

**THE PRESIDENT'S REPORT
FOR THE YEAR 1927-28**

CONTENTS

	Page
The president's report.....	5-177
Fiscal control of state educational institutions.....	5-16
State universities and public education.....	16-28
Improvement of college teaching.....	28-35
Significant achievements of the University during the year 1927-28	37-46
The University's external relations.....	47-53
Administrative actions of general interest.....	55-77
University life	79-89
Changes in the faculties.....	91-104
Gifts	105-16
Report of the registrar.....	117-52
Report of the comptroller.....	153-77
Reports of administrative officers.....	179-284
Honor point system	180
College of Science, Literature, and the Arts	181-83
College of Engineering and Architecture.....	184-87
School of Chemistry.....	188
Department of Agriculture	189-94
Law School	195-96
Medical School	197-204
School of Nursing	201
University Hospitals	202-4
University Health Service.....	205-6
College of Dentistry	207-8
School of Mines and Metallurgy.....	209-11
College of Pharmacy	212-14
College of Education	215-18
Graduate School	219-25
Mayo Foundation	222-25
School of Business Administration	226-27
Dean of women	228-31
Dean of student affairs	232-38
General Extension Division.....	239-43
Summer Session	244-45
Department of Physical Education and Athletics.....	246-49
Department of Physical Education for Women	250-51
Department of Military Science and Tactics	252
Geological Survey	253-54
Museum of Natural History	255-57
University Library	258-59
Interfraternity Council	260
Field Secretary and General Alumni Association.....	261-64
Bureau for Research in Government.....	265
Employment Bureau	266

CONTENTS

	Page
Minnesota Union	267-68
Institute of Child Welfare.....	269-73
Social Hygiene Bureau.....	274-75
Committee on Educational Research.....	276-81
University Press	282-83
Publications of the faculties.....	285-360
Index	361ff

THE PRESIDENT'S REPORT

*To the Honorable Board of Regents,
University of Minnesota:*

GENTLEMEN: I have the honor to submit to you my report of the University of Minnesota for the year 1927-28. This report contains the reports of the various deans and the other administrative officers of the institution. It contains an analysis of the important administrative matters which have received consideration during the year. In addition the report contains a discussion of the principles, now generally accepted, underlying the fiscal control of state educational institutions, a discussion of the relation of the state University to public education, and a discussion of the improvement of college teaching.

FISCAL CONTROL OF STATE EDUCATIONAL INSTITUTIONS

A study of the history of state universities shows that their founders attempted to keep the financial control of these institutions free from personal or partisan politics. It shows that the people who created them, placed around them numerous protecting safeguards and sought their removal as far as possible from all types of political interference. The founders believed that the encouragement and support of higher education was a public duty and in the interest of public welfare. It was realized that great freedom must be allowed the staff if learning is to prosper.

Recently, the conception of a university as a republic of scholars living in an atmosphere of freedom has been displaced by the conception of a university as an example of economy and efficiency—terms borrowed from the industrial world. The movement to economize in the spending of public money is widespread. It reaches from the chief executive of the nation to the lowest public officials of the municipality and the township. It has had a powerful sanction and has been a weapon of great influence in the hands of the aspiring politician.

Commission Control Nullifies Regents' Responsibility—

The movement to place the financial control of the state universities under a commissioner or a commission other than a board of regents is widespread and exists in states where the universities were created by legislative act as well as in states where they were created by the constitution. It makes no difference how the state universities were created. This type of control produces exactly the same results. The principle that those who control the finances also determine the policies of the institution whether it be educational or otherwise, has been universally accepted. Where these commissioners or commissions have been created, the board of regents has had taken from it much, if not all, of its power to administer the income of the university. It must be obvious that if in all questions of policy involving the use of funds, the regents must defer to a commission entirely outside of its organization then that commission becomes the ruling force within the institution.

The establishment of these commissions is based upon a very plausible argument. Attention is called to the large number of public officers and commissions within the state—all spending public money and in many instances with little or no check. Attention is called to the need of having some type of state budgetary system which will require all of these officers and commissions to lay their biennial requests before such a commission. This budgetary commission is clothed with authority to require the state officers and the various boards to supply it with all the information that it desires. The budgetary commission in turn prepares a state budget which it submits to the state legislature for its information. All of this, we believe, is fundamentally sound in principle. There should be a state budget. The needs of each institution, each unit and department of the state should be thought of in terms of the ability of the state to provide funds for the maintenance and development of all the units and departments of the state.

