	1	..	1
Animal Biology	..	..	..	2	..	2	2
Anatomy	1	..	..	..	1	..	1
Botany	..	1	1	..	1	..	2
Bacteriology	..	..	..	1	..	1	1
Chemistry	..	..	1	..	1	..	1
Education	1	2	1	1	2	3	5
English	..	..	..	2	..	2	2
German	..	..	1	1	1	1	2
Horticulture	..	..	1	..	1	..	1
History	..	1	2	2	2	3	5
Latin	..	..	1	..	1	..	1
Mathematics	..	1	..	..	..	1	1
Physics	..	..	..	1	..	1	1
Plant Pathology	..	..	2	..	2	..	2
Psychology	...	1	1	..	1	1	2
Romance	1	1	1	2	2	3	5
Scandinavian	..	..	2	..	2	..	2
Social Work	..	1	..	..	..	1	1
Sociology	..	..	1	..	1	..	1
Soils	..	..	1	..	1	..	1
Surgery	2	..	3	..	5	..	5
Totals	7	8	19	12	26	20	46

Doctors of Philosophy Conferred in 1918

Herbert Floyd Bergman, B.S. '05, M.S. '15, Minnesota. Major, Botany; Minor, Chemistry. Thesis: *The Relation of Aeration to the Growth and Activity of Swamp Plants and Its Influence on Their Ecesis.*

Guy Richard Bisby, B.S. '12, South Dakota State College; M.A. '17, Columbia. Major, Plant Pathology; Minor, Biochemistry. Thesis: *Studies on Some Fusarium Diseases of Potato and Truck Crops.*

John Dillingham Dodson, B.A. '01, M.A. '08, Harvard. Major, Psychology; Minor, Education. Thesis: *An Experimental Study of the Relative Values of Reward and Punishment in Habit Formation.*

Pedro Henríquez-Ureña, B.L. '01, Santa Domingo, LL.B. '14, National University of Mexico, M.A. '17, Minnesota. Major, Romance (Spanish); Minor, Romance (Italian). Thesis: *La Versificación Irregular en La Poesia Castellana.*

Gwen Ann Jones, B.A. '09, M.A. '14, University of Wales. Major, English; Minor, Romance. Thesis: *Three Welsh Religious Plays.*

Emerson Miller, B.S. '94, M.S. '95, Michigan. Major, Biochemistry; Minor, Chemistry. Thesis: *A Chemical Investigation of the Volatile Oils of Some Species of the Genus Pyonanthemem Michn.*

Clarence Austin Morrow, B.S. '06, Ohio Wesleyan, M.A. '09, Oberlin. Major, Soils; Minor, Biochemistry. Thesis: *The Organic Matter*

of the Soil; a Study of the Nitrogen Distribution in Different Soil Types.

Earl Pettijohn, B.A. '06, B.S. '10, M.S. '12, Minnesota. Major, Chemistry; Minor, Physics. Thesis: *Studies in Adsorption.*

Clayton Ord Rost, B.S. '11, M.A, '12. Nebraska. Major, Soils; Minor, Geology. Thesis: *Parallelism of Soils Developed on the Gray Drifts of Minnesota.*

Waldemar Markovitch Sternberg, B.S. in Chemical Eng. '08, Petrograd, Russia. Major, Physical Chemistry; Minor, Analytical Chemistry. Thesis: *Equilibria in Systems Containing Paraldehyde, Salts, and Water.*

Guy Haines Woollett, B.S. '10, M.S. '16, Minnesota. Major, Chemistry; Minor, Physics. Thesis: *Further Studies on Catalytic Decompositions of Phenol Salts.*

Shevlin Fellowships

Science, Literature, and the Arts: Gwen Ann Jones, B.A. '09, Bryn Mawr.
Agriculture: John Joseph Wagner, B.S. '17, Minnesota.
Medicine: Martin Daniel Ott, B.A. '13, Missouri.
Chemistry: Seraphim Joseph Reichert, B.A. '15, Miami.

Shevlin Scholarship

Julius Nolte, B.A. '17, Yale.

The Albert Howard Scholarship

Morgan Evan Roberts, B.S. '17, Wisconsin.

The Class of 1890 Scholarship

Dorothy Heinemann, B.A. '16, Minnesota.

Publications.—During the present year the publications of the Graduate School have been placed in charge of an Editorial Board, which consists of five members, including the Dean of the Graduate School as chairman ex officio and, in addition, the University Editor as secretary ex officio. The Editorial Board is appointed annually by the Executive Committee of the Graduate School. The Board for 1917-18 is as follows: Acting Dean C. M. Jackson (chairman), A. B. White, Carleton Brown, J. T. Gerould, Hal Downey, Mary R. Gale (secretary).

It is a source of gratification to record our steady activity in the field of publication in the Research Publications. Since my last report the following have appeared:

Studies in the Social Sciences

Raymond A. Kent, A Study of State Aid to Public Schools in Minnesota.

Studies in the Biological Sciences

Julius V. Hofmann, The Importance of Seed Characteristics in the Natural Reproduction of Coniferous Forests.

Current Problems

William Watts Folwell, Economic Addresses.

In press are the following issues:

Studies in the Social Sciences

Rupert C. Lodge, The Meaning and Function of Simple Modes in the Philosophy of John Locke.

Florence R. Curtis, The Libraries of the American State and National Institutions for Defectives, Dependents, and Delinquents.

Notestein and Relf, *Editors,* Commons Debates for 1629.

Language and Literature

Marie C. Lyle, The Original Identity of the York and Towneley Cycles.

Appropriations for research.—During the past year, allotments from the Research Funds of the Graduate School have been made by the Executive Committee to the following persons for the purposes stated with results as here summarized:

C. M. Jackson, $250 for research assistant on the effect of starvation on suprarenal gland. Work completed and one paper published. Studies to be published in book form.

G. B. Frankforter, $400 for assistant and supplies on research on trench gas problem. Dean Frankforter left for Government work. Funds reverted.

F. W. Springer, $200 for assistant and supplies on research on ignition systems. Experimental work under way, when the two assistants enlisted and went to war.

Hal Downey, $250 for research assistant on vital staining. Experiments completed and summary presented at the Minneapolis meeting of the American Association of Anatomists. One paper published, entitled Further Studies on the Reactions of Blood-and-Tissue Cells to Acid Colloidal Dyes in the *Anatomical Record.*

W. H. Emmons, $400 for assistant on secondary ore concentrations. Experiments carried on in sea water at Woods Hole. Work in progress, to be continued.

E. M. Freeman, $150 for assistant in research in photo-synthates of plants. Experiments made and report to be published.

S. L. Hoyt, $500 for assistant for research metallographic investigations. Work in progress and to be continued next year.

A. D. Hirschfelder, $100 for assistant and supplies in research on chemicals used in prevention of lice in the army. Investigations made and work to be continued.

R. E. Scammon, $165 for assistant and supplies on research on anatomy of the fetus and newborn. Two papers being published and another one ready. Work to be continued next year.

A. F. Moyer, $500 for assistant and apparatus for research on hydraulic engineering. Investigations carried on at the Government Dam. Work in progress and to be continued.

L. W. McKeehan, $300 for assistant in research on diffusion and properties of actinium emanation. Left for Government service in Washington. Fund reverted.

Wm. Moore, $400 for assistant and supplies on research on control of lice on soldiers and horses. Investigations made and results reported to Washington.

F. R. McMillan, $500 for assistant on reinforced concrete tests. Continuation of previous year. Results presented to American Society of Civil Engineers, and also in Professor Duff Abrams' paper on the "Proportioning of Concrete Aggregates" at Chicago. More material will be ready for publication by fall. Work to be continued next year.

White and Krey, $300 for research assistant in history. Work on twelfth- and thirteenth-century English history in progress. Report given at the American Historical Association in December. Work to be continued next year.

M. E. Haggerty, $445 for materials and clerical aid on efficiency of mental tests. Several thousand measurements taken in English composition and report printed. Work still in progress.

W. S. Miller, $75 for materials and clerical aid on mental tests for teachers and pupils. Called to Government service. Fund reverted.

J. F. McClendon, $60 for apparatus and supplies in biochemical research. Left for Government service. Fund reverted.

F. Klaeber, $300 for assistant on philological study of Beowulf. Research completed and work ready for publication.

C. Searles, $300 for assistant on research in French literature of the seventeenth century. Progress satisfactory and work to be continued.

T. B. Hartzell, $200 for supplies in dental infection. Work in progress and to be continued.

F. H. Swift, $500 for assistant on history of public school funds. Satisfactory progress made and work to be continued.

Karl V. Lashley, $200 for apparatus and supplies on research on genetic psychology. Satisfactory progress. Work to be continued.

J. I. Parcel, $250 for expenses to West Virginia of two men in carrying on investigation of secondary stresses in bridges. Test made by F. R. McMillan and J. I. Parcel of the Engineering College. Data being prepared for publication this fall.

J. T. Tate, $300 for assistant in research investigations in physics. Entered Government service and fund reverted.

A. E. Jenks, $375 for assistant in anthropology on research on human hair measurements. Work has progressed satisfactorily. Material to be published. $100 for trip of Mrs. Lillian Turner for materials on human hair measurements on Indian-White amalgamation. Valuable information and materials secured from Wilberforce University and Cincinnati.

F. P. Leavenworth, $50 for trip of Professor Leavenworth and W. O. Beal to Denver to take photographs of the total solar eclipse on June 8. Valuable data secured; to be published.

in R. Allen, $375 for assistant and apparatus for research investigations on heat transmission through building materials. All necessary instruments for conducting the experiments purchased and apparatus constructed. Work to be continued.

Respectfully submitted,

C. M. JACKSON, *Acting Dean*

REPORT OF THE DEAN OF WOMEN

To the President of the University:

SIR: The Dean of Women herewith submits the following report for the year 1917-18.

Registration of women.—During this year there were registered in the University 2,507 different women. The academic distribution is as follows:

Science, Literature, and the Arts	1,381
Engineering and Architecture	4
Agriculture and Home Economics	286
Law	2
Medicine	13
Nurses	87
Dentistry	4
Pharmacy	18
Chemistry	2
Education	160
Graduate	106
Total, regular session	2,063
Duplicates	5
	2,058
During the Summer Session, 1917	449
Total for the year	2,507

The distribution as to residence during the regular session of 1917-18 is as follows:

At home	1,081
With friends or relatives	355
In private families	80
In approved houses	263
In sorority houses	95
In dormitories	90
In coöperative cottages	63
In home management houses	18
In hospital	2
Working for room and board	11
Total	2,058

Self-government.—The activities of the self-government associations have been more varied than heretofore for the reason that there have been so many calls for war service. The Woman's Self-Government Association has maintained a regular Red Cross Auxiliary, with splendid results in the number of knitted articles, in the collection of salvages, in the regular sale of thrift stamps, and in the obtaining of Red Cross pledges. On May 3 to 5, the Fifth Annual Conference of the Middle Western Intercollegiate Association for Women's Self Government was held here, with delegates from nineteen institutions.

The House Council has been successful in its endeavor to maintain uniform rules in the lodging-houses. It was due to the initiative of the House Council that the householders formed an Advisory House Council. The meetings of this Advisory Council have given an opportunity for social diversion, war work, discussion of lodging-house problems, and a study of war-time food problems.

Housing Bureau.—Mrs. Jessie S. Ladd, known to most of the women students as the Director of Shevlin Hall, has been appointed Director of the newly formed Housing Bureau. It is hoped that the young women who can not be accommodated in University houses will find this Bureau particularly helpful in assisting them to secure comfortable lodgings.

Coöperative cottages.—Four coöperative cottages have been successfully maintained. Every place in them has been taken for next year, and many applicants have had to be refused. The success of these houses and the eagerness of young women to live in them indicate that further provision of a similar nature should be made as soon as feasible.

Sanford Hall.—As usual, every room in Sanford Hall has been reserved in advance and several hundred applicants have been refused admission on account of lack of room. It has been thought best to admit to the privileges of the dining-room some of the women who have rooms elsewhere.

Sororities.—The sororities have maintained a high standard of conduct during the past year and have contributed not a little to the success of various war activities. The Pan-Hellenic entertainment given early in the fall resulted in about three hundred dollars, which was given to the Red Cross. Part of this sum was used to establish a surgical dressings station in the basement of Shevlin Hall.

Physical Education.—A report of the activities of the Department of Physical Education is given in detail on pages 178 to 181. The Woman's Athletic Association, in addition to supporting various athletic activities, has had regular charge of the surgical dressings station in the basement of Shevlin Hall.

Loans and scholarships.—The Loan Fund for Women Students of the University has been of great help to needy students. During the year loans amounting to $950 have been made to applicants, and nearly two thirds as much has been repaid. The Woman's Self-Government Association has established an annual scholarship of $100; the St. Paul College Women's Club has granted three scholarships of $150 each, two of which are for freshmen who are graduates of St. Paul high schools; the Minneapolis College Women's Club has awarded a scholarship of $100; the Student Section of the Faculty Women's Club has awarded a scholarship of $100; Mrs. Elbert L. Carpenter and Mrs. George Chase Christian have each given a scholarship of $100.

French visiting scholars.—In accordance with the plan to give free education to a large number of French women students, three French women are to be received into this institution this fall. The Regents have voted to remit their fees and tuition, and their living expenses have been provided for by donations.

Summer Session.—Social conditions during the Summer Session were very delightful, as an unusually earnest and pleasant body of students was enrolled. Social activities were opened by the reception of Dean Coffman and Mrs. Coffman at Shevlin Hall, and by a party given by the Dean of Women in the Home Economics building. There followed weekly evening parties managed by the students, and a series of weekly teas given by Mrs. Ladd and the Dean of Women.

Addresses to women.—Many organizations engaged in war work have been glad to send special speakers to address groups of women students, so that we have had an unusually full program during the past year. These war addresses have been supplemented by numerous addresses on vocational subjects and social problems.

Respectfully submitted,
GERTRUDE HARPER BEGGS, *Dean of Women*

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 1917-18.

The principal student activities dealt with have been the following: Student councils, student publications, finances of official student groups, general social activities, fraternities, discipline, scholarship and absences in the Colleges of Science, Literature, and the Arts, and Education.

Student life and activities have been far from normal this past year, due to war conditions.

Student councils.—In view of war conditions causing a continual changing of personnel of the councils, their work was very unsatisfactory. This changing of personnel made it practically impossible to work on matters calling for continued and sustained effort. This same condition confronts us for the coming year.

Student publications.—The beginning of the year found the publications lacking a portion of their staffs as elected the preceding spring. Therefore, no definite progress had been made looking to their interests for the year. After numerous conferences by all interested parties possible to get together, it was decided that the *Minnesota* and the *Minnehaha Magazines* should be temporarily discontinued as separate publications and that all efforts should be directed to the maintenance of the *Daily* and the *Gopher*. The staffs of these two latter publications had to be reorganized immediately. Shortly after the work was well under way, another reorganization had to be planned and carried out. Notwithstanding these handicaps both publications finished the year in sound financial condition and with the record of a reasonably satisfactory year behind them. The same situation confronts us for the coming year.

Finances.—As stated above, the two publications, the *Daily* and the *Gopher,* finished the year in sound financial condition with respectable balances to their credit.

As in the past, campus organizations engaging in enterprises involving financial profit or loss have been asked to submit statements of financial operations to the Senate Committee on Finance and Audit. This has been done in every case except the Military Ball.

The fraternities are not under the jurisdiction of the Senate Committee with regard to their finances, tho in practically every case, when a fraternity becomes delinquent in meeting its obligations, the matter is brought to the attention of the Chairman of the Committee by the creditor. It is clearly stated in all such cases that the University assumes no responsibility, but will be glad to use its good offices in settling the matter. Such delinquent accounts have rapidly decreased during the last few years, tho this past year has seen some increase, due, undoubtedly, to war conditions.

General social activities.—There has been a decrease in general social activities. The formal and expensive social functions—Junior Ball, Senior

Promenade, and Sophomore Vaudeville—were eliminated and in their places were held informal "get-together" parties, the main idea in each case being the promotion of acquaintance among as large a group as possible.

Fraternities.—The past year has been a hard one for the fraternities. Nearly every chapter began the year with practically no membership—in fact, one or two chapters had no members in college at the beginning of the school year. Early in the semester there was an urgent request that chapters be allowed to initiate freshmen at the beginning of the first semester in view of the untoward conditions. This was finally voted down by representatives of the chapters themselves. This same question will be raised again this year and may possibly need to be accepted. Scholastically, all things considered, I am fairly well satisfied with the situation. General social conditions surrounding the fraternities are good. There has been a consistent improvement along these lines for the last few years and there is no reason to think that there has been any retrogression during the past year.

Discipline.—Discipline administered through or with the knowledge of this office during the past year has been for minor offenses not involving any deep moral turpitude, and of these all but a very few have been for scholastic delinquencies.

Scholarship and absences.—Attached are summaries of work done by the Administrative Board of the Colleges of Science, Literature, and the Arts, and of Education covering these points.

It might be said in passing that had the new regulations of the Academic College been strictly applied this past year, it would have caused the withdrawal of a very large number of students. The Board, in view of war conditions and excitement, decided to make use of the old regulations. Under these there was no decided variation from the last year or so.

Students were summoned when our books showed a total of 5 unexcused absences. The women were interviewed by Dean Beggs and the men by Professor Shumway, except in exceptional cases when they were called into my office. During the first semester of last year, 1917-18, 870 were summoned once, and 20, twice. During the second semester, 835 were summoned once.

During the past year the School of Chemistry has worked informally with the Administrative Board mentioned above, this being a step forward in the development of a general committee to deal with the problems of scholarship and delinquencies and to safeguard and build up closer relations between the colleges, parents and schools, and school officers.

The carrying out of this idea has been taken up and discussed with every college on the campus but one. In practically every case there has been the heartiest response and a desire has been indicated to take any step which would tend to knit the college more closely together, creating a University atmosphere and spirit in place of the college atmosphere and spirit.

STUDENTS DROPPED BY THE ADMINISTRATIVE BOARD, SECOND SEMESTER, 1917-18

CANCELLED

Freshmen	94
Sophomores	75
Juniors	31
Seniors	21
Unclassed	4
Education '19	1
Education '18	1
Total	227

DROPPED

Freshmen	5
Sophomores	3
Total	8

Respectfully submitted,

EDWARD E. NICHOLSON, *Dean*

DELINQUENT REPORTS

REPORTED IN ONE SUBJECT

	October					November					December					January
	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917	1918
Men	175	243	333	358	.....	170	261	332	287	338	166	235	291	261	227	230
Women	194	208	194	245	.....	170	199	208	229	343	177	187	224	230	306	305
Total....	369	451	527	603	.....	340	460	540	516	681	343	422	515	491	533	535

REPORTED IN TWO SUBJECTS

	October					November					December					January
	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917	1918
Men	67	136	94	127	.....	93	120	125	168	116	77	109	159	167	125	93
Women	33	61	37	58	.....	48	50	43	93	98	42	48	55	86	93	95
Total....	100	197	131	185	.....	141	170	168	261	214	119	157	214	253	218	188

REPORTED IN THREE SUBJECTS

	October					November					December					January
	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917	1918
Men	27	78	20	38	.....	36	39	41	81	51	38	164	72	59	50	41
Women	8	15	6	6	.....	14	17	13	19	16	16	8	16	19	25	37
Total....	35	93	26	44	.....	50	56	54	100	67	54	172	88	78	75	78

REPORTED IN FOUR OR MORE SUBJECTS

	October					November					December					January
	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917	1918
Men	2	17	23	2	.....	13	17	21	41	14	7	33	28	19	14	14
Women	2	3	2	1	.....	7	3	2	7	2	1	9	4	6	5	8
Total....	4	20	25	3	.....	20	20	23	48	16	8	42	32	25	19	22

DELINQUENT REPORTS

PERCENTAGES

REPORTED IN ONE SUBJECT

	October					November					December					January
	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917	1918
Men	11.5	14.11	15.5	15.33	.....	11.17	15.16	15.5	12.28	14.6	10.9	13.6	13.6	11.17	9.8	9.93
Women	12.75	12.08	9.06	10.48	.....	11.17	11.56	9.7	9.803	14.81	11.6	10.8	10.4	9.85	13.218	13.17

REPORTED IN TWO SUBJECTS

	October					November					December					January
	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917	1918
Men	4.40	7.90	4.39	5.436	.....	6.11	6.97	5.8	7.19	5.01	5.06	6.3	7.4	7.15	5.39	4.017
Women	2.17	3.55	1.7	2.48	.....	3.15	2.90	2.0	3.981	4.233	2.7	2.7	2.5	2.68	4.017	4.103

REPORTED IN THREE SUBJECTS

	October					November					December					January
	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917	1918
Men	1.77	4.53	.93	1.626	.....	2.36	2.26	1.8	3.461	2.203	2.4	9.5	3.3	2.53	2.159	1.727
Women	.52	.87	.28	.256	.....	.92	.98	.6	.813	.691	1.05	.46	.74	.81	1.079	1.59

REPORTED IN FOUR OR MORE SUBJECTS

	October					November					December					January
	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917	1913	1914	1915	1916	1917	1918
Men	.13	.98	1.06	.086	.....	.85	.98	.97	1.752	.604	.46	1.88	1.3	.813	.604	.604
Women	.13	.17	.09	.043	.....	.46	.17	.09	.299	.086	.....	.52	.18	.253	.215	.345

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 1917-18.

The year under review covers nearly the whole period during which the United States has been at war. The effects of the war have been felt in the work of the Extension Division as well as in the work given on the University campus. In some respects the Extension Division has been more seriously affected than the rest of the University. Extension students are usually of more mature years than the regular day-time students of the University. For that reason more extension students fell within the draft age. Moreover, people who were not taken by the draft were often compelled to assume extra duties because of the shortage of workers occasioned by the demands of the army, and these people had no time or energy left for extra work. As a result, the registration in the evening extension classes and also in the correspondence courses fell off noticeably as compared with the year before.

Our principal activity still is conducting evening extension classes in the Twin Cities, Duluth, and other centers. The figures of registration given later in this report show marked losses in registration. For instance, as compared with 1916-17, the loss in the registration for collegiate courses is 14.2 per cent; in the business courses 39.2 per cent; in the engineering courses 43.8 per cent. Taking our total registration in evening extension classes and comparing it with the registration of 1916-17, we find a loss for 1917-18 of 28.7 per cent. It will be observed that the loss in registration is much heavier in the business and engineering courses than in the collegiate courses. This is largely accounted for by the fact that more women take the collegiate than the business or engineering courses, and the women were not so directly and vitally affected by the war. Nevertheless a small class of students completed the work prescribed for a University certificate in business. On May 28, at the second annual exercises held for the purpose of conferring these certificates, 6 students were granted certificates in accounting; 1 in finance; 4 in general business.

The effects of the war may also be traced in the department of correspondence study. The number of new students registered during the year shows a falling off of 20 per cent as compared with the preceding year. On first thought it may not be apparent why the war should so markedly affect correspondence students. It is true that most of the correspondence students are teachers who are not directly affected by the draft or by the demands of the army. Yet it must be remembered that many young men who hold positions as principals or superintendents either have been called into the army or have volunteered. On the other hand, women teachers have been affected in a twofold way. There has been a heavy drain on their available savings through the several campaigns for Liberty Loan Bonds, the Red Cross war funds, and the Y. M.

C. A. war funds. This has made even the small fee for a correspondence course a matter of serious moment. In the second place, the spare time of these women has been more and more engrossed with war work, especially work connected with the Red Cross. These things have combined to make it exceedingly difficult for many persons to find the time or money or energy to devote to self-improvement through correspondence study. Correspondence study demands a certain amount of leisure, and leisure in war time seems to have disappeared. It has become increasingly apparent for the past two or three years that the development of our correspondence work needs the undivided time and attention of some individual. So far the time devoted to the administration and development of this work has been time taken from other important duties. There is a promising field for correspondence work in Minnesota, and that field should be more successfully cultivated. It is therefore the hope of the Extension Division to find a suitable person and put him in charge of this work during the year 1918-19.

There has been a further development during the past year of the short course idea. The regular short course for merchants was held for the fifth time in February, 1918. This year the three-weeks' course was abandoned and attention was focused on the work of the one-week course. It is a pleasure to report the continued coöperation in this enterprise of the wholesalers and jobbers of the Twin Cities. Two additional short courses were undertaken this year for the first time. On May 27 there began a six-weeks' course called a "Training Course for Volunteers in Social Service Work." On July 8 there began a one-week "Short Course for Dentists." Both of these new short courses were highly successful and ought to be made a permanent part of our yearly program. As time and funds permit, we should add short courses for bankers, for newspaper men, for pharmacists, and for other groups of professional and mercantile workers. Each of these short courses should be conducted in coöperation with the University department or college most interested. It is quite possible that the Extension Division should take over the short course for superintendents and principals in coöperation with the College of Education. In short, there should be numerous short courses in which the Extension Division might act as the administrative and organizing agent for University departments or schools.

The report of the University Lyceum is gratifying in that it shows that this department of extension work is rendering a service which is meeting with wide appreciation from our constituency. The people of the several communities served have testified in an unmistakable manner their need for this kind of service and their appreciation of the benefits to be derived by the University's entrance into the field. At one time during the past year the legitimacy of the University's participation in this kind of activity was seriously questioned by an element of the University Faculty. At that time, under the direction of the Senate Committee on University Extension a questionnaire was drafted and sent out to all the communities served by this department. The response to the

questionnaire was gratifying in the extreme. It put beyond question the fact that the communities want this service, that they believe that the University can best render this service, and that the administration of this work by the University brought better results to the communities than when the same service was rendered through the commercial agencies. As a result of the evidence produced by this questionnaire, the Senate Committee made a unanimous recommendation that this line of work be retained as a function of the Extension Division. As a result of the war it was expected that the number of communities contracting for service would be diminished for 1918-19 as compared with the record of 1917-18. The result, on the contrary, shows an increase of about 10 per cent in the number of communities to be served.

We are having a number of calls for the good offices of this department in organizing a central agency for contracting for the services of attractions to appear on Chautauqua programs. When each town buys its own attractions the cost is greatly enhanced because the artists and lecturers have to make separate trips to each town. A central committee fostered by the Extension Division could plan a circuit for all of these towns and thus reduce the expense to each one. Moreover, this plan would give all the towns the benefit of Mr. Oshier's experience and knowledge of the field in contracting for talent. I believe that this should be the next step undertaken by the Lyceum department.

Since we have abandoned University Weeks I am also convinced that we should plan very definitely for a series of two or three days community institutes in several Minnesota towns. At these institutes, through the coöperation of the University with different state agencies and departments as well as with many voluntary organizations, a good program of lectures, demonstrations, health talks, baby shows, community "sings," dramatics, and other entertainments could be produced. I am convinced that one of our chief aims should be the development of community self-expression in every way possible. This is one of the ways.

The report of our Bureau of Visual Instruction will show a slight change in the plan of operations. Instead of holding our sets of slides ready to send out on request, we organized four circuits of towns, each town receiving and forwarding one set each week. By this means the use of the slides was multiplied. Each set of slides was in almost continuous service during the entire year, and periods of idleness in the office were avoided. The next step in advance, as I have urged from time to time in my annual reports, is to organize a service of films also. Instead of some thirty-two sets of slides we should have two or three hundred sets and in addition twenty-five or thirty films. For this purpose, however, the sum of about $5,000 a year would be needed as a beginning. It will be noted that the one film which we circulated this year through the courtesy of the Curtis Publishing Company met with a cordial reception.

During the year 1917-18 the Drama Service was conducted by Miss H. Margaret Boe. No funds were available from which a salary could

be secured for Miss Boe, but she directed the administrative work of the Service and obtained her compensation through occasional calls to do professional coaching. These calls, however, were not frequent enough to be compensatory. We shall therefore not be able to continue Miss Boe's services. The work will have to be done through our regular office help. The reception given to this form of service is gratifying and has confirmed me in the belief that the service should be continued, and if possible, extended. Anything that the University can do to stimulate community self-expression through theatricals, pageantry, debating, singing, is worth while and is a meritorious form of extension activity. The usefulness of this branch of our work will be greatly enhanced by the appointment of a full-time person to take charge of it. This officer should be able to manage the office end of the work and should also have the training to enable him to go out into the communities of the state and actually organize dramatic clubs and organizations for pageantry and spectacles. We have already an illustration existing of this kind of work in the "little theater movement" of the North Dakota Agricultural College at Fargo.

There is incorporated herewith the annual report made for the Municipal Reference Bureau by Mr. E. L. Bennett, its secretary. The Bureau continues to justify its existence by the use which municipal officers and students of municipal affairs make of its services. As soon as possible a new officer should be added to the staff of the Bureau, namely, a municipal engineer. The towns and villages of the state which are not able to hire competent engineers would very much appreciate the services of a disinterested and competent engineer to advise them what to do when they are considering problems of water supply, paving, sanitation, etc. This engineer from the Bureau could give this advice but would perform no professional engineering service. If the towns decided to carry out certain improvements as suggested by the bureau engineer, they would then be advised to hire a competent engineer to do the work. With slight modifications this plan is already in operation in the Extension Division of the University of Wisconsin and in the Extension Division of the Iowa State College. The towns which hold membership in the League of Minnesota Municipalities are constantly exercising pressure upon us to render them this additional service. I hope that the securing of this officer may not be postponed later than the coming academic year. If necessary, a combination with the College of Engineering could be made whereby half a man's time could be assigned to the Municipal Reference Bureau.

This Division has made every effort to meet the extra demands imposed upon it by war conditions. For instance, we maintained classes in French for Nurses in Minneapolis, in Historical Background of the War at Winona, in Map Interpretation, with special reference to the war, in Minneapolis and St. Paul. We also met the request for speakers for patriotic occasions and for the Red Cross and Liberty Loan drives. We kept on file in this office all government publications on subjects connected with the war, and gave out information on war activities to inquirers.

Through this means people who were interested in certain lines of government activity were put in touch with the proper sources of information. In August, 1917, we lent the services of Mr. Oshier to Mr. Arthur E. Bestor at Chautauqua, New York. Mr. Bestor at that time had charge of the speakers bureau for the training camps and cantonments. In April, 1918, we also lent Mr. Oshier to the Northern Division of the American Red Cross to organize a speaking campaign for the drive for the second Red Cross war fund.

We anticipate for the coming biennium increasing demands for our services. There are numerous directions in which the extension work of a great university may legitimately be expanded. I sincerely hope that the next Legislature will be moved to grant to this Division adequate appropriations for undertaking newer and greater work.