Commission Control May Be Contrary to State's Interests—

It must be remembered, however, in introducing a budgetary system that it may be uneconomic, inefficient, and positively disastrous to the best interests of the state. If the state budget is thought of in terms of the political welfare of some group, or

some party, then the interests of the state are defeated. How difficult it is to find a commission composed of men with statesmanlike minds and with constructive ideals, who think of all of the institutions of the state in terms of constructive policies! A commission that merely holds before the various officials and boards of the state "stop signs" with reference to the spending of public money, one that knows only the command "thou shalt not," one that thinks that the prevention of the spending of money is equivalent to real economy is a positive hindrance to the development of the state. It's an Irishism to say that no business can expand by curtailing or withdrawing its sources of support, and yet that is exactly the point of view of some of these commissions.

In some states the state university is expected to file its budget in itemized form with the budgetary commission which in turn files the part which it approves with the legislature in itemized form. When the appropriations are made, they are made item by item and there is no possibility of transferring any part of one item to another item should some emergency or some situation arise within the institution. This is one of the most deadly ways of preventing the spending of money within a university and it is at the same time the surest way of destroying the morale of the institution. Any plan which gives little or no freedom in the transfer of funds in the long run is wasteful and it denies the administration that independence necessary for competent operation.

Effective Appraisal of Teaching by Commission Impossible—

Any university that has its salaries fixed by legislative act is hopelessly hampered and crippled in its endeavor to become a first-rate institution. The relationship of results to the types of teachers employed and the quality of the teaching staff to salary, are too evident to be confused, denied, or obscured for a moment by even the most specious arguments, excuses, or evasions. Whenever any state university by legislative act has its financial control placed in the hands of a commission, it is in a fair way to be used for personal, political, or sectarian purposes. The disastrous consequences to the university so placed may be left to the imagination or illustrated from the history of such ex-

periments in many states. Certainly neither a commission nor a legislature would impute to themselves a greater knowledge of the value and teaching power of a university staff than the regents possess after a study of the recommendation of the president, the deans, and the heads of the departments. And yet, I regret to say, there are instances where such commissions have required the university authorities to list definite salaries for members of the staff for each year of the biennium, not recognizing that in a matter like university teaching where individual power, initiative, and growth are basic, where recruiting is constant, where early promise may not be fulfilled, or where stagnation may set in, or more happily, where unexpected talents and values may be revealed, such a fixing of salaries is deadening and disastrous. The fact that this is done with the approval of the budgetary commission makes the matter no more defensible as a way of spending the people's money or of conducting a greater university.

When the first breath of suspicion exists that the university shall not be free within the limits of its own funds, to control its own destiny, and on the basis of its own study to serve the people of the state, the difficulties in retaining and recruiting a strong faculty will be enormously increased. Calls elsewhere will be encouraged and accepted and prospective appointees will stay where they are rather than risk the uncertainty of such an institution.

Fixed Detailed Budget the Enemy of Economy—

A fixed inflexible budget is the worst enemy of economy. The number of students must govern the number of teachers, the equipment, the buildings. University administrators responsible for meeting the students' needs, confronted with the necessity of working on an inflexible budget, would be compelled to make their estimates to meet the maximum expected enrolment in each department and to recommend individual salaries to meet possible bids from competing institutions. A university managed in this way might be compared with an immobile police force compelled to maintain in each section enough men to meet any emergency that might arise. This would not be the limit of the waste for such a business arrangement would freeze funds necessary to enlist or retain men and women who show unexpected merit.

This latter result would really be more serious in the long run in its effect on instruction.

If a commission be granted power to fix salaries and to determine promotions in the interests of economy, it seems clear that the greatest economy would be to close the university and save not only its upkeep but also the wasted years of the students who might come to it.

The budgets of state universities, as far as I know, are all carefully prepared. Studies are made of all the factors which enter into the preparation of the budget such, for example, as the floor area of the buildings, equipments of the various departments, the ratio of the number of students per instructor, the teaching load, and the salaries which must be paid to the various ranks of the staff in light of competition which these institutions have with each other. These budgets are carefully scrutinized by the heads of the departments, the deans of the colleges, the president of the university, the finance committee of the board, and the board itself; they are prepared by experts on the spot, by persons who are thoroughly familiar with every detail of the universities, with their purposes and with the types of competition which they have to meet. They are exact statements of what is required to maintain these institutions on a reasonable basis of efficiency.

Commission's Motives Negative—

These budgets, after months of preparation, under the law in many of the states, must now be presented before the state budgetary commissions. Hearings are set; many of these hearings are brief, perfunctory, and sometimes very unsympathetic in character. The commissions arrive at arbitrary judgments, based upon little or no knowledge of the purposes, life, or work of the universities. The commissions, in some instances, frankly say that their chief purpose is to see how much they can cut the budgetary requests.