SUMMARY OF REGISTRATION, 1917-18

	First Semester	Second Semester	Year
COLLEGIATE			
Minneapolis	653	337	990
St. Paul	254	80	334
Duluth	35	30	65
Red Wing	***	31	31
Totals	942	478	1,420
BUSINESS			
Minneapolis	476	245	721
St. Paul	167	87	254
Duluth	46	35	81
Totals	689	367	1,056
ENGINEERING			
Minneapolis	141	69	210
Totals	141	69	210
	1,772	914	2,686

SUMMARY OF NUMBER OF CLASSES, 1917-18

	First Semester	Second Semester	Year
COLLEGIATE			
Minneapolis	22	26	48
St. Paul	9	5	14
Duluth	1	1	2
Red Wing	***	1	1
Total	32	33	65
BUSINESS			
Minneapolis	19	15	34
St. Paul	8	4	12
Duluth	2	3	5
Total	29	22	51

ENGINEERING			
Minneapolis	13	12	25
Total	13	12	25
Totals	74	67	141

In addition to the regular extension classes a course on the Historical Background of the Great War was given in Winona during the spring of 1918. The course consisted of seven lectures given by members of the University Faculty. The registration was 109, made up of teachers of the city schools, of the State Normal School, and the College of St. Theresa.

SUMMARY OF FEES

	First Semester	Second Semester	Year
Total collegiate	$3,785.00	$2,480.00	$6,265.00
Total business	4,567.50	2,446.25	7,013.75
Total engineering	1,127.50	547.50	1,675.00
Totals	$9,480.00	$5,473.75	$14,953.75

Thirty-seven students were registered during the year in Extension Law classes. The fees for these students, amounting to $730.00, did not come into the budget of the General Extension Division but were paid into the budget of the Law School.

COMPARISON OF THE ENROLLMENT IN EVENING CLASSES, 1916-17 AND 1917-18

SUMMARY OF NUMBER OF STUDENTS

	1916-1917	1917-1918
Total collegiate	1,655*	1,420
Total business	1,739	1,056
Total engineering	373	210
Totals	3,767†	2,686

SUMMARY OF FEES

Total collegiate	$ 7,608.50	$ 6,265.00
Total business	10,649.50	7,013.75
Total engineering	2,164.00	1,675.00
Totals	$20,422.00	$14,953.75

* In the report for the year 1916-17 this was carried as 1,718, but included 63 registrations in Swimming for the first semester duplicated in the second semester.

† In the report for the year 1916-17 this was carried as 3,830, but included 63 registrations in Swimming for the first semester duplicated in the second semester.

EVENING EXTENSION CLASSES

COMPARATIVE STATEMENT

	1913-14	1914-15	1915-16	1916-17	1917-18
BUSINESS COURSES					
Number of classes	50	69	49	62	51
Number of instructors from Extension Division	3	4	3	3*	2
Number of instructors from outside Extension Division	12	18	12	11	19
Number of registrations	1,100	1,846	1,080	1,739	1,056
Fees received from registrations	$6,481.50	$9,059.50	$6,821.00	$10,649.50	$7,013.75
Salaries paid to instructors on Extension staff	.....	9,100.00	6,100.00	6,250.00	5,750.00
Fees paid to instructors not on Extension staff	.....	5,421.00	4,135.00	6,349.00	4,944.50
COLLEGIATE COURSES					
Number of classes	39	61	67	68	65
Number of instructors from Extension Division	2	2	2	1†	2
Number of instructors from outside Extension Division	18	24	27	34	25
Number of registrations	690	1,155	1,425	1,655‡	1,420
Fees received from registrations	$3,695.00	$5,863.00	$6,569.75	$7,608.50	$6,255.00
Salaries paid to instructors on Extension staff	.....	3,300.00	3,300.00	750.00†	2,300.00
Fees paid to instructors not on Extension staff	.....	6,709.50	7,975.00	9,875.00	8,756.25
ENGINEERING COURSES					
Number of classes	23	31	27	33	25
Number of instructors from Extension staff	1	1	1	1	1
Number of instructors from outside Extension Division	14	13	8	11	6
Number of registrations	225	349	349	373	210
Fees received from registrations	$1,657.00	$2,298.50	$2,154.00	$2,164.00	$1,675.00
Salary paid to instructor on Extension staff	.....	2,000.00	2,000.00	2,000.00	2,100.00
Fees paid to instructors not on Extension staff	.....	3,000.00	2,325.00	2,787.50	1,925.00

* Full time for two instructors, part time for one.

† Part time collegiate; part time business.

‡ In the report for the year 1916-17 this was carried as 1,718, but included 63 registrations in Swimming for the first semester duplicated in the second semester.

SHORT COURSES

Merchants' Short Course.—The annual Merchants' Short Course was held during the week of February 4 to 8, 1918, with an enrollment of 125. The course this year combined the features of both the one-week and three-week courses of the past two years. The forenoon sessions were devoted to general and inspirational lectures of interest to both managers and salespeople. During the afternoon sessions the students were divided into groups for the study of special lines of merchandise and special topics. The class in Show Card Writing, doing more intensive work, continued throughout a second week.

Training Course for Volunteers in Social Service Work.—There was conducted in St. Paul from May 27 to July 6, 1918, inclusive, a Training

TABLE III

SUMMARY OF EXPENDITURES, 1916-1917

SUMMARY OF EXPENDITURES, 1916-1917—*Continued*

		Administrative, Instructional, and Miscellaneous Services				Maintenance of Offices					
		Salaries	Wages	Labor	Lectures and Entertainments	Postage	Stationery, Printing and Office Supplies	Freight and Express	Telephone and Telegraph	Traveling Expenses	
1.	Administration	$49,948.62	$1,584.25	$127.85	$245.00	$2,463.75	$6,783.65	.....	.....	$155.93	1
2.	General University	67,925.48	67,911.03	806.72	.....	1,024.06	4,047.38	$2,415.87	$5,267.42	2,208.69	2
3.	Science, Literature, and the Arts	300,242.58	20,078.64	247.76	.....	385.35	1,866.87	63.93	6.00	1,467.41	3
4.	College of Engineering	90,651.61	8,437.95	131.76	.....	135.25	995.70	63.11	0.96	72.30	4
5.	Medical School	104,773.43	21,942.74	2,173.92	.....	421.92	1,742.77	2.63	1.85	125.79	5
6.	Elliot Hospital	26,023.18	18,214.50	37.17	.....	139.00	1,197.37	22.70	270.23	105.50	6
7.	School of Chemistry	38,496.25	4,148.52	258.41	.....	32.00	730.30	2.90	.....	79.31	7
8.	School of Mines	33,706.75	6,292.05	.....	50.00	128.50	964.73	121.86	.....	1,472.80	8
9.	College of Dentistry	65,353.33	1,211.80	20.00	.....	149.50	1,498.71	.....	.....	165.10	9
10.	Law School	37,744.55	125.00	.....	.....	102.50	564.47	36.99	.....	131.32	10
11.	College of Pharmacy	14,281.90	1,213.65	.....	.....	62.00	71.36	1.80	.....	39.22	11
12.	College of Education	38,746.44	327.17	39.80	.....	398.95	1,079.12	3.09	.....	.....	12
13.	University Extension	46,141.45	89.08	392.06	29,142.74	1,367.00	2,941.64	73.77	60.00	3,934.86	13
14.	Graduate School	3,820.00	50.25	4,073.86	.....	74.00	223.16	.....	.....	.....	14
15.	Summer Session	21,173.62	77.25	.....	25.00	110.00	211.78	.....	.....	.....	15
16.	Department of Agriculture	268,983.61	48,581.41	54,482.27	315.00	2,496.41	5,489.46	2,504.18	2,140.20	7,629.03	16
17.	Agricultural Extension	32,715.48	106.03	4,540.05	22.91	509.12	1,402.84	55.58	.....	14,023.76	17
18.	Crookston School	25,992.84	1,989.95	9,190.52	25.00	489.73	1,271.79	621.10	294.53	1,452.00	18
19.	Morris School	19,964.52	5,175.48	4,789.09	.....	499.20	614.57	321.18	267.58	892.53	19
20.	Grand Rapids Farm	3,239.23	1,154.38	5,234.61	.....	50.75	68.86	195.19	48.88	217.04	20
21.	Waseca Farm	1,200.00	.....	2,424.63	.....	10.60	16.18	99.90	85.49	73.65	21
22.	Duluth Farm	2,000.00	1,060.75	3,041.27	.....	44.00	57.77	35.13	57.98	235.54	22
23.	Zumbra Fruit Farm	2,000.00	932.66	2,544.20	.....	6.30	9.50	41.91	32.75	18.90	23
	Totals	$1,295,124.87	$210,704.54	$94,555.95	$29,825.65	$11,099.89	$33,849.98	$6,682.82	$8,533.87	$34,500.68	
24.	Shevlin Hall	$1,610.01	$7.60	$3,934.84	.....	$3.50	$64.97	.....	.....	.....	24
25.	Sanford Hall	1,355.00	.....	4,285.59	.....	25.00	171.31	.....	.....	.....	25
26.	Minnesota Union	1,287.50	12.68	9,790.54	.....	.....	70.98	$4.03	$24.60	.....	26
27.	Farm Dining Hall	1,458.00	15.12	11,065.65	.....	.....	136.30	52.55	99.52	.....	27
28.	Crookston Dining Hall	.....	.....	3,185.77	.....	.....	.....	168.45	.....	.....	28
29.	Morris Dining Hall	.....	.....	3,643.58	.....	.....	1.25	304.91	.....	.....	29
30.	Farm Book Store	1,620.00	.....	459.85	.....	18.00	3,547.28	59.85	.....	.....	30
31.	Cold Storage Plant	.....	.....	.....	.....	.....	.....	.....	.....	.....	31
32.	Printing Department	7,712.92	2,602.65	.....	.....	14.00	14,405.89	45.13	.....	.....	32
33.	Trolley	1,366.81	.....	.....	.....	.....	6.50	74.73	.....	.....	33
	Totals	$1,311,535.11	$213,342.59	$130,921.77	$29,825.65	$11,160.39	$52,254.46	$7,392.47	$8,657.99	$34,500.68	

TABLE III

SUMMARY OF EXPENDITURES, 1916-1917—*Continued*

		Supplies for Instruction							
		Kitchen Utensils	Chemicals, Laboratory Supplies and Glassware	Feed and Provisions	Seeds and Plants	Book Binding	Bulletins and Publications	Miscellaneous Supplies	Repairs
1.	Administration	.....	.....	.....	.....	$111.30	.....	$369.60	$2.33
2.	General University	.....	.....	$317.56	.....	3,369.35	$7,616.54	3,456.01	24,476.72
3.	Science, Literature, and the Arts	.....	$1,864.39	19.19	$583.77	.....	1,628.38	154.56	1,299.74
4.	College of Engineering	.....	830.03	.....	.....	.....	.....	1,195.48	1,477.46
5.	Medical School	.....	8,038.88	204.90	.....	.....	481.50	280.35	1,158.49
6.	Elliot Hospital	$129.27	10,046.10	24,224.27	.....	.....	25.07	1,774.94	2,122.49
7.	School of Chemistry	.....	5,629.71	.....	.....	.....	3.72	160.93	920.28
8.	School of Mines	.....	2,348.69	.....	.....	21.75	.....	478.59	1,545.18
9.	College of Dentistry	.....	23,104.46	8.09	.....	2.00	52.35	254.09	478.96
10.	Law School	.....	.....	.....	.....	97.85	.....	20.00	.....
11.	College of Pharmacy	.....	823.14	.....	.....	.....	.....	178.13	236.32
12.	College of Education	.....	302.82	.....	.....	.....	.....	32.65	118.83
13.	University Extension	.....	.....	.....	.....	.....	634.83	362.93	0.15
14.	Graduate School	.....	297.08	8.09	.....	0.80	1,606.38	151.73	.....
15.	Summer Session	.....	76.88	.....	.....	.....	227.95	83.32	.....
16.	Department of Agriculture	40.78	7,537.76	25,823.41	586.13	470.35	3,952.20	7,755.45	21,157.01
17.	Agricultural Extension	.....	.....	.....	.....	.....	2,500.72	482.94	.....
18.	Crookston School	29.20	243.79	5,761.31	485.00	88.40	518.66	1,131.91	3,007.92
19.	Morris School	8.63	297.51	2,761.83	332.33	43.76	190.44	626.06	5,058.51
20.	Grand Rapids Farm	1.60	24.51	5,566.17	212.98	.....	9.10	410.79	1,074.55
21.	Waseca Farm	0.45	3.80	591.40	73.56	.....	0.60	124.47	1,184.40
22.	Duluth Farm	6.29	8.41	1,400.24	90.89	.....	241.34	286.92	377.40
23.	Zumbra Fruit Farm	.....	.....	190.00	16.93	.....	1.68	191.99	1,342.13
	Totals	$216.22	$61,477.96	$66,876.46	$2,381.59	$4,205.56	$19,691.46	$19,963.84	$67,038.87
24.	Shevlin Hall	.....	.....	.....	.....	.....	.....	$121.76	$257.86
25.	Sanford Hall	.....	.....	.....	.....	.....	$17.57	68.88	840.86
26.	Minnesota Union	.....	.....	.....	.....	.....	6.20	243.10	981.30
27.	Farm Dining Hall	.....	.....	$513.22	$18.03	.....	1.92	315.08	626.80
28.	Crookston Dining Hall	.....	.....	412.60	.....	.....	.....	184.86	14.49
29.	Morris Dining Hall	.....	.....	65.25	.....	.....	.....	3.50	.....
30.	Farm Book Store	.....	$830.92	.....	.....	$5.00	2.56	3,009.02	88.76
31.	Cold Storage Plant	.....	.....	.....	.....	.....	.....	.....	.....
32.	Printing Department	.....	.....	.....	.....	.....	1,093.35	132.12	51.29
33.	Trolley	.....	.....	.....	.....	.....	.....	5.74	38.34
	Totals	$216.22	$62,308.88	$67,867.53	$2,399.62	$4,210.56	$20,813.06	$24,047.90	$69,938.57

Course for Volunteers in Social Service Work, for which there were 41 registrations. The course was given in coöperation with the A. H. Wilder Charity, the United Charities, Ramsey County Women's War Organization. It included lectures and field work in the following divisions: Personal Service; Community Problems; Immigration and Americanization.

Short Course for Dentists.—In coöperation with the College of Dentistry of the University, the General Extension Division conducted a Short Course for Dentists from July 8 to 13 inclusive. The course included intensive lectures and clinic work lasting throughout the day. There were 50 registrations; all that could be taken care of. The instruction was given by regular members of the College of Dentistry and the Department of Anatomy.

CORRESPONDENCE COURSES

The following tables summarize the correspondence work for the year:

Number of students on roll August 1, 1917		208
Number of new students registered from August 1, 1917, to August 1, 1918		151
Number of registrations from August 1, 1917, to August 1, 1918		178
Number of expirations not reinstated during the year		87
Number of courses canceled or refunded during the year		39
Number of reinstatements of registrations during the year		48
Number of courses completed during the year		99
Number of registrations now in force		
in business subjects	59	
in collegiate subjects	354	
in engineering subjects	20	
		433
Number of active students during the year (those carrying 4 or more lessons)		210
Number of inactive students whose terms have not expired		42
Number of students registered in 2 courses		88
Number of instructors carrying on courses		40
Number of students on roll August 1, 1918		177
Number of students active on August 1, 1918		91

COMPARISON OF ENROLLMENT, 1914-18

	Aug. 1 1914	Aug. 1 1915	Aug. 1 1916	Aug. 1 1917	Aug. 1 1918
Number of students on the roll	76	100	196	208	177
	1914-15	1915-16	1916-17	1917-18	
New students	102	199	190	151	.....
Number of active students during the year	105	182	247	210	.....
Number of completions	49	86	110	99	.....
Number of students carrying 2 courses	49	80	85	88	.....
Number of instructors	31	35	41	40	.....
	Aug. 1 1915	Aug. 1 1916	Aug. 1 1917	Aug. 1 1918	
Number of students on the roll	100	196	208	177	.....
Number of students active	68	96	143	91	.....

LECTURE AND LYCEUM DEPARTMENT

The following tables summarize the work of the Lecture and Lyceum Department for the year:

Number of different attractions used	43
Number of members of University Faculty	10
Number taken from outside the University	33

COMPARISON, 1914-18

COURSES

	1914-15	1915-16	1916-17	1917-18
Number of towns having courses	100	110	136	180
Number of engagements filled	522	541	654	905
Price of courses	$25,040.83	$29,145.00	$34,692.00	$38,814.50
SINGLE LECTURES OR ENTERTAINMENTS				
Number of towns having lectures or entertainments	89	42	14	12
Number of engagements filled	94	59	27	14
Amount of fees	$2,784.49	$1,785.00	$560.00	$280.00

Courses of from 2 to 10 numbers have been booked in 194 towns for delivery during the year 1918-19. The total amount of the cost of these aggregates $40,399.00.

Patriotic addresses.—In response to direct requests patriotic addresses were arranged for in 10 towns.

Camp Dodge course.—At the request of a Y. M. C. A. secretary at Camp Dodge, Iowa, a course consisting of 5 series of lectures and 2 series of entertainments of 4 numbers each, was arranged to be given for the enjoyment of the men in camp. Owing to local conditions at the camp only three series of lectures and one series of entertainments were given.

Red Cross service.—During the spring drive for Red Cross contributions Mr. Price filled a series of engagements speaking on 7 different occasions throughout the northern part of the state.

Commencement addresses.—In addition to the lectures and entertainments listed above commencement addresses were arranged for in 33 towns.

Visual instruction.—During the year 1917-18, the system of sending out sets of lantern slides on the circuit plan was inaugurated, whereby each town on the circuit received one set of slides each week. A small registration fee was charged to cover the cost of breakage and weekly reports were required from each town. Four circuits were arranged including 43 towns.

During the two months from the middle of February to the middle of April, 1918, there was circulated the film entitled "Thomas Jefferson Morgan," which was obtained from the Curtis Publishing Company, and shown in 9 towns.

DRAMA SERVICE

In its essentials the Drama Service is a circulating library of plays suitable for amateur production, together with a certain amount of professional advice and suggestion. A collection of plays has been brought together largely without cost to the University through the courtesy of publishing houses. The plays are sent out on the following conditions:

1. Parts are not to be copied out of plays so sent out.

2. Copies of the plays finally selected are to be purchased from the publishers thereof.

3. Plays received from the Drama Service are to be returned in good order to the University in one week.

4. Recipient of plays is to send to the University postage equal to the amount on package when received.

When requests come for help in the selection of a play, three or four copies of plays are sent out from which a selection may be made. The three or four copies are chosen with a view to the needs and the dramatic possibilities of the community. Advice is also given with reference to coaching, costumes, staging, etc.

WORK OF DRAMA SERVICE, 1917-18

Total number of towns served in Minnesota	213
Total number of inquiries	347
Total number of plays sent	1,885

Respectfully submitted,

RICHARD R. PRICE, *Director*

THE MUNICIPAL REFERENCE BUREAU

Following is the annual report of the Municipal Reference Bureau for the year ending July 31, 1918:

Number of inquiries.—The Bureau has handled some 225 inquiries during the year. This is the same number as reported a year ago, but as a matter of fact it represents an increase of about 20 per cent, due to the circumstance that no Bureau reports were mimeographed, as before, and consequently requests were not received. Such reports as previously were mimeographed were given a better circulation than before, by publication in *Minnesota Municipalities.*

Nature of inquiries.—As to subject, the inquiries answered during the past year cover about as wide a range as in previous years, and touch nearly every field of municipal government and administration. Numerous problems of public utilities and public works have been submitted to the Bureau, others of public safety and public health, of public finance and accounting, of charters, etc. A change in the village election law, made by the Legislature of 1917 and going into effect in March, 1918, resulted in five separate inquiries.

As to service requested, the inquiries varied from requests for data, which could be supplied by sending a bulletin, to a request for the draft

of a franchise, which took a large part of the Secretary's time for three weeks to prepare. Thirty four were requests for ordinances, upon 25 different subjects. It was necessary to draft 17 of these, for 22 inquiries; 4, requested by 5 inquirers, had been drafted by the Bureau in previous years, and 4, for 7 inquirers, were obtained from the ordinance books of other municipalities. The number drafted is considerably larger than for previous years, and several represent the work of two or more days each. Other inquiries necessitated searches for data and consultations with authorities upon the particular matters in hand. Three cities requested aid in getting tests made of the public gas supply. Several desired forms for licenses, city warrants, etc.

As always, the greatest number of inquiries came from city and village officials—clerks, engineers, attorneys, councilmen, mayors, charter commissioners, and officials of nearly every other department. The next largest number came from other bureaus, civic organizations, and libraries primarily interested in municipal affairs. And a small number came from private individuals. Inquiries from the office of the Governor of Minnesota and from the Governor General of the Philippine Islands have been answered.

Geographical distribution.—The number of municipalities in Minnesota from which inquiries have been received, 72, is smaller than that of last year, but probably slightly larger than last year's number would have been if corrected to count inquiries upon the same basis as this year.

Inquiries came from 26 places outside of Minnesota. This list includes 12 more places than last year's list.

Questionnaires and letters.—As in previous years, the Bureau has sent out a few questionnaires asking data upon particular problems. However, only 1 such has been sent out this year except upon an inquiry received, whereas in previous years the Bureau sent out from 3 to 5 without request. The information obtained by those inquiries has not been mimeographed as before, but when it is of general interest it has been published, or is to be published, in *Minnesota Municipalities* as mentioned earlier in this report. This somewhat reduces the number of requests, but, it is believed, gives a better distribution of the information. In addition to questionnaires, it was necessary in many cases to send letters to procure information requested in inquiries.

Election law bulletin.—When it appeared from several inquiries that not all the villages affected by an act changing the manner of village elections in March, 1918, understood the act, a bulletin was prepared explaining its provisions, and this was mimeographed and sent out to all villages affected.

Material added.—No exact count has been kept of the pieces which have come into the Bureau during the year, but they probably have totaled nearly a thousand, exclusive of periodicals. About three fourths of such pieces have been procured by request. The rest have been sent voluntarily, and only a small proportion of them have any value for the Bureau.

Some 50 periodicals have been received in exchange for *Minnesota Municipalities.* Such of these as are of immediate value and are likely

to be needed in the Bureau at any time are kept in the office. By arrangement with the University Library the others are turned over to it and kept on file in the periodical department.

Coöperation with other departments of the University.—The cordial relations with other departments of the University have continued. Several members of the Faculty of Engineering have given valuable assistance, without which a large number of inquiries could hardly have been answered. In the Department of Political Science, Mr. Anderson has been especially helpful, by reading and criticising some of the ordinances mentioned before. The Bureau in turn was able to furnish data for the use of a number of his students in preparation of their term papers in Municipal Government. It is intended that whenever a student's paper shows merit entitling it to publication it shall be printed in *Minnesota Municipalities.* The coöperation of the Library in the matter of periodicals has been mentioned. Besides, the Library has furnished bibliographical lists from which the Bureau has obtained much valuable material.

The League of Minnesota Municipalities.—The affiliation of the Bureau with the League of Minnesota Municipalities continues to yield mutual satisfaction and advantage. The Secretary of the Bureau acts as executive secretary of the League and as editor of *Minnesota Municipalities,* the League's official magazine. In this magazine were published 14 inquiries and answers from the files of the Bureau, besides a number of other informational articles prepared by the Secretary. In November, 1917, the League sent the Secretary of the Bureau to Detroit, Michigan, to represent it at the meetings of the National Municipal League, the Governmental Research Council, and a conference of secretaries of bureaus and leagues. Since September 1, 1917, the League has employed a half-time stenographer, who has done the greater part of the stenographic work of the Bureau. The League is planning to publish a manual of municipal government in Minnesota, which is now in course of preparation by the Secretary of the Bureau.

Future development.—A memorandum submitted early in the year indicated the development which it appears to the Secretary, the Bureau should have. Another project which it is hoped can be worked out is that of a short course for municipal officials, to be arranged in connection with the Department of Political Science. The Secretary believes that the Bureau should develop close relations with the State Firemen's Association, as it is an organization with objects closely affecting the public safety in municipalities.

Respectfully submitted,

E. L. BENNETT, *Secretary*

COMPARATIVE STATEMENT OF ACTIVITIES OF THE GENERAL EXTENSION DIVISION

	1913-14	1914-15	1915-16	1916-17	1917-18
EVENING CLASSES					
Number of semester registrations	2,015	3,350	2,854	3,830	2,773
Number of individuals during the year without duplication	1,552	2,539	1,951	2,371	1,825
Number of semester classes	122	161	143	163	141
CORRESPONDENCE COURSES					
Number of registrations from Aug. 1 to Aug. 1	83	102	199	190	151
SHORT COURSES					
Merchants' Short Course, number of registrations	138	231	134	125	125
Social Service Course, number of registrations	.....	.....	.....	.....	41
Short Course for Dentists, number of registrations	.....	.....	.....	.....	50
LECTURE AND LYCEUM DEPARTMENT					
Number of towns having courses	37	100	110	136	180
Number of engagements filled at above towns	184	522	541	654	905
Number of single engagements	68	124	82	100	57
VISUAL INSTRUCTION					
Number of schools served	11	52	80	108	49
Number of sets of slides used.	.....	106	205	343	686
DRAMA SERVICE					
Number of towns served	.....	.....	.....	193	226
Number of inquiries	.....	.....	.....	353	361
Number of plays sent	.....	.....	.....	1,143	1,918
MUNICIPAL REFERENCE BUREAU					
Number of towns making inquiries	53	80	100	102	72*
Number of inquiries received.	.....	.....	200	225	225
EXTENSION DEBATES					
Number of debates given	52	35	14	.....	.....
UNIVERSITY WEEKS					
Number of towns served,	24	24	12	.....	.....
Number of faculty members participating in program	32	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.

SUMMER SESSION

To the President of the University:

SIR: I beg to submit the following report on the Summer Session for the year 1918, June 24 to August 2.

ENROLLMENT

Science, Literature, and the Arts	593
Dentistry	60
Education	192
Engineering	37
Medicine	118
Graduate School	104
Agriculture	141
Total	1,245
Men registered	434
Women registered	811
Total	1,245
Non-resident students	1,047
Resident students	198
Total	1,245

NUMBER OF COURSES CARRIED BY SUMMER SESSION STUDENTS

Number registered for one course	411
Number registered for two courses	506
Number registered for three courses	247
Number registered for four courses	73
Number registered for five courses	7
Number registered for six courses	1
Total	1,245
Number registered in continuation courses	32

Faculty.—There were 133 persons on the Summer Session Faculty, 124 of whom were members of the regular Faculties of the University. Instructors from the outside were: Mr. Earle Baker, Minneapolis Public Schools; Mr. C. C. Crawford, University of Kansas; Miss Abbie L. Day, Passaic, New Jersey; Mr. M. C. Elmer, University of Kansas; Miss Helen Grimes, Minneapolis; Mr. H. H. Hart, Russell Sage Foundation, New York; Miss Imogene Kriskey, Minneapolis; Miss Amelia Sears, Chicago; Mr. G. H. Trafton, State Normal School, Mankato.

This year for the first time a definite sum ($22,000) was appropriated for the maintenance of the Summer Session on the main campus. Hitherto we have been compelled to finance the Summer Session with the fees paid by the students. The receipts and disbursements for this campus were as follows:

	Disbursements	Receipts	Dr. Bal.	Cr. Bal.
ACADEMIC AND EDUCATION.....	.....	$13,083.00	.....	.....
Supplies	$725.49	.....	.....	.....
Pay-roll	14,379.45	.....	$2,021.94	.....
MEDICAL SCHOOL	.....	3,640.50	.....	.....
Supplies	431.08	.....	.....	.....
Pay-roll	3,214.21	.....	4.79	.....
DENTISTRY	.....	1,961.50	.....	.....
Pay-roll	580.01	.....	.....	$1,381.49
Totals	$19,330.24	$18,685.00	$2,026.73	
			1,381.49	
			$645.24	

This statement shows that our disbursements were $2,678.76 less than the appropriation, and that the receipts were $645.24 less than the disbursements.

Advertising.—The University should spend more money for advertising if it wishes to build up a Summer Session. Instead of limiting the cost of advertising to two or three hundred dollars, it ought to spend three or four times as much. In addition to advertising in educational journals and in certain newspapers, a follow-up letter should be sent to Summer Session students. This letter should be of a friendly nature, inviting the coöperation and criticism of the students and urging them to continue in college work until they have earned a degree.

We should advertise more extensively in the southern states. Chicago and Wisconsin both draw more heavily on the south than we do, and they have nothing better to offer in the way of climate or work than Minnesota.

Centralized control.—The consolidation of the various summer sessions of the University of Minnesota was tried in 1917. This year there seemed to be no question as to advisability of continuing the plan. The following resolutions for the organization and administration of the Summer Session were approved by the Deans and adopted by the Board of Regents:

1. Subject to the approval of the President and Board of Regents, the University of Minnesota shall maintain an annual summer session to be of such length and to embrace such courses as may be determined by the Director in consultation with the Advisory Committee hereinafter constituted. Such summer session shall be administered as a separate unit in the organization of the University, and shall offer only work of collegiate grade properly articulated with the collegiate work of the regular session of the University.

2. The maintenance of said summer session shall be provided for through the appropriation by the Regents of a definite sum annually. All income accruing from the summer session shall be paid into the general University fund.

3. At the first meeting of the Board of Regents after the beginning of each University year a Director of the summer session shall be appointed by the Regents to serve for the period of one year next ensuing. In case the Director is a member of the staff on the main campus, there shall be appointed, upon the recommendation of the Director, a Vice-Director for work offered on the campus of the Department of Agriculture.

4. The Deans of the several schools and colleges, or their representatives approved by the President, together with the Director and Vice-Director, shall constitute an Advisory Committee of the summer session. The Director shall advise

with this committee concerning all questions of policy relating to the organization and administration and the work of the summer session.

5. The Director with the approval of the President and the Board of Regents shall prepare a budget, arrange for the teaching staff, salary schedule, list of courses, prepare the announcements, bulletins, and teaching schedules, and take such other measures as he may deem necessary for the proper conduct and development of the work of the summer session.

6. The Director shall also prepare and submit to the President an annual report on the work of the summer session together with such recommendations as he may choose.

7. In the conduct of the work in the College of Agriculture the Vice-Director shall exercise all the powers and discharge the duties of the Director, subject, however, to the approval of the Director.

8. The Director upon the advice of the Advisory Committee may present to the University Senate recommendations relating to the length of the summer session, the articulation of the summer session with the work of the regular year, and such other matters as may affect general University policy.

Budget.—A definite budget was again submitted. It included provision for all items of expense with the exception of the continuation classes. It is my opinion, in case the University is compelled next year or at any time in the near future to return to the semester plan that continuation classes in the summer should be budgeted in exactly the same manner as other classes are budgeted.