I know of no budgetary commission that ever has come forward with a constructive program; indeed, there is no reason why one should come forward with a constructive program; it has no basis for preparing such a program; its chief responsibility is that of preventing the spending of money and the one thing that it points to with pride is its record in this respect.

It has not been uncommon for these budgetary commissions when they submit their final statements to the legislature to insert comments concerning the reasonableness or the unreasonableness of this or that expenditure. Their statements have oftentimes been tantamount to criticisms of the educational policies of the boards of regents. It must be perfectly clear that this budgetary device places a powerful weapon in the hands of a group of state officers.

When control is lodged with an independent commission, a bureaucracy exists. The control of public boards, whose members are actuated by ideals of public service, by a bureaucratic commission, improves neither the boards nor the electors whom they are supposed to serve. In fact, it creates unwarranted suspicion in the minds of the electorate that the boards are dishonest and inefficient.

Bureaucracy Disturbs Balance of Power—

Furthermore, such control destroys the balance of power which our system of government is supposed to guarantee. Functions which have hitherto been ascribed to public boards are removed and are assigned to other boards which are the creatures of the executive head of the government. This grants him not only executive but legislative power and destroys the system of checks and balances which the founders of our government attempted to preserve for its administration.

Boards of regents in state universities have been granted a certain measure of judicial authority for the simple reason that no legislative body can hope to regulate them in all respects. These judicial functions are essential to the wise administration of these institutions. The removal of these functions by direct act or by indirect action as actually occurs in the case of budgetary control at once makes the regents impotent and colorless.

Results of President Brooks' Study—

President Brooks of the University of Missouri said recently in a paper which he read before the National Association of State Universities, in answer to the question, "To what extent are state universities now under public control?"

The answer is that they are entirely so controlled as to general policy, internal administration and financial expenditure. The major portion of funds comes from legislative appropriations. In the making of these ap-

propriations, the governor and the legislator are jointly responsible. It is necessary that they have full information as to the financial needs of the university. This involves satisfactory accounting systems, complete and detailed reports as to past expenditures, clear explanations of general policies and proposed expansions and an accurate budget covering future needs, in order that fair comparisons with other state institutions and departments may be made, and that appropriations may be intelligently adjusted, and kept within the total revenues of the state.

The people through their representatives in the legislature have and should retain the right to determine the total amounts they are willing to devote to the policies and purposes presented in the university budget. The governor by his veto can halt any undue expansion or prevent appropriations out of proportion to other needs or in excess of total state revenues. In theory the legislature may over-ride his veto. In practice, however, the university appropriations are seldom passed until the closing days of the session, with the result that the governor's decisions as to total amount are final.

After the appropriations are made, the board of regents who are public officials, determine all allotments and are responsible for and approve all expenditures, but these allotments and expenditures must be for the purposes specified in the appropriations. . . .

The university is required by law to keep full and accurate accounts of all its financial proceedings and these accounts must be kept on forms prescribed by the state authorities and are subject to frequent audit by experts, in order to determine their accuracy

The university is required by law to make full and complete reports to the governor or other state officials, in addition to those made to the legislature and to the state and national departments of education. In short, there is available at all times a complete and accurate record of the number and salary of its employees, the appropriations, and balances in each of its funds and the detailed expenditures from each.

In some instances it appears that after the budgetary officers of the state have exercised their authority in revising the estimates submitted by the board of regents, the university authorities are not permitted to explain to the legislature any matters pertaining to their requests. The legislature, of course, has power to arrange for hearings and often does, but it is regarded as bad form in some instances for the university authorities to do otherwise than to subscribe to the action of the state budgetary commission. This is an arbitrary suppression of information which everybody is entitled to and particularly the legislature, and has nothing to commend it.

The Movement's Most Unfortunate Feature—

The most unfortunate feature of this general movement is

the assumption on the part of budgetary and finance commissions that they have full control over all the moneys of the state universities including the appropriations after they have once been made. There can be no reasonable objection, on the part of any state educational institution, to the demand on the part of the legislature and the people of the state that budgets shall be made and that appropriations likewise shall be made in terms of the ability of the state to provide for them. But after these appropriations have once been made, to pass the control of the expenditure of the money over to a superboard means that the regents become powerless. It also means that the members of the board of regents will lessen their interests in university policies. It will become difficult, if not impossible, to induce men and women of first-rate qualifications to accept membership on boards of regents. It means that, in each state where this plan is tried, a body whose primary business is that of saving money, a body that has every other organization and institution within the state to consider, a body that can give only casual attention to the problems and interests of the university, a body that is forced by virtue of the circumstances to think, not in terms of constructive policies but in terms of economies to be effected, will become the dominating and controlling factor in the administration of the institution.