Registration.—Many of the difficulties and criticisms which have attended registration in the past were removed by the Registrar's employing additional help and by faculty members assisting the Director in advising new students in the large room on the ground floor of the Library Building.

Payment of fees.—Every year the question is raised in some form as to whether all students should pay fees. Attention is always called to the fact that a number of members of the medical staff are employed by the Regents with the distinct understanding that they are to pay no fees for work as students. Other members of the instructional staff in other colleges continually petition to be allowed to carry college work without the payment of fees. It seems to me that there should be established a definite University policy with reference to this matter—a policy which will apply to students in the Summer Session in exactly the same manner as during the regular year.

Social activities.—President Nicholas Murray Butler of Columbia University addressed the students at the only general assembly we were able to hold. Chapel exercises were held regularly on Tuesday and Thursday and were in charge of Professor J. S. Young. Trips and excursions directed by Professor Young were under the immediate charge of Mr. W. A. Ziegler. A general reception for Faculty and students was held on Friday evening of the first week in Shevlin Hall. One evening each week was set aside for a social gathering for the entire student body. Mrs. Ladd gave a number of afternoon teas and readings in Shevlin Hall.

A year ago we recommended the appointment of a social director. Since Dean Beggs consented to remain this year, it seemed unnecessary to appoint such a director.

Physical Education for Women.—The physical education building for women was open again and instruction was offered in swimming for women. It is a matter of regret that the physical education building for men was not open. It seems extremely unfortunate that this building must be closed or used for some other purposes every summer.

Number of hours instructors may teach.—During the last two years instructors have received full pay if they taught a minimum of twelve hours. No extra pay was given them if they taught more than twelve hours. This plan was continued in 1918. This plan, however, involves the giving of fractional credits for certain courses. It seems that instructors may offer one three-credit course and two one-and-one-half-credit courses. Many students object to the fractional credit scheme.

A committee of which Mr. J. S. Young is chairman was appointed to consider the adjustment that should be made in this matter and to make recommendations to the Director of the Summer Session.

Salaries.—The staff were paid as before, one ninth of their annual salaries, 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. Instructors from the outside were sometimes paid more. The Summer Session salary schedule at the University of Minnesota is still too low. It does not compare as favorably as it should with the salaries paid to summer session instructors in other institutions.

Auditors.—We were swamped with petitions from students to enter classes as auditors. This was particularly true of beginning French. Every young woman thought she ought to review French or begin it. There would have been more auditors in French classes than regular students if we had permitted them to enter. We adopted the rule that no undergraduates would be admitted as auditors to any class. There was some criticism of this, and some instructors were of the opinion that the rule was too drastic. The Committee to which I referred above, of which Mr. Young is chairman, has been asked to report upon this matter also.

Continuation courses.—Continuation courses were offered this year for the second time. The following courses were offered: Gross Anatomy, Physiology, and Organic Chemistry.

Admission of subcollege students.—A number of requests were made to admit students of subcollege grade to the University. Such students were informed by representatives of the Registrar's office that they could be admitted to the Summer Session. The Director, however, was of the opinion that the same standards should prevail for the Summer Session as prevail during the regular year and consequently all such students were denied admission. Mr. Pierce has suggested the following statement for the next bulletin: "The courses of the Summer Session are of college grade and are designed for those working for University credit. All students desiring to take Summer Session work are required to file credentials showing their qualifications to enter the University as regular students."

Administrative Board.—The Director invited Dean Nicholson as representative of the Administrative Board to remain during the Summer Session and to assist with the details of registration and administration.

The Summer Session of 1919.—Of course no one can tell exactly what will happen in 1919, but it seems probable that the Summer Session may continue as the fourth quarter of the University. In that event I suggest that there be two summer sessions of 5½ or 6 weeks each. I also suggest that arrangements be made for the publication of only one Summer Session bulletin announcing all of the Summer Session courses open to civilian students. This is a matter of considerable importance. There is very great danger under the quarter system that we may return to the plan of having as many summer sessions as there are colleges.

Respectfully submitted,

L. D. COFFMAN, *Director*

DEPARTMENT OF PHYSICAL EDUCATION FOR MEN

To the President of the University:

SIR: I herewith submit my report for the year 1917-18:

While the effect of the war on the number of students participating in the activities of this Department during the year is appreciable, the following records show that all the various branches of the work were continued as in former years.

Chief tasks undertaken by the Department.—

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.
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, wrestling, boxing, etc.
8. Promotion of miscellaneous sports and physical activities including gymnastics, wrestling, swimming, soccer, and the work of Sigma Delta Psi.
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, the University High School, and the farm schools at St. Anthony Park and Morris. 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 regular gymnasium course.

During the year a total of 3,285 examinations was made, divided as follows:

Original examinations, with measurements	
Collegiate	1,141
Agricultural School	269
University High School	56
Morris School and Station	42
Reëxaminations with measurements	345
Medical inspections—collegiate	740
Medical inspections—Agricultural School	186
Health consultations, with examinations	506
First aid cases, treated, such as sprains, abrasions, contusions, etc.	270

Special lecture.—A total of 1,411 students attended the special lecture on sex hygiene as required of all students entering the University and Agricultural School for the first time (1,142 college and 269 Agricultural School students).

This lecture was given in five divisions, four of which were at the University and one at the University Farm. The following staff delivered the lectures: Drs. J. C. Litzenberg, C. A. Erdmann, H. L. Williams, and Earl R. Hare.

Disease census.—A total of 1,243 disease census cards, properly filled out and signed, as required of all new matriculants of the University, the Agricultural School, and the University High School were collected. The cards were sent to the Epidemiological Division of the State Board of Health for recordation of data, to be returned later to the files of the Department of Physical Education for Men.

Personal hygiene lectures.—Seven hundred and fifteen 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 written examination at the close.

Gymnasium classes.—Six hundred and six 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 8 efficiency tests for credit in gymnasium. Three of these tests were required in the first semester and 5 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 were such that the average student, with the training given, could meet them, and were the result of careful study by the Department.

Corrective gymnastics.—Of the number enrolled in the gymnasium classes, 174 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.—Intercollege contests were held in football, basket-ball, baseball, hockey, swimming, track and field events, boxing, and wrestling. (See report of Intramural Sports Committee.)

Miscellaneous physical activities.—1. Special classes were held in elementary, intermediate, and advanced gymnastics, and a selected group of 8 students participated in the Northwestern Gymnastic Meet, which is held annually at the University, and is composed of gymnastic teams from colleges, normal schools, high schools, Y. M. C. A.'s, turnvereins, settlement houses, etc., from various parts of the state.

2. Sigma Delta Psi, the honorary athletic fraternity, is well established at Minnesota. Six 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 fifty-nine students are enrolled as candidates for the fraternity. Four senior grade certificates were awarded at the close of the year.

3. The Department had an organized leaders' corps, consisting of 8 advanced leaders and 30 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.

4. 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.

5. 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 10," and the Director of the Department is secretary of the association.

6. A tri-state basket-ball organization, patterned after that of the Western Conference, is promoted by this department, and the Director is president of this organization. The annual meeting was held on Saturday of Thanksgiving week, and was attended by 28 college representatives and 12 officials. This organization has become very popular in Minnesota, North and South Dakota, northern Iowa, and western Wisconsin, and its regulations govern the administration of rules in this section.

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.

Competition in swimming.—The University swimming team held competition in standard events with the Minneapolis Athletic Club, Shattuck School, St. Paul Y. M. C. A., and the Duluth Boat Club.

New features added during the year.—A team of 58 students participated in the Conference Mass Athletic Meet on May 25. While the limited number of entrants precluded the possibility of winning the meet, a start was made and considerable interest manifested, which augurs well for Minnesota's continued participation.

Recommendations for the future.—In view of the physical well-being of all men in the University, two urgent needs are again called to your attention: (a) a new gymnasium; (b) more ground for intramural sports. However, in view of the University's preparing men for service, which involves changes in curricula, and in the use of buildings, the matter is not urged at the present time, but it seems advisable that the need should be here recorded.

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 1917-18:

Physical examinations and consultations.—1. Full examinations were given to the following groups of students: (a) In all colleges 669 examinations of newly entering students. (b) In the College of Education 98 examinations of seniors who were candidates for teachers' certificates. Reports on their physical condition were sent to the Dean of the College. (c) In the required non-credit and the elective credit classes in physical training reëxamination of all students was made in the spring, 374 in number. (d) In the schools of agriculture newly entering students were examined and recommendations made regarding defective conditions: St. Paul 56, Morris 20, Crookston 22 students. Lectures in hygiene were also given at Morris. (e) In the University High School 69 examinations of newly entering students.

2. *Required health consultations.*—(a) All applicants for a reduction of college work on account of physical weakness or ill health were interviewed, and if their petitions were approved they were taken under the supervision of the Department and required to report weekly on carrying out prescriptions of hygienic living. There were 48 such cases in the autumn semester, and 37 in the spring. (b) All sophomores and juniors were interviewed individually and advised with concerning their health, 670 in all. In a majority of cases it was found that the student had been making earnest effort to correct those habits which had been interfering with healthful life. Cases needing medical attention were referred to practicing physicians. (c) Members of freshman physical-training classes were interviewed regarding irregularities of health and habits by members of the Department on the basis of their physical examination records and their weekly hygiene reports. Many were called in more than once for follow-up purposes. Between three and four hundred consultations of this sort were held. The subjects of advice were most frequently circulatory disturbances, lack of outdoor exercise, complaints of fatigue, and reports of insufficient sleep.

3. The nurse at Sanford Hall coöperated with this Department by helping in the physical examinations, by reporting cases of illness, and by giving 6 lectures in home nursing in the course on hygiene of the family.

Next year, in coöperation with the new Health Director, we should be able to exercise far more efficient oversight of the health of the women than ever before.

Courses in hygiene.—The same courses were offered as in 1916-17, 12 required lectures in preliminary hygiene for the newly entering students (631 students), an elective semester course in personal hygiene for sophomores, juniors, and seniors (15 students), and one in hygiene of the family for juniors and seniors (8 students).

Course in Principles of Physical Education.—The same course for senior students was offered as in 1916-17, and was taken by 7 students.

Courses in exercise.—1. Required: (a) All newly entering students were registered for elementary physical training, 543 in number. (b) All sophomores who had not learned to swim were registered in classes for swimming, 117 students.

2. Elective:

Intermediate physical training	62
Advanced physical training	15
Rhythmic expression	30
Organized games	37
Field hockey	69
Basket-ball	130
Baseball	70
Swimming	633*

* The pool was used under instruction to the extent of 4,797 "swims." In addition 921 "swims" were taken in hours supervised by the matron.

The season of indoor gymnasium work was closed as usual by a gymnastic contest in which all the elementary, intermediate, and advanced classes entered.

The increased interest in swimming which has been shown by the students this year is notable, and I think it is due largely to the swimming requirement which has compelled a great many girls to learn how to swim. Having attained that much proficiency, and finding the exercise a pleasant recreation, they come back to the pool to enjoy it again.

The use of the swimming pool is extended under the auspices of the Extension Division by the evening classes in which 90 students were registered for the year.

The Woman'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 has consisted of the Director, three full-time instructors, one part-time instructor, a secretary, an accompanist, a matron, and an auxiliary staff of three women physicians. During the summer additional clerical service was employed for tabulating statistics.

University High School.—The freshmen and sophomore classes were given the use of the gymnasium six periods a week, and were taught by two of our graduates. Gratifying results were obtained. Next year, with a regular member of this Department to take charge of this work, with the requirement extended to include juniors and seniors, and with supplementary classes offered in play and in orthopedic work, we shall expect to make a real contribution to the health of the high-school girls.

Notes on orthopedic work.—The orthopedic work does not figure in contests or in exhibitions, but the instructor is doing a very important work. Her report for the year shows her students distributed in the following groups:

Scoliosis (lateral spinal curvature)	25
Resistant and flexible round shoulders	15
Infantile paralysis deformities	2
Congenitally absent right forearm	1
Injured knees	2
Injured shoulder	1
Anemia with malaise	2
Sacro-iliac strain	1
Pelvic inflammation	1
Appendicitis	1
Heart lesion	2

She speaks especially of improvement in 22 of the scoliosis cases, which was marked in 10, and improvement in all cases of round shoulders. The girl without a right forearm had always been excused from exercise requirements in high school and had a very undeveloped body. She improved wonderfully in strength and in the spring developed into a left-handed pitcher in indoor baseball. The general health of most of the girls in the orthopedic group was below par at the beginning of the season and it is gratifying to hear the assurances which many of them gave later in the year of the improvement they had experienced.

The Summer Session.—Two courses in gymnastics—games and folk dancing and methods of teaching—were offered. Twenty students registered. Thirty-three students registered for a course in swimming, and there were 165 "swims" taken in the hours under the supervision of the matron.

Recommendations.—1. I would repeat my recommendation that the requirement in physical education be extended to include the sophomore year. An addition of two instructors to the staff would be adequate for this purpose. With our gymnasium and playground equipment, we ought to be reaching a much larger proportion of the students than at present is the case. Elective classes and freedom to use the swimming pool help the situation, but our health consultations with sophomores and juniors disclose a marked lack of exercise of any sort in a majority of cases. A large number of sophomore classes should be offered in order (1) to minimize the students' difficulties in arranging programs, (2) to permit a wide choice in the type of exercise, (3) to make it possible to limit the group to that size which is favorable to the acquirement of skill. Skill in any form of exercise tends not only to create a permanent interest in that form, but also to develop greater interest in exercise in general, an interest which we hope would show itself in more active habits after leaving college.

2. I would repeat my recommendation concerning the organization of a professional training course in physical education leading to a degree. The basic scientific and educational training could well be carried on in the departments which are equipped for that work, while the theoretical and practical courses in exercise and the supervision of practice teaching, for the women, could be handled by this Department, using the equipment of the gymnasium and a somewhat increased staff. Both from the standpoint of offering an opportunity within this state for young people to

receive thoro training in this specialty, and from the standpoint of providing well-trained teachers, there is real need for the careful organization of such a course.

The states of Michigan, California, Rhode Island, New York, New Jersey, and Maryland have passed laws requiring the teaching of physical training in elementary and secondary schools. At a meeting called last February by Commissioner of Education Claxton, he was authorized to appoint a committee to carry out a recommendation that a thorogoing program of health education and physical education should be put into force with federal aid for all elementary and secondary school children, both rural and urban, in every state in the Union.

In view of the widespread interest in building up our young men for the army, and the knowledge that it is as important to have a strong womanhood as a strong manhood, it seems as if required physical training for all may be a possibility nearer than we think. Even at present the lack of teachers of the subject for the states requiring it is serious, and a professional training course at the University of Minnesota would be an important contribution to the problem.

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 report for the year 1917-18 as follows:

Intramural sports have been put under great stress during the past season owing to war conditions. Practically all men in the colleges who were physical leaders have entered the army. Those who had not already done so were waiting for their calls, so that it was difficult to build up a substantial organization for the administration of sports. There was instituted an organization with a constitution and by-laws, so that the students could administer their own sports, but before the end of the year practically every representative of that organization had left college. The organization thus became ineffective and it was necessary to fall back on individual effort. However, it is not the intention to infer that nothing was done. Considering the unusual conditions more was accomplished, in proportion, than in former years. All activities were conducted as formerly, and new features were added, which were not possible before.