The only argument that has been advanced in favor of this has been that of saving money. While the authorities in control of the state universities should not be interested in spending money for its own sake, still it is true that the people of the states, in which these institutions are located, are not greatly impressed with unsupported assertions that too much money is being spent on them. And yet the people have tolerated and even given an indifferent consent or inaudible acquiescence to the establishment of these financial boards without understanding what they mean and without recognizing that when the privilege of controlling the money of the university passes to an outside board that the very life of the institution is being destroyed. It is wrong to assume that a state finance commission can know more about a university or be more interested in it than the board of regents with its years of experience and close contact with the institution. It is also wrong to assume that the psychological attitude of a financial board would be favorable to the constructive develop-

ment of educational institutions or especially sympathetic to the services which such institutions render to the state.

Injection of Political Complications—

Whenever the determination of the classes, grades, and titles of the employees, the right to fix salaries, and to determine other expenditures, falls into the hands of a political board, these very things will be used sooner or later for political preferment and for political advantage.

In each of a number of states, without constitutional protection, as in Minnesota, to which this movement has spread, the state finance commission has assumed control over all the money which the university expends, no matter from what source it is derived, whether the Federal Government, the state, fees from the students, income from trust funds, gifts, or from the operation of its service enterprises. One cannot believe that any such purpose or intent was in the minds of those who were responsible for the enactment of these laws.

The opinion of some of the commissions also seems to be that whenever gifts are accepted or fees increased they should be regarded in each instance as an offset against state appropriations. Apparently it is not clearly understood that gifts are accepted and fees increased to supplement the state's appropriations and to enable the university to do things that it should do and cannot do within the limits of the state's appropriations.

Minnesota's Recent Experience—

The University of Minnesota is one of the institutions that has been affected recently by legislation of this character. The legislature created a state commission of administration and finance and placed all the finances of the University of Minnesota under the control of this commission. The regents of the University entered into a friendly suit with the state commission to determine their constitutional functions. The decision of the lower court declared:

1. That "The board of regents of the University of Minnesota is a public corporation, the highest form of juristic person known to the law, a constitutional body of independent authority, which, within the scope of its functions, is co-ordinate with and equal to that of the legislature."

2. That "Chap. 426, Laws 1925, does not mention the university, in no way affects it and does not confer in any way whatever any authority to the commission of administration and finance, itself merely a creation of the legislature, to exercise any control whatever over the university or the

board of regents, a creation of the people through the constitution. The board is not an official, department, or agency of the state government."

The decision of the judge was especially sweeping and will repay careful study. Among other things he said :

If the commission prevails, ultimate control of the university will be had by a commission of salaried officers appointed by the governor for their fitness for other duties than advancing the cause of education; not "by a board with special knowledge of the needs of an educational institution," but by a commission with many interests to look after and with a necessarily limited knowledge of the needs of an educational institution; not by a board with no conflicting duties, but by a commission with state-wide duties; not by a board with continuity of office, but by a commission likely to change whenever a new governor is elected; not by a board that will have continuity of policy, but by a commission whose policies will change as the governor changes; not by a board which will formulate policies in the sole interests of the educational institution, but by a commission which will formulate policies with a view to many diverse interests; not by a board that will be free from political influences, but by a commission whose outlook is necessarily political; not by a board in whom private individuals will have such confidence that they will make gifts to the institution, but by a commission which will be recognized as necessarily participants in politics.

This decision of the lower court was upheld on all points by the supreme court of the state.

Decisions in Michigan—

Minnesota found much support for her position in the court decisions of Michigan. It may be worth mentioning that the Constitution of the State of Minnesota is modelled after that of the state of Michigan and the constitutional provisions establishing the University of Minnesota are almost identical with the constitutional provisions establishing the University of Michigan. The University of Michigan was founded in 1826 and was controlled by the legislature until 1850, as are the state universities in many of the states to this day. But the baneful effect of that control is clearly reflected in the report of a select committee of the legislature appointed in 1840 to inquire into the condition of the university. One of the great questions debated in the Michigan constitutional convention in 1850 was that of putting the University of Michigan into the constitution so as to remove it from political control. The constitution provides :

SEC. 7. "The regents of the university and their successors in office shall continue to constitute the body corporate known by the name and title of "The Regents of the University of Michigan,""

"Sec. 8. * * * The board of regents shall have the general supervision of the university and direction and control of the expenditures from the university interest fund." (The 1908 constitution wisely expanded this to "university funds.")

"Under the construction placed upon these sections of the constitution by the supreme court, Michigan secured the advantages of a separate agency with complete control over the university, resulting in a board composed of members especially selected for their fitness for the office; a board with special knowledge of the needs of an educational institution; a board with no conflicting duties; a board with a considerable degree of continuity of office; a board with continuity of policy, avoiding destructive changes and shifts in policy; a board which formulated policies in the sole interest of the educational institution; a board free from political influences; a board possessing the confidence of the public justifying gifts to the institution."

It was not until this legislation was enacted that the University of Michigan began to prosper.

Discussion with regard to the establishment of the University of Minnesota was rife in the territory in the fifties and until 1858 when the charter given to the University by territorial enactment was incorporated into the constitution. There is abundant evidence to show that the leaders of the state were cognizant of the experience of the University of Michigan and that they sought from the very outset to free the University of Minnesota from all types of political control. They placed in the constitution of the state a statement to the effect that "all of the rights, immunities, franchises and endowments heretofore granted or conferred are hereby perpetuated unto said university."

While Minnesota and Michigan, thanks to their constitutional provisions, may have the liberties which are essential to the maintenance of their welfare sustained by action of the courts, it nevertheless is a fact that state universities created by legislative act do not have corresponding protection. The rights which Michigan, Idaho, Oklahoma, Minnesota, and the other states have been struggling to maintain may not be sustained in those states where the state universities are the creatures of the legislature in case they appeal to the courts.

Spirit Which Makes a University Imperiled—

In a matter of this sort we are interested, to be sure, in the

welfare of our respective institutions. But after all there is something far more important than the question of whether or not the University of Michigan or the University of Minnesota shall continue to survive. The most important question is whether the spirit which makes a university, the thing that determines its actual life, shall continue to exist. Whenever any person or any group can use a state university for partisan, political, or sectarian purposes, then the one thing which is essential to the life of that university has been taken from it. It persists under a threat and lives in fear. Every attack, no matter how subtle it may be, on these citadels of freedom, is an attack upon the very foundations of our government.

All of the things university administrators are doing fade into insignificance in comparison with the importance of maintaining the integrity of the universities of America. That integrity cannot be maintained if higher education is fostered and encouraged on high levels in one part of the country and restricted and controlled and held in submission in another part of the country. No university can be a republic of schools when learning and research fall victims to prescription, to labor union salary scales, to time schedules and clock hours, to the purchase of equipment by bids long after the need for it has passed.

STATE UNIVERSITIES AND PUBLIC EDUCATION

Of late, a tide of criticism of the public schools in general and of state universities in particular has begun to flow. Today it is a report of one of the great corporations that arraigns the cost of the state universities in most vigorous language and declares that they have become the victims of mediocrity. Tomorrow it is a report from one of the great foundations declaring that the students should pay the cost of their instruction. The next day it is an address from one of the distinguished citizens of America in which the same declarations are made. Then follows another report, brilliantly written, comparing the best of European secondary schools with American secondary schools of lower grade, discrediting the work of the American schools. Then comes a report from the manufacturers' association calling for new limits

on child labor legislation and the extension of the privileges of work for children. Then follows a report of the United States Chamber of Commerce presenting figures showing that education is costing too much. One cannot view an array of samples of this nature without stopping to think. If these criticisms and others like them mean anything, they mean that we need to clarify and to redefine our philosophy of life and of education, for it is obvious, even to the casual observer or student, that a wide difference of opinion exists between the dominant philosophies with regard to education.

The state universities and the public schools from the beginning have been maintained to provide freedom of opportunity. One of their fundamental doctrines has been equal opportunity for all to reach their highest attainments. They have stood vigorously against class education. They have provided educational facilities for all alike, the rich and the poor, the boy and the girl, the Gentile and the Jew, the fundamentalist and the modernist, the conformist and the non-conformist, the religionist and the atheist. Free of denominational control, the state universities are nevertheless Christian in spirit, Christian in ideals, and Christian in fellowship. They are open alike to those of social station and to those without. Long ago they learned that genius and talent do not belong to any class based upon wealth or social position. The only differences they recognize are differences due to ability and to a desire to achieve. They recognize that not all can achieve alike or move forward at equal rates of speed. They know that some must fall by the way and that some attempt that which they are not qualified to pursue. But they are not willing to condemn those of less talent merely because they have less talent. They propose for them just what they propose for the more talented; that is that each shall be permitted to progress as rapidly as his abilities will permit to the approximate limits of his attainment. The student of few talents shall not be denied his opportunity while the student of many talents is given his.

People Will Not Support "Class" Institutions—

The state universities and the public schools have persistently maintained that they are training the common people for the common weal. They have believed in the unlimited potentialities of the individual. In maintaining this as an ideal they have merely

been expressing the spirit and philosophy of the free people who support them.

Let the state universities set themselves up as class institutions and the support which they have hitherto received will quickly vanish and other institutions to take their places will arise out of the soil which gave them birth.