Football.—In football, war conditions were felt more than in any other sport. School started very late and most of the students were not of the football type. Only the colleges of Engineering and Agriculture were able to turn out full teams, and these teams played for the inter-college championship late in the season. The "Aggies" won by a substantial score. It is estimated that a total of 57 men participated in this sport.

Basket-ball.—The conditions in basket-ball were much nearer normal. This was due to several factors; more men play basket-ball, it is more suited to all types of men, and is especially suited to Minnesota climate. There were 22 fraternity teams, as against 23 in former years. Several fraternities kept up their athletic schedules, tho they were unable to keep their houses open. It is estimated that 194 men were reached in the fraternities. The championship was won by the Phi Kappa Sigma fraternity.

The college tournament had 8 teams entered and the College of Medicine won the trophy. It is estimated that 58 men were reached here.

Baseball.—There were 18 teams entered in the interfraternity tournament, and a schedule of games was played which averaged up to former years. The championship was won by the Kappa Sigma fraternity.

Eight colleges entered teams in the college tournament. The College of Dentistry won the championship. The showing was about the same as in former years. It is estimated that 111 men were reached in this sport.

Track and field events.—This work was left to the regular University track coach on account of its close relation to the development of 'varsity teams. The following tournaments were held:

Out of doors track events	
All-University meet	60 men
Freshmen and sophomore meet	42 men
Indoor events	
Inter-company track meet	126 men
Freshmen-sophomore meet	103 men
All-University	78 men

A mass track meet was held in conjunction with a similar movement in a number of the conference institutions. Minnesota entered a total of 58 men.

Hockey.—The condition was subnormal here. There were 8 fraternity teams, 2 college, and 2 class teams. There were more forfeited and postponed games in this schedule than in the past. The College of Science, Literature, and the Arts team won the college championship and the Chi Psi fraternity won the interfraternity trophy. It is estimated that a total of 84 men took part in this form of sport. It is to be noted that for several years the Committee has maintained a skating rink on Northrop Field, and that its popularity is becoming greater each year. No record of the optional use of the rink was kept, but from the large attendance it is known that the rink fills a need in University life, and is much appreciated.

Wrestling.—A tournament was held, as in former years, with 18 men competing, and also an All-University meet, in 6 different weights.

Swimming.—An intercollege swimming contest was held in the standard A. A. U. events. About 25 men competed in this meet.

Bowling.—A league was organized by the Interfraternity Athletic Association, and a schedule was arranged with 11 teams competing. An inter-campus league was organized, composed of 7 teams. About 100 men entered this competition.

An interacademic volley-ball tournament was held with 8 teams competing. Fifty-seven men participated in this tournament.

Sigma Delta Psi (the honorary athletic fraternity) trials were held, but were far below normal owing to the scarcity of athletic men in the University. Fifty-three men entered the events scheduled.

New features.—Boxing was added as a new feature. This proved a great success. Thirty men entered the tournament, competing in 6 different weights. This feature of the work will be continued.

An intramural "M" (old English design) was adopted by the Committee, and during the year 99 letters were awarded.

In all forms of sports that have been under the administration of the Committee it is estimated that 1,487 students competed. This does not exclude duplication where men competed in two different sports, nor where students played on a college and a fraternity team at the same time.

In view of the handicaps encountered the year was a successful one.

INTRAMURAL SPORTS FOR WOMEN

The Women's Athletic Association proved a very valuable instrument, as in former years, for fostering interest in athletic activities and for co-operating with the Department of Physical Education for Women in carrying out various competitions.

The membership of the Association for 1917-18 was 315. There was some falling off from the total of more than 400 reached in 1916-17, but the number was very satisfactory in view of the fact that the dues had been increased from twenty-five to fifty cents.

The patriotic calls for workers for the Red Cross and other war activities had a somewhat demoralizing effect on regularity of attendance on athletic practice periods. Moreover a new eligibility ruling of the Association, which required satisfactory scholarship of all members of class teams and others striving for athletic points, resulted in the discouragement of a good many ineligibles and their consequent absence from practice groups. Considering these drawbacks, the competitive sports of the women of the University made a very good showing.

Tennis.—Owing to the unusually late opening of the University (October 10, 1917) the fall tournament was omitted. A spring tournament of singles was run off, beginning April 20. Thirty-five girls enrolled.

Field-hockey.—Total number of girls participating, 69. Length of the season, October 13 to November 28. Practices were held at 4:00 Monday and Wednesday, and Tuesday and Thursday. Each class group was run by a class manager until November 16 when teams were chosen and captains elected. Eight practices were required to make a girl eligible for a class team.

An interclass tournament of 5 games was played November 22 to 27, and the junior team won.

Basket-ball.—Total number of girls participating, 130. Length of season, November 19 to March 22. Practices were held at 4:00 Monday and Wednesday, and Tuesday and Thursday. During the first two weeks girls who had never played before were coached in a group by themselves. Twelve practices were necessary to make a girl eligible for a class team. Class teams were chosen March 1 and the interclass tournament of six games was played March 7 to 15. The championship game between the two winning teams was played March 22.

Devices for stimulating the interest of more girls in taking part in the game were the odd-even games and the house basket-ball tournament. Both proved helpful.

A running score for the entire season was kept for the tournament between the seniors-sophomores and the juniors-freshmen (odd-even), regardless of the personnel of the teams on different days.

In the house basket-ball tournament all sorority houses, coöperative houses, and Sanford Hall were eligible. Six houses took part and a tournament was run April 2 to 8.

Ice-hockey.—All students were admitted to the University rink this year free of charge.

The total number of girls participating in ice-hockey was 59. Toward the end of the season 15 University High School girls came out to practice also.)

The length of the season was January 7 to March 14. Practices, in which the girls were arranged in groups by classes, were held at noon daily. Five practices were necessary for eligibility to class teams. Great appreciation is felt of the good-will of four men students who voluntarily served regularly as coaches.

Class teams were chosen January 31 and a tournament of four games was played March 4 to 14. The tournament was postponed on account of the warm weather which spoiled the University rink. Arrangements were made later by the Intramural Committee whereby the tournament games were played on the Hippodrome rink.

Baseball.—Total number participating, 70. Length of season, April 10 to May 25. Baseball suffered especially from the factors mentioned in the opening paragraph, and also because many of the girls had by spring won as many points as the Association permits in one year, and therefore they were not sufficiently interested to attend practices regularly. For the sake of general interest a tournament was played off, tho the number of ineligibles was so large that no points could be awarded. It was felt that it was better for the sport not to omit the tournament entirely.

Swimming.—The total number of "swims" in "general swimming" (without instruction) was 900. The total number of girls who appeared in elective classes was 455. An advanced contest was held May 10, with 14 contestants. An elementary contest was held May 20, with 12 contestants.

A 100-point contest was in force during the year, for the purpose of stimulating regularity of attendance and of attaining proper execution of various strokes and aquatic feats. A girl must have swum 25 times before she could qualify for this test. Twenty-one girls entered for the elementary test and 6 won their point on it; 19 entered for the advanced test (including life-saving) and 3 won their point on it.

Interest in swimming was also stimulated by 3 exhibitions given during the year, 2 by particularly accomplished swimmers among our students, and 1 by an amateur girl champion, Selma Darby.

Walking.—Nineteen girls made reports on walking jaunts of 5 miles or more.

Field-day occurred May 25, and the championship games which finished the season's tournaments were played in Newcombe (between the freshmen classes), house baseball, and class baseball.

The presentation of trophies was a feature of field-day, with the arm bands and arm band emblems which signified the winning of points toward the athletic seal, the class cups for the winter and spring sports, and the athletic seals for the fortunate girls who had won them. As a patriotic act in the interest of the conservation of leather it had been decided not to present the regulation burnt leather seals this year but to

substitute printed certificates signifying the girl's accomplishment and the reason for omitting the leather seal this year. Eleven girls won these seal certificates, which stand for good sportsmanship, athletic ability, healthful life, and satisfactory scholarship.

Respectfully submitted,

L. J. Cooke, *Acting Chairman*

THE MILITARY DEPARTMENT

To the President of the University:

SIR: I herewith submit a report of the Military Department for the year 1917-18:

Organization.—A Senior Division, Reserve Officers Training Corps. Authorized by the War Department, December 6, 1916, under General Orders 49, 1916. Organized as a regiment of infantry (Field and Staff Officers, Band, Headquarters Detachment, and eighteen companies (18) of infantry.)

Strength of Corps.—Thirteen hundred and eleven men (1,311) maximum.

Time devoted to work.—October 10, 1917, to May 30, 1918. Three (3) hours per week for freshmen and sophomores. Five (5) hours per week for juniors and seniors.

Instruction.—Drills, one hundred and fifty-one (151). Classes, one hundred and ninety-seven (197). Lectures, forty-nine (49). All instruction, both practical and theoretical, followed closely the subjects and method prescribed in G. O. 49, War Department, 1916. Drills were held on Tuesdays, Wednesdays, Thursdays, Fridays, from 2:00 to 5:00 p.m., and on Saturdays from 9:00 to 12:00 a.m. A portion of the drill period for freshmen and sophomores was, frequently, devoted to classes and lectures.

Advanced course.—For juniors and seniors. Enrolled, seniors, three (3); juniors, fifty-four (54). These men are required to take three (3) hours drill and two (2) hours class or lecture per week. Lectures, Tuesday, Wednesday, Thursday, and Friday, from 11:00 to 12:00 a.m.

Camp.—Twenty-nine (29) advanced course men and ninety-eight (98) underclassmen were sent to the R. O. T. C. camp at Fort Sheridan, Illinois, from June 3, to July 3, 1918. Total, 127.

Completed military course.—One (1), James E. Mulligan, graduated (4th year). Name reported to the Adjutant General, U. S. Army, and to the Adjutant General, State of Minnesota.

Completed third year.—Thirty-three (33) juniors.

Total attendance.—Drills, classes, and lectures, thirty-one thousand (31,000), plus.

Disbursements to students by Commandant.—

O. D. uniforms	$15,876.00
Cotton K. uniforms	1,243.33
Com. of Sub.	2,742.30
Total	$19,861.63

Annual inspection.—Held on April 1, 1918, by Lieut. Col. Jas. V. Heidt, 45th U. S. Infantry.

The inspection was held at an earlier date this year than is usual, and owing to snow and wet weather, the corps had held but two drills on the campus before the Inspector arrived. His report is one of the most favorable I have ever known given to any institution not wholly military.

I quote:

"All War Department Orders carried out.
1. Review and inspection, very good
2. Parade, very good
3. Band (music), excellent.
4. Company close order drill, very good
5. Company extended order drill, very good.
6. Squad extended order drill, very good
7. Physical drill, very good
8. Battalion drill, good
9. Regimental drill, good
10. Uniforms, very good
Military spirit, excellent."

Remarks.—We have had neither arms nor equipment this year and the work of training the students has been carried on under great difficulties. During the second semester we used two hundred old guns (obsolete model) which the Home Guard loaned us in return for the use of the Armory. The only advantage to the students in using these guns was instruction in the manual of arms.

The spirit of the corps is excellent. In the main, the men have done as well as could be expected of any student body not wholly under military control.

Losses.—During the college year 445 men in the corps cancelled in college and left school. Many of these enlisted in either the Army or Navy. One hundred and seventy-four men were found unfit for military service and substituted "special gymnasium."

The Inspector recommended that "no change be made in the classification of the University for another year." This seems to indicate that the University will be continued in the class "distinguished." I hope that this will be done, the institution deserves it, but I confess, to do so, the War Department would be at least liberal in construing the rule, as we have had neither arms, ammunition, nor equipment. Uniform for corps, regulation O. D.

Agricultural School.—A short term school, not members of the R. O. T. C. Organization: A battalion of infantry, and band. Maximum strength, two hundred and thirty (230). Time devoted to work: November 15, 1917, to March 20, 1918. Three (3) hours per week, from 2:00 to 5:00 p.m., Mondays. Equipment: none. Uniform: cadet gray.

Respectfully submitted,

S. Y. BRITT, *Capt. U. S. Army, Ret., Commandant*

THE GEOLOGICAL SURVEY

To the President of the University:

SIR: I submit herewith my report as Director for 1917-18.

When the United States entered the war as a belligerent, all of the resources of the Minnesota Geological Survey were directed to the investigation of mineral products essential for war purposes and related industries. 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 1917-18 there were under investigation the following problems:

1. Detailed survey of the Mesabi iron range from Mesabi station to Birch Lake, by Professor F. F. Grout and Dr. T. M. Broderick. 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 have shown the position and character of the workable beds. The concentrate from these beds is a very high-grade iron ore and carries extremely low phosphorus, being superior probably to any iron ore in the United States. A small plant in Duluth is making a product from these ores, which is used for the manufacture of ordnance and armour-piercing shells. The ore competes with ores imported from Chile and from Europe, which are now difficult to obtain on account of the shipping situation. 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. The field work for the geological survey of this district was essentially completed in the summer of 1917. Since then the study of material and the preparation of the report have been in progress. Professor Grout was called to Washington early in 1918, to serve on the Shipping Board, and this resulted in considerable delay. He returned to devote a month to this work in September and October, and at present the map is completed and the report will probably be transmitted within the year. Since the completion of the mapping, Mr. Broderick has made brief trips to the range to keep in touch with developments and to assist in the solution of geological problems which arise in connection with the opening of quarries on the magnetic beds.

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 in press and will be issued before the end of 1918. Its appearance will be timely in view of the fact that the largest reserves of manganiferous iron ore in the United States are on the Cuyuna range.

3. Detailed study of manganiferous ore deposits. Nearly a million tons of manganese and manganiferous ore are used annually in the United States, and in normal times almost all of it is imported from Russia, Brazil, and India. Supplies from Russia are no longer available. 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 from mines within our boundaries 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 by our steel masters. 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 on laboratory work, and Mr. Frank Krey on geological field work connected with this problem. The results obtained are gratifying, and if the processes are equally effective in large-scale practice, 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, running well into the millions.

4. Investigation of moulding sands for iron and brass foundries and other moulding sands near the Twin Cities, by Mr. G. N. Knapp, assisted in the laboratory by Mr. M. G. Hanson. The foundries of Minneapolis and St. Paul have for many years been important industries, but as a result of developments connected with war contracts, they recently assumed increased importance. 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 2 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 has been still further augmented by the contracts negotiated for war materials. 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 mould into which the

liquid is poured as it does on the composition and purity of the metal itself.

There are many carloads of moulding sand delivered in the Twin Cities by railroads each year. This is a serious load on transportation and at some times during the past winter deliveries were uncertain owing to the congested condition of traffic. A survey disclosed the fact that many foundries are without laboratory facilities to test their moulding 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 in the home pit 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 159 samples were collected, about one third of these being samples of sands in actual use in the local foundries, while the others 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. Arrangements are now being made to test at once some of the sands recently discovered in the local foundries, so that in case they prove satisfactory, there will be time for local foundries to procure supplies before the ground freezes.

5. The survey of the surface formations and agricultural conditions of Minnesota, by Professor Frank Leverett and Dr. F. W. Sardeson, is completed and the map, in three large sheets, has been published. One of these, treating the northwest part of the state, is issued and may be found in a pocket in the back of *Bulletin* no. 12 of the Survey; another, treating the northeast part of Minnesota is contained in a pocket attached to *Bulletin* no. 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 ultimately also in the pocket of *Bulletin* no. 14, which is in press and will soon be available for distribution. 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 in press and will be issued this year. Owing to the coal shortage and the increased cost of coal, conditions are becoming more favorable to the economic exploitation of peat fuel of which the reserves in Minnesota amount to about seven billion tons.