All other criticisms notwithstanding, if the American people have any great passion, it is a passion for education. They may not all be imbued with a flair for learning, they may not all be endowed with a "divine afflatus" for truth, but of this one thing we may be certain, no matter how vigorous the criticism of college and university education may be, the people of this country, those who vote and pay the taxes and support its institutions, will not permit their children to be deprived of their inherent privilege to attend college. They will establish new ones if they have to, even though the taxes must be increased to support them.

It is claimed that the average ability of the student bodies in these days is lower than it was fifteen years ago. This may be true; but based upon a priori evidence, this claim is difficult to establish. The standards of admission to college and the standards of college work certainly are higher today than ever before in all of the history of American education. This is as true of the state universities as it is of the privately endowed universities. If one listens to much of the current criticism he despairs of the college student, but he takes heart when he observes on commencement day that thousands of those who were supposed to be mentally incompetent have completed to the satisfaction of the faculty all of the requirements for their degrees. And it should be remembered that those requirements for the most part are determined by those of alleged superior intelligence of a generation ago.

The Idealized Memory of Yesterday—

We hear much about mass education and the absence of the personal touch between university teacher and student. All of the teachers of a generation or so ago did not hold personal communion with their students either; a few of them did; most of them did not. A student then often got very little intelligent advice concerning himself; today he gets advice scientifically determined concerning his health, mental make-up, emotional maladjustments, and vocational potentialities.

We probably forget that there were not very many dynamic personalities on the teaching force in earlier days. There were a few, praise be, and most of us acknowledge their strength of character and personal influence. One of the educational myths is that all of the teachers were of this type. Far from it. We should remind ourselves that there are dynamic personalities who are forceful teachers on the teaching staff today and that twenty years hence, they, too, will be remembered with affection by their students.

Not all state university teachers are of the type which R. L. Duffus, a writer for the Sunday supplement, *New York Times*, January 8, describes, "For himself (that is, the teacher in the state university) he needs the arts of the orator quite as much as those of the scholar. He must be ready with stories, with amusing illustrations. He must possess the ability to dramatize his subject, so that the dozing student in the last row will every now and then wake up and grasp a fact or principle." Without claiming that teachers should be entertainers, perhaps a little of the power of lucid presentation may be good for a teacher wherever he is. Experience has clearly demonstrated that men who place themselves rather than the materials of their subjects in the forefront, are condemned by faculty and students alike.

The American Ideal—Education for All—

In moments of great exultation Americans in general are disposed to praise their schools and the profession of teaching. They view with pride the public schools and the state universities as the agencies of the greatest experiment democracy has ever undertaken. It is the experiment of providing or of attempting to provide, largely by taxation, for the education of the children of all men and of offering to them, as nearly free as possible, equal educational privileges from the kindergarten to the university. The burden which the present generation has to bear in maintaining this experiment is incomparably lighter than that which our sacrificial forefathers bore to establish this great system of popular education. Certainly it is true that the torch of American civilization has been passed from generation to generation, not by tradition, but through the processes of an expanding education. Shall some generation in the comparatively near future witness the dimming of that torch because it provides the

maximum opportunity for the children of the favored and denies the maximum opportunity for the children of the less favored?

Americans have long maintained that equality of opportunity is essential to the development, the safety, and the perpetuity of democratic institutions. And by equality of opportunity none but the most uninformed have ever thought that equality of ability was meant. Equality of opportunity has been relied on to produce a worthy democratic citizenship.

Education—a Justifiable Social Investment—

Education has been supported as a social investment. It has been assumed that society's contribution to the education of its children is returned manyfold in service, progress, and wealth. And the facts, I believe, fully justify that theory. One only needs to point to the states that have neglected education as contrasted with the states that provide generously for education, to find evidence in support of this assumption. If one will take the five states that have provided most liberally for education, and compare them with the five states that have provided most parsimoniously for education, he will find that the average earnings of the families in the former are almost twice those of the latter, that the amount per individual in the savings bank is nearly ten times greater per individual in the former than in the latter, that the number of books in the libraries and the number of magazines and newspapers subscribed to is vastly greater in the former, and that the living conditions by and large are much superior in the former.

One of the things we are sometimes prone to forget is that we pay for the things we do not have as truly as we pay for the things we do have, but we pay in a different kind of coin. One has only to sweep his eye over the world to find abundant support for this suggestion. The nations that have been unwilling to spend on education are the victims of ignorance, superstition, destitution, and of all wretchedness that comes in their train. America has achieved her station, not by a withholding but by a generous spending. And she has done it by refusing to close the gates of educational opportunity. Generous donors and generous states have kept them open. Shall she now turn her back on the past and, heedless of its lessons, initiate a new philosophy, one which provides the best of higher education for the priv-

ileged few who possess the money to pay for it? Or shall she continue to hold steadfastly to the theory that democracy in the final analysis is a process of continuous education and that this nation can keep her place at the forefront among the nations of the world by providing more, not less, generously for the education of all?

Need Is for More Education—Not Less—

If society is growing more complex, as most of us believe, its problems more numerous, more intricate and more difficult of solution, then more, not less, education will be required for their solution. How tenaciously did our forefathers hold to the doctrine that the progressive advancement of democratic institutions depended upon an educated citizenry! An able attorney said to me recently, "Mr. Coffman, civilization has been ruined by education. Do you suppose you can make people competent to vote on public questions by giving them an education?" My only answer was, "I know of no other way."

And if the education of a generation is to become increasingly more selective, as some advocate, so that only the gifted possess knowledge concerning the complex problems of modern life, if college education is to be only for the select, then it becomes alien to the spirit which gave birth to public education and to the state universities. If pursued to its logical conclusion, this doctrine means that free government, based upon universal citizenship, cannot endure. We are not ready to admit, without adequate trial, that the great American experiment has failed. We are not yet ready to create by deliberate act an uneducated and uninformed proletariat.

We know that there are many who maintain that too many are in school and that too many are being graduated from college. There does not appear to be any trustworthy information showing that the professions, in general, are overcrowded. And we do not seem to have too many persons with a knowledge of government and of the other institutions of men. Where trained intelligence exists there we seem to have the best citizenship. And is not citizenship a function which all classes of people are expected to exercise? Shall we deny those who are to traverse the humbler walks of life the outlook of the trained mind? If we attempt to do it we shall probably find ourselves reckoning without our

host, for as Lincoln said, "God must have loved the common people. He made so many of them," and they still rule in the land.

The Doctrine of an Aristocracy of Wealth—

The state universities and the public schools have had still another common interest, an interest to which reference has already been made but which is deserving of further consideration. This interest may be best described by reference to an address which I heard a gentleman deliver recently before a distinguished midwestern club. He said, "College education, and perhaps secondary education, to some degree at least, should be based upon wealth. Those who are able to pay for it should be privileged to get it; those who cannot pay for it, should be denied it." Here we have a doctrine, stripped of all veneer, that education in its upper reaches should minister only to an aristocracy of wealth.

It is a fact that there are almost no free universities any more in this country. The fees charged students by state universities have been increasing but they are not so large, nor have they increased so rapidly, as fees charged by private universities. If they must now be increased so that the students pay the full cost or approximately the tuition cost of higher education, then one of the original primary purposes of the state universities will have been defeated.

The gentleman to whom I referred a few moments ago, declared that all education is simply a matter of charity and that the costs of education should be compared with the money given to charity. Viewed in this way it is clear that education is absorbing an unreasonable proportion of the nation's wealth. He stated also that the disintegrating effects of such charitable giving become even more pronounced in the case of students in colleges and universities and especially if the students are being trained for the more lucrative professions. He demanded that this pauperization should cease because of its deleterious social consequences. It requires a type of reasoning which I am as yet unable to comprehend to understand how those who have themselves been the beneficiaries of this social charity and who because of it have achieved wealth and recognition in their communities, should now suddenly discover its harmful effects and seek to deny

the children of others and even their own sometimes, the advantages which they themselves enjoyed.

State University Should Keep Pace with Private Institutions—

Suppose it should happen that the great privately endowed universities should become even more select and that men of means and the great foundations should continue to endow them with increasing millions and the state universities at the same time were unable to make corresponding progress, then we should, indeed, have what some claim we have already, provincial education in the private institutions and a cheap variety of education for the less favored thousands in the state institutions. Far be it from me to look with envy upon large gifts to private universities. I am especially happy to see them prosper, but I hold at the same time that the state universities, if the common weal is to be served, should prosper in corresponding degree. Education should be looked upon as national, not as a local enterprise; as a common, not as a class undertaking.

The country as a whole will flourish best if there are many rather than a few centers where distinguished men of art, of literature, and of science are perpetuating their own kind.

The last proposition to which I wish to call attention is likewise one to which reference has already been made. Stated more directly, however, the state universities and the public schools are unwilling to accept the doctrine of a self-appointed aristocracy of brains as their sole or primary function. They fully understand that there is a somewhat popular impression that wherever "mass" education exists, a term which I deplore, for I believe there is no such thing as mass education, but wherever it is said to exist, it is believed, there is no training for leadership and yet training for leadership is, in the opinion of many, the only justification for higher institutions of learning. Leadership, it should be remembered, is a relative term. Probably no one is a leader in everything; he leads in some respects and follows in others. Intelligent followership may be quite as important in a democracy as intelligent leadership.