In addition to the more comprehensive investigations outlined above, many inquiries concerning the geological structure in various places by those who contemplate drilling for water or ore, are received in the offices of the Survey, 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 BOTANICAL SURVEY

To the President of the University:

SIR: I beg leave to submit the following report for the year 1917-18:

No official work has been done on the Botanical Survey for the year 1917-18 for the reason that no appropriation was made to carry it on. Two members of the Botanical Staff have, however, in a small way and wholly at their own expense, continued phyto-geographical and systematic studies of the vegetation of the state. Most of this work has been done in the southeastern and eastern parts of the state as far north as Carleton, Mille Lacs, Aitkin, and Crow Wing counties.

In this work special attention has been given to the ranges of some of the principal native species of trees and shrubs, and the relation of the distribution of these species to the different kinds of soils. Many plant species hitherto not recorded for the state, as well as undescribed species and varieties, have been found. The materials and data collected are being worked up and the results of some of these observations are ready for publication.

Respectfully submitted,

C. O. ROSENDAHL, *Chairman of the Department*

THE ZOOLOGICAL SURVEY

To the President of the University:

SIR: I have the honor to submit to you and the Board of Regents the following report of the condition and the activities of the Museum of the Zoological Division of the Geological and Natural History Survey of Minnesota for the period from January 1 to November 1, 1918. A full report, covering the entire time of my active connection with the Survey and Museum to January 1, 1918, was forwarded to Dr. George E. Vincent in New York at his request, a copy of which was placed in your hands.

MUSEUM

Exhibits.—Work has been continued uninterruptedly by the museum taxidermist, Mr. Jenness Richardson, on the large beaver group being installed on the third floor of the Animal Biology Building. Mr. Reubens, of this city, has been employed to finish the background painting, which was unavoidably left incomplete by Mr. Corwin. This group is now almost ready for final assembling and will unquestionably be a remarkably attractive and valuable addition to the museum. Both because it depicts a real and novel scene in Itasca State Park and because the Beaver is an animal that historically and in itself interests so many people, this exhibit, we are sure, will attract the special attention of a large number of visitors to the museum.

The passenger pigeon group, referred to in the last report, is now completed. It consists of a beautiful pair of these now extinct birds, with a genuine nest and egg, displayed in their natural surroundings. So far as can be learned this exhibit is unique of its kind.

A small group containing a pair of yellow warblers and a two-storied nest shows the manner in which this bird buries the eggs of the parasitic cowbird. This has just been finished and is on exhibition in a special case.

Donations.—No considerable donations have been received. Gifts to the Museum of valuable material have been declined as there is no way of properly caring for them with the present lack of funds for providing display cases or safe storage. Mr. C. M. Loring of Minneapolis presented to the Museum last spring a large section of bark from a Redwood tree, containing many acorns embedded there by the California woodpecker. It is on exhibition in the bird study room. A very large and fine specimen of beaver cutting has recently been received from Itasca Park through the kindness of Professor J. P. Wentling of the forestry school. It will be an interesting exhibit in connection with the beaver group.

Publications.—Nothing except occasional articles by the Curator in periodicals has been published as coming from the Museum. A paper entitled *A Review of the Ornithology of Minnesota* by T. S. Roberts is now ready for the printer and has been accepted for publication by the Editorial Board of the Graduate School in the Current Problem Series.

It would be greatly to the advantage of the Museum to have zoological papers appear as frequently as possible as museum publications. An original plan to issue a regular Museum bulletin has never been realized through lack of funds to support it. Such a publication could be made an aid in the development of the Museum.

Photography.—Negatives: About 500 glass plate negatives have been added to the Museum collection since January 1. About 50 of these were made in the field. The remainder are from various library sources and were made by the Curator in the course of assembling illustrative material for lecture purposes. *Slides:* Between 400 and 500 slides have been made and almost all of them colored by the museum assistant, Miss Clara K. Carney. These are of permanent value in the lectures given to the classes in Ornithology and in illustrating public lectures. *Moving picture film:* The Curator has taken for the Museum 1,233 feet of movie film during the past summer. This is all illustrative of wild bird life and adds several new features to the reels already on hand.

Lectures.—A course of 12 lectures on the general subject of ornithology and 4 on the bird life of Minnesota were given by the Curator during the spring months in the small lecture room in the basement of the Animal Biology Building. These were illustrated with slides and moving pictures and were open to the general public. The attendance varied from 35 to 75. An illustrated lecture was given before the Game Association in St. Paul and one before the Audubon Club of Minneapolis.

Attendance.—An increasing number of adults and school children visit the Museum. Rarely an afternoon passes that there are not a number of people in the building studying the exhibits. If the Museum could be open on holidays and Sunday afternoons there would be a large attendance even with the present limited display.

Correspondence.—A constant correspondence has been maintained with a large number of people throughout the state who are interested in natural history and appeal to the Museum for information and the identification of specimens.

Live beavers.—The two live beavers presented to the Museum by Mr. Carlos Avery, Game and Fish Commissioner, and mentioned in the last report, are still doing well in the out-door pool and are a never-ending source of interest and study to hundreds of school children and adults. They have grown to nearly full size and have constructed a large lodge exactly like those found in the northern wilds.

FIELD WORK

With the exception of occasional short trips for photographic purposes in the vicinity of Minneapolis, no field work was done during the past summer. This was due in part to the necessity of conserving funds on hand for museum maintenance.

FINANCES

With the exception of a small credit at the University storehouse for incidentals, the support of the Museum during the present period has been, as in the past, from voluntary contributions. A monthly check for $50 has been received from Mr. James F. Bell, and the sum of $1,390.95 has been made available from another source since January 1 last. A check for $50.12 was received from Mr. Russell M. Bennett on January 9, 1918, to pay for an electric motor to be used to operate a tanning plant in process of construction in the basement of the building. One of the two large drums necessary for this plant has been donated by Mr. Franklin M. Crosby. This motor and the drum have been installed by the University at the expense of the Museum fund but could not be used at present, if needed, as the room is in use by the Botanical Department.

The considerable expense incident to the construction of the beaver group is being paid out of the Museum fund, this course being considered allowable as the fund is a donated one. In the opinion of the Curator, money provided by the state should not be used to install these large expensive groups. Such exhibits should and can be secured as gifts from interested public-spirited citizens.

The passenger pigeon group referred to above was not paid for out of the Museum fund.

The services of a museum and office assistant have been dispensed with since July 1 when Miss Carney left to enter Federal service at Washington. The only paid employee of the Museum at present is the taxidermist, Mr. Richardson, who is receiving a salary of $125 a month, but is entitled to at least the $150 that men of his ability are paid elsewhere.

The Museum donation fund contains at the present date a balance of $706.95, deposited in the First National Bank of Minneapolis, to the credit of Thos. S. Roberts, Trustee. A considerable portion of this amount will be required to finish the beaver group.

Following is a copy of a budget submitted through the Dean of the College of Science, Literature, and the Arts, indicating the minimum amount that is needed to maintain properly and conduct the Museum each year for the next two years. This amount will not provide cases for exhibiting a synoptical collection of mounted birds and mammals of the state as was planned but since, under present crowded conditions, there is no space available for such a display this is not a requirement at this time.

ESTIMATE OF ANNUAL BUDGET FOR ZOOLOGICAL MUSEUM, UNIVERSITY OF MINNESOTA

Taxidermist's salary	$1,800
General Museum and office assistant	1,000
Publication, printing, etc.	700
Additional metal cases for storing specimens	300
Six display cases for installing small groups	500
Photography, field work, and incidental Museum supplies	1,200
Total	$5,500

This amount is needed as an annual budget for the maintenance of the Zoological Museum of the Geological and Natural History Survey of Minnesota. An amount nearly equal to this has been expended annually for the last two years.

The further development of the Museum seems to be absolutely dependent upon securing a maintenance fund from the state. During the past three years donations have been secured with the understanding that a temporary necessity existed. It will be difficult if not impossible to continue this means of support and it would be most unfortunate to suspend operations at this time when so much has been accomplished and so much has been done in good faith by generous and disinterested friends of the University. It is suggested that any fund provided should be specified as a separate budget for the use of the Museum of the Zoological Survey and not as an item of the budget of the Animal Biology Department of the University. The Zoological Museum is an activity of the State Zoological Survey rather than of the Department of Animal Biology.

Respectfully submitted,

THOS. S. ROBERTS, *Curator*

THE UNIVERSITY LIBRARY

To the President of the University:

SIR: I beg to submit herewith the report for the University Library for 1917-18.

Through the courtesy of the Board of Regents in permitting me to give my services to the Red Cross, I have, in consequence, been able to devote but a small portion of my time to the administrative work of the library during the past year. I desire to express my appreciation of the opportunity that this permission has afforded me of assisting in the organization and administration of the work of the Northern Division.

By reason of this fact and for other reasons connected more or less directly with the war, the Library has not been able to make the progress during the last year that might have been desired; but we have, as best we could, continued our operation and have adapted our work to war conditions.

The funds at the command of the Library have been less than in former years and the condition of the book market has been such that many things were unobtainable. Our foreign agents have been greatly hampered by reason of the fact that the majority of their staffs are serving under the colors and in consequence they have been able to give us only partially satisfactory service.

Reading-room.—The statistics of the use of books in the two reading-rooms show a very surprising gain over those of the previous year. It is evident that the spirit of unrest which reflected itself in a decreased use of the Library in the latter part of 1916 was in a measure overcome in the succeeding year. It is undoubtedly true in addition that the improved facilities for work in the undergraduate reading-room did a great deal to stimulate study. The fact that students working in that room can secure their books without recourse to the Library catalog and can use them with very great freedom has been very beneficial. The total recorded use of books for the last three years has been:

1915-16	168,774
1916-17	147,543
1917-18	200,629

One of the most gratifying features of this increase has been the fact that the number of books loaned to students for home use was more than 50 per cent greater than the preceding year.

Throughout the entire year the reading-room was crowded very nearly to its capacity during the entire day, and at certain hours it has been quite impossible to give accommodation to all of the students who wished to use the library. This condition is very greatly hampering the work of the University, but it can only be corrected by the erection of a new building.

Inter-library loans.—The librarian desires to acknowledge in this public way the courtesy extended to the University by other libraries in the loan of books needed by men engaged on various problems of research. A total of 308 volumes has been borrowed in this way during the year from the institutions named below.

Boston Public	3	New York Agricultural Experiment Station	1
Brown	1	Northwestern	1
Bryn Mawr	2	Princeton	3
Case Memorial	1	Surgeon General	175
Columbia	3	U. S. Bureau of Fisheries	1
Cornell	8	University of Chicago	45
Hartford Theological	3	University of Illinois	2
Harvard	10	University of Kentucky	1
Hennepin County Medical	3	University of Pennsylvania	1
John Crerar	1	University of Wisconsin	3
Johns Hopkins	1	Wisconsin Historical Society	15
Library of Congress	21		
Yale	3		

The Library catalog.—The illness of members of the cataloging staff decreased considerably the volume of work handled by them during the year. Miss Edna Goss, whose scholarly and effective work as head cataloger has been of the greatest service to the University, was finally obliged to take a leave of absence on account of ill health. Her position was filled temporarily and, when Miss Goss found herself unable to return, permanently, by Miss Currie, who had previously acted as revisor. Miss Currie's position we were unable to fill during the remainder of the year.

The accessions of the year were, however, fully recorded and we were able to make some progress in cataloging the Monod Collection. Very little was accomplished in giving a permanent record to the uncataloged sections of the Library as, with our present staff, the current work absorbs practically all their time. The statistics of the year's work are as follows:

	Central Catalog	Departmental Catalog
Titles cataloged	9,045	1,755
Volumes cataloged	9,835	2,940
Printed cards added	23,747	4,771
Typewritten cards added	10,685	1,749
Printed shelf list cards added	3,096	516
Typewritten shelf list added	3,312	836
Volumes added	4,859	1,816
Total volumes recorded	218,297	
Agriculture author entry cards added		1,251

Cards amounting in value to $392.63 were purchased from the Library of Congress and under the scheme for coöperative cataloging, copy for fourteen titles was furnished to the same library.

Additions.—Mr. Heyl, the head of the order department, reports the following expenditures for books, periodicals, and bindings:

	Books	Periodicals	Binding	Totals
General Library	$14,707.21	$3,003.83	$3,435.65	$21,146.69
Law Library	3,331.38	123.05	513.65	3,968.08
Agricultural Library	1,812.85	1,016.52	446.58	3,275.95
Crookston	348.89	.....	49.92	398.81
Morris	175.26	.....	28.25	203.51

The grand total of expenditures is $28,993.04.

The money for binding was spent in the following manner:

	Cloth		Cowhide		Morocco		Pamphlets	
	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.
General Library	3,396	$2,549.19	345	$412.99	330	$437.77	357	$35.70
Law Library.....	627	512.30	...	.....	1	1.35	...	.....
Agricultural Library..	399	298.55	114	123.98	5	6.35	182	18.20
Crookston	55	47.52	...	.....	2	2.50	...	.....
Morris	30	28.25	...	.....	...	.....	...	.....

The total expended for binding is $4,474.05. The rebinding for the year cost $611.55, leaving the total for newly bound books at $3,862.50.

Mr. Heyl's report continues:

"The unusually low total of book expenditures requires an explanation which is, of course, furnished by the war. At present we have more outstanding orders than at any other time since I have been connected with the Library, which fact is due to the abnormal condition of the book market both in this country and abroad. The orders made out during the year cover the annual appropriation, but the figures given above are for the actual amounts paid out against bills. There are orders which total approximately $8,000 of last year's appropriation which are unfilled, and in addition to that amount is the large number of orders for books published in Germany, none of which have been received since my last report.

"During the last year arrangements were completed whereby periodicals may now be secured from Germany. The matter was arranged by Dr. Raney, Secretary of the A. L. A. Committee on Importations, with the Department of State, Washington. The goods are sent either by way of Holland or Switzerland, and come to this country addressed to the Dispatch Agent of the State Department, New York, under the U. S. seal. The goods are then distributed to the various institutions. Altho these arrangements were completed last year none of the periodicals were received until the present year was well under way.

"I should like to add in closing that the additions to the Romance collection have been most gratifying. With the purchase of German books almost entirely cut off, we have expended much more money in this direction. The Spanish and French collections are much more extensive now than they were a year ago and some additions have also been made in the field of Italian literature."

Exchange and sale of publications.—The number of publications from the University press has been somewhat reduced. The Library has distributed to its exchanges only the following:

Agricultural Experiment Station Bulletins nos. 169, 171, 177, 173, 174
Current Problems Series no. 9
Studies in Biological Sciences no. 2
Studies in Social Sciences nos. 7, 8, 9, 11, 12, 13
Doctors' dissertations, 6
President's Report, 1915-16
Regents' Report, 1915-16

The college libraries and departmental collections.—There has been no material change in status of the collection of books outside of the main Library during the past year. The congestion in the Medical Library has been slightly reduced by opening for stack purposes, an adjoining room. The relief is but slight and more radical measures must be taken before the situation in that library is to become satisfactory to the Faculty and students of the Medical School.

The conditions under which the students in the College of Education are compelled to work, continue to be, as I reported a year ago, exceedingly unsatisfactory. Under a temporary arrangement a large number of books needed by the graduate students in that College have been transferred to a room in their building, but as these books are frequently needed for reference by students working in other lines and in other colleges, the arrangement has been in no way satisfactory. No adequate solution of the problem can be found until the new Library building is erected in which properly equipped seminar rooms are assigned for the use of the students in education.