There are those who maintain that the efficiency and value of the higher institutions of learning are determined by the selective and eliminating processes; the fewer they admit and the more they eliminate the better they are. Some on the other hand

measure their progress by the number of students they attract. Neither of these measures is adequate and neither can be applied without reservation to state institutions. A state institution will eliminate those who cannot do its work, but it will not refuse to give the individual who can do its work a chance to spend more than four years in accomplishing a given task if there seems to be good reason for it. It is unwilling to accept slowness as a sure sign of incompetency.

A Training for Effective Living—

And admitting large numbers of students does not mean that the state universities are not training for leadership. If they are not already doing so, they should be offering every opportunity for the talented and the gifted and they should be encouraging them in every possible way. In discoursing upon this matter former Dean Eugene Davenport of the University of Illinois said a few years ago, "We hear too much about educating for leadership. What the world wants is not leaders of whom we have a surfeit, but rather information and trained habits of thinking that it may select its leaders wisely. This all means the closest possible working relations between the institutions and the citizenship of the state, between those who, feeling the pressure of unsolved problems, realize the need of better information for those whose business it is to supply the need. A university so guided will remain close to the people and close to its problems. A university that so functions will not come very far from fulfilling its highest usefulness."

Two documents dealing pointedly with this general problem have recently appeared. One of them is the January issue of Ginn and Company's leaflet on *What the Colleges Are Doing*, and the other is the annual report of President Butler of Columbia University. The Ginn leaflet is a series of extracts from articles or bulletins, which reveal a common theme; they favor rigid selection of students.

Among other things these authors have set up a new conception of social justice. They argue that fewer students should be admitted and more should be eliminated, because the mediocre students are trespassing upon the time and rights of a high-minded faculty who are giving generously, and with high altruistic motives, of their energy and ability for the advancement of society;

because the mediocre students are depriving the brilliant students of that opportunity which they covet of maximum achievement, and because the mediocre students are defrauding their parents, friends, and society in general out of the greater returns and rewards which would accrue if society invested only in the gifted.

Why Some Are Apprehensive—

The statement is made that "the stampede into college life today is in a great measure blind, ill-considered, and without high motive," that the college market is saturated with mediocrity, that the keynote of the college world is the tragedy of the unfit, that the colleges are engaged in a wildcat exploitation of youth, that education for democracy should cease, and that education for aristocracy should take its place.

One of the articles in particular seems to hold the colleges responsible for the ills and sins of society. "For not a third of all that graduate see in their own intellectual growth sufficient compensation for the labors of a college career. Most, on the contrary, feel that they have sacrificed time and energy, and for the loss thus sustained they mean to recover from society. Is the legal profession being prostituted by the practitioner who brings with him into practice the ethics of the bootlegger and the heart of the pawnbroker? Then the remedy is not in stricter requirements for admission to the bar. The evil originates at the threshold of the law schools or earlier, and there it is to be combated or abandoned."

I have long known that the schools of this country had their weaknesses but never before did I assume that they should be held primarily responsible for the sins of men. I knew that they had been forced to assume many burdens which did not belong to them but not until I read these articles did I understand that the colleges of this country because they had not been exclusive, are responsible for bootlegging lawyers and medical fishmongers. Were this true I should say that it were high time that Jehovah direct His destructive thunderbolts at these dens of iniquity.

Should We Provide Education Only for the Elect?—

The common theme running through the series of articles is education for the elect. To this doctrine we agree that those who cannot profit by college training should not be permitted to attempt it or to remain at college. Those who can profit by it but will

not, likewise should not be permitted to remain at college. Colleges should not be regarded as playhouses, eleemosynary institutions, or rest stations. At the same time there are those of us who remember with gratitude that talent and genius were not the sole requisite for admission to college in our day.

The authors of these articles say they are thinking in terms of social justice. I maintain that their doctrine is the doctrine of individualism concealed under the cloak of social justice. The conception of social justice advanced by these writers is new in the field of education. While it has been advanced here and there by writers, it never before could be dignified as a movement. The focus of our attention, educationally speaking, years ago was upon the individual; more recently it has been upon those things which minister to the common welfare. The scene in education has been shifting from man to his activities; from individualism to the common good; from personality to commonality; from what is best for the individual to what is best for the community. And the common good has not been conceived as depending upon the training of the gifted alone, but upon the training of all who are competent to profit by training.

In his annual report, President Butler distinguishes between universities that reside in the sphere of liberty and universities that reside in the sphere of government. He defines the institutions of liberty as those supported by benefactions while the institutions of government are those supported by taxes. "Free men," he says, "have themselves erected government and have given to it for domain and occupation a very small part of all that constitutes their activity, physical, intellectual, social, moral, economic, reserving the vast and unlimited remainder for themselves as the sphere of liberty