The libraries of the College of Pharmacy, of the College of Dentistry, and of the College of Chemistry, are still administered by untrained helpers. It would be very desirable if an assistant trained in the use of the books of these specific fields could be placed in each of these libraries, but budget conditions have thus far made it impossible.

The proposed library building.—The congested condition of the University Library building is every year becoming more acute and, as the institution expands, the inadequacy of the present equipment becomes progressively evident. I do not need to repeat the statements made in former reports as the facts are well known to every member of the University. At various times during the year resolutions passed by the Library Committee, by the Faculty of the College of Science, Literature, and Arts, and by some of the departmental Faculties were brought to the attention of the Administrative Committee of the Senate and were sympathetically received. Preliminary consideration of the problem involved has been referred to a sub-committee of the Administrative committee, and a report will doubtless be presented in time for incorporation in the next legislative budget.

Respectfully submitted,

J. T. GEROULD, *Librarian*

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, 1918:

War conditions.—A large number of fraternity men volunteered for service during the year, and the constant uncertainty in the case of a good many others emphasized a situation already acute. Notwithstanding this condition of affairs, a majority of the fraternities came through the year successfully.

Scholarship.—The following table compiled in Dean Nicholson's office shows the relative ranking of the fraternities for the year 1916-17, indicating a slight improvement in scholarship over the average of the previous year:

SCHOLASTIC COMPARISON, 1916-17

FRATERNITY	PER CENT
Acacia	1.342
Beta Theta Pi	1.342
Alpha Sigma Phi	1.322
Sigma Phi Epsilon	1.104
Chi Psi	1.099
Phi Delta Theta	1.061
Phi Kappa Psi	1.019
Alpha Delta Phi	.991
Delta Tau Delta	.981
Sigma Alpha Epsilon	.975
Delta Chi	.973
Delta Upsilon	.967
Delta Kappa Epsilon	.966
Phi Kappa Sigma	.963
Kappa Sigma	.894
Alpha Tau Omega	.867
Sigma Chi	.847
Theta Delta Chi	.838
Phi Sigma Kappa	.811
Phi Gamma Delta	.784
Sigma Nu	.774
Zeta Psi	.7105
Psi Upsilon	.634

METHOD OF DETERMINING VALUE OF GRADES

A in a one credit subject would equal 3 points.
B would equal 2 points.
C would equal 1 point.
D would equal ½ points.
E would equal 0 points.
F would equal —1 points.
I would equal 0 both in credits and points.

Scholarship of pledgemen.—Candidates for initiation in 1917-18 must have a grade of pass or better in 75 per cent of their studies (no man

eligible unless carrying eleven or more hours work). The following table shows the number of men pledged, the number eligible for initiation, those ineligible, and the percentage of ineligibles.

Fraternities	Total pledged	Eligible	Not eligible	Per cent not eligible
Acacia	18	18	0	00.
Alpha Delta Phi	6	5	1	16.66
Alpha Sigma Phi	17	12	5	29.4
Alpha Tau Omega	13	10	3	23.
Beta Theta Pi	14	9	5	35.7
Chi Psi	6	6	0	00.
Delta Chi	6	3	3	50.
Delta Kappa Epsilon	11	8	3	27.27
Delta Tau Delta	6	4	2	33.33
Delta Upsilon	12	7	5	41.66
Kappa Sigma	20	15	5	25.
Phi Delta Theta	6	6	6	00.
Phi Gamma Delta	7	6	1	14.28
Phi Kappa Psi	..	..	..	.....
Phi Kappa Sigma	13	11	2	15.38
Phi Sigma Kappa	9	4	5	55.55
Psi Upsilon	8	7	1	12.5
Sigma Alpha Epsilon	4	2	2	50.
Sigma Chi	7	7	0	00.
Sigma Nu	12	8	4	33.33
Sigma Phi Epsilon	14	8	6	42.85
Tau Kappa Epsilon	10	10	0	00.
Theta Delta Chi	8	3	5	62.5
Zeta Psi	6	5	1	16.66
	233	174	59	26.36

The report of Phi Kappa Psi is not included because several men were initiated who were below grade in their work; a direct violation of the rule governing fraternity initiation.

Respectfully submitted,

James Davies, *President*

THE GENERAL ALUMNI ASSOCIATION

To the President of the University:

SIR: I submit herewith the report of the General Alumni Association for 1917-18.

The year 1917-18 has marked some advance in the work of the Association. An effort was made, early in the year, to secure from the alumni expressions of opinion concerning the University and suggestions for improving its service to the state. Many letters were gathered and published—for the most part these letters contained helpful suggestions and not a few contained genuinely helpful and worth while ideas.

The Association raised $738 to pay the University's membership in the American University Union in Europe. Five hundred dollars covered the membership and $238 were a contribution toward the equipment of the Union.

The Secretary of the Association has been a member of the University committee to provide a medal for every University man and woman in service. The plan has been carried out and the medals are being sent out as rapidly as it is possible to secure definite addresses.

The year has been marked by the establishment of a new standing committee on grounds and buildings. This committee has been active, and has made some very valuable suggestions which have been incorporated into a statement that has been approved by the board of directors and submitted to the Board of Regents.

The Association has also revived a custom, discontinued for some years past, of submitting to the Board of Regents a statement embodying ideas and suggestions which the alumni think it would be worth while to consider.

A very definite effort has been made to arouse the alumni living in Minnesota to the necessity of taking an active interest in the election of high-grade men to the legislature—men who will agree to give unprejudiced consideration to the requests made for the University by the Board of Regents.

One third of the senior class of 1918 has signed up to take out life memberships in the Association and to subscribe for the *Minnesota Alumni Weekly*.

In addition, the Association has been engaged in trying to promote the welfare of the University in every way possible. The Secretary is always at the service of the University or anyone desiring information about the institution. He is frequently called upon, sometimes many times a day, for such service.

Respectfully submitted,

E. B. JOHNSON, *Secretary*

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 1917-18.

Entrance requirements.—The only change to be recorded is that in Engineering and Architecture. Heretofore, the requirements were stated as follows:

1. English, three units.
2. Elementary algebra, one unit; higher algebra, one-half unit; plane geometry, one unit; solid geometry, one-half unit; chemistry, one unit.
3. Enough additional units to make a total of 15 of which not more than three may be in Group F. One unit may be accepted in lieu of any one of the above required subjects, but if this substitution be in mathematics or chemistry the resulting deficiency must be removed as specified by the college requirements.

At the present time the requirements are as follows:

1. English, four units; or English, three units, and foreign language, two units.
2. Mathematics: elementary algebra, one unit, plane geometry, one unit.
3. Enough additional work to make in all fifteen units, of which not more than four may be in Group F.

High-school students desiring to enter this College are urged to take advanced algebra, solid geometry, and chemistry in high schools. Students entering with deficiencies in these subjects will be required to take courses covering these deficiencies in the University before they can proceed with other work which depends upon these subjects.

All colleges of the University now recognize four entrance units in Group F (vocational and miscellaneous studies).

The only colleges requiring mathematics beyond elementary algebra and plane geometry are the School of Chemistry, which requires higher algebra, and the School of Mines (4-year course) which requires higher algebra and solid geometry.

Qualitative factors.—Nothing further has been accomplished towards establishing mental tests as an entrance factor. However, last spring the Senate voted "that each superintendent or principal be asked to furnish the University, in addition to the customary data given on the admission blank, a personal statement of the student's capabilities and aptitudes." These estimates of the entrants will be filed with the Dean of Student Affairs.

The letter of warning heretofore sent to prospective entrants having low scholarship records has been eliminated.

Accredited schools and colleges.—By action of the University Senate the following schools have been recognized in the capacity indicated.

1. Preparatory schools:

a. St. Mary's College, Winona; Luther Academy, Albert Lea; Cretin High School, St. Paul; and the Cathedral High School at St. Cloud, provisionally have been placed upon the accredited list for one year, and will be reinspected next year.

b. St. Mary's Academy, Graceville, is continued on the accredited list for another year in view of the improvements made at that school during the past year.

c. The Danish-Norwegian Seminary, at Hutchinson; Maplewood Academy at Maple Plain; Parker College, Winnebago; Cathedral High School (Winona) and Cotter Commercial High School, Winona, are continued on the list of provisionally accredited schools, during the ensuing year.

2. Junior colleges:

a. St. Mary's Hall, Faribault, and Villa St. Scholastica, Duluth, are allowed advanced standing on a one-year basis.

b. Work at Rochester, St. Benedict's, Hibbing, and Cloquet is recognized on a two-year basis.

c. Work at Faribault is recognized on a one-year basis.

d. Students who have completed college work at Jackson are allowed the appropriate advanced standing for work already completed, it being understood that the school will not continue to offer college work after this year.

Additional credit for normal-school work.—Heretofore, sixty credits of advanced standing have been the maximum allowed at the University for any amount of normal-school credit. This has been increased to seventy-five credits under the following conditions:

Graduates in the three-year course in the state normal schools of Minnesota may receive not more than seventy-five credits in the College of Education at the University of Minnesota; credits earned in the three-year normal-school course shall be applied in case they are deemed of equivalent merit, in the College of Education to courses leading to certificates for supervisors in elementary grades, as principals in state graded schools, as teachers in junior high schools, or in normal school departments in high schools; students coming from the three-year course in normal schools shall not receive certificates in high-school subjects from the University without completing the prescribed courses of the University of Minnesota for such certificates.

University Examiner.—Miss Clara Hankey, formerly chief clerk in the Registrar's office, has been appointed University Examiner and will immediately assume active charge of entrance credentials and advanced standing. As the advanced standing officer, she will coöperate with the Senate Committee on the Relation of the University to Other Institutions of Learning in standardizing and unifying the requirements and practices.

Enrollment.—Table and comments will be found on pages 41 to 59.

Respectfully submitted,

E. B. PIERCE, *Registrar*

FINANCIAL REPORT

To the President of the University:

SIR: I submit herewith a report of the financial operations of the University of Minnesota covering the fiscal period ending July 31, 1918.

Respectfully submitted,

G. H. HAYES, *Comptroller*

SUMMARY OF RECEIPTS

1917-1918

RECEIPTS

Receipts from Students		
Tuition and Fees	$313,163.53	
General and Military Deposits	78,548.52	
Dining Halls, etc.	270,394.91	
		$662,106.96
Receipts from Interest		
Swamp Land Interest	37,122.20	
Land Contracts	9,116.83	
University Land Fund	48,596.62	
		94,835.65
Receipts from Federal Government		
Morrill Fund	25,000.00	
Nelson Fund	25,000.00	
Hatch Fund	11,250.00	
Adams Fund	11,167.78	
Smith-Lever Fund	49,730.63	
		122,148.41
Receipts from State		
23/100 Mill Tax	369,214.26	
Maintenance Appropriation	920,020.00	
Sundry Support Appropriation	444,980.00	
Extraordinary Repairs and Buildings Appropriation	125,250.00	
Peat Soil Investigation	6,000.00	
Fire Loss, Beef Cattle Barn	29,248.50	
		1,894,712.76
Receipts from Other Sources		
Dental Infirmary	34,480.44	
Hospital and Free Dispensary	14,184.16	
Farm Products, Livestock, etc.	106,201.82	
Rents of Campus Houses	9,608.69	
Lyceum	39,703.70	
Trolley System	10,278.73	
Stock Testing Fees, Farm Extension, etc.	12,356.09	
Sundry Items	30,762.89	
		257,576.52
Trust Fund Receipts	27,058.16	
		27,058.16
		$3,058,438.46

CLASSIFICATION OF EXPENDITURES FOR THE FISCAL YEAR 1917-1918

Schools, Colleges, etc.	Expenses		Capital Outlay	Totals
	Salaries & Wages	Supplies		
Administration	$70,295.06	$13,635.25	$2,068.97	$85,999.28
General University..	69,893.56	155,586.20	21,109.85	246,589.61
Science, Literature, and the Arts.....	317,193.81	27,089.32	9,979.41	354,262.54
College of Engineering	97,225.91	17,801.65	6,683.41	121,710.97
Department of Agriculture	396,534.91	174,962.82	34,734.95	606,232.68
Medical School	172,925.04	107,256.59	12,252.98	292,434.61
School of Chemistry	41,190.63	16,288.35	3,096.12	60,575.10
School of Mines.....	45,107.47	15,865.09	8,277.93	69,250.49
College of Dentistry	72,945.71	31,717.61	8,108.59	112,771.91
Law School	35,944.98	1,893.92	3,645.96	41,484.86
College of Pharmacy	18,134.98	6,172.89	265.82	24,573.69
College of Education	43,452.88	4,932.39	1,254.03	49,839.30
University Extension	74,843.46	10,589.50	244.55	85,677.51
Graduate School....	6,594.69	4,950.83	483.69	12,029.21
Summer Session....	19,599.12	2,083.61	1.71	21,684.44
Physical Plant.....	113,847.20	78,804.64	88,975.74	281,627.58
Crookston	41,267.32	27,617.94	7,095.24	75,980.50
Morris	30,234.94	24,033.07	67,592.58	121,860.59
Grand Rapids.....	11,492.71	11,097.17	7,136.15	29,726.03
Duluth	7,592.90	4,942.25	1,084.17	13,619.32
Waseca	4,843.83	3,160.53	3,939.17	11,943.53
Zumbra Heights ...	5,703.90	1,241.87	339.70	7,285.47
Service Enterprises..	66,990.35	203,530.89	21,164.31	291,685.55
Total	$1,763,855.36	$945,254.38	$309,735.03	$3,018,844.77

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THOMAS SADLER ROBERTS, M.D., Professor of Ornithology and Associate Director of the Zoological Division of the Geological and Natural History Survey of Minnesota

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CARL OTTO ROSENDAHL, Ph.D., Professor of Botany

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EDWARD DANA DURAND, B.A., Ph.D., Professor of Economics, Director of the Bureau of Statistics, and Chairman of the Department of Economics

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WILLIAM HARVEY EMMONS, Ph.D., Professor of Geology and Mineralogy, Head of the Department of Geology and Mineralogy, and Director of the Minnesota Geological Survey

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ALFRED EDMUND KOENIG, M.A., Dr. Theol., Assistant Professor of German

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ALBERT BEEBE WHITE, Ph.D., Professor of History and Acting Chairman of the Department of History

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JOSEPH BROWN PIKE, M.A., Professor of Latin and Head of the Department of Latin

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JEREMIAH SIMEON YOUNG, Ph.D., Professor of Political Science and Chairman of the Department of Political Science

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GISLE BOTHNE, M.A., Professor of Scandinavian Languages and Literatures, and Head of the Department of Scandinavian

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ARTHUR JAMES TODD, B.L., Ph.D., Professor of Sociology and Director of the Training Course for Social and Civic Work

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ROSCOE WILFRED THATCHER, B.S., M.A., Dean of the Department of Agriculture and Director of the Agricultural Experiment Stations

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EDWARD MONROE FREEMAN, M.S., Ph.D., Professor of Plant Pathology and Botany, Acting Dean of the College of Agriculture, Forestry, and Home Economics, Chief of the Division of Botany and Plant Pathology, and Pathologist and Botanist, Agricultural Experiment Station

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ROSS AIKEN GORTNER, Ph.D., Professor of Agricultural Biochemistry, Chief of the Division of Agricultural Biochemistry, and Agricultural Biochemist, Agricultural Experiment Station

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COATES PRESTON BULL, B.S. in Agr., Professor of Agronomy and Associate Agronomist, Agricultural Experiment Station

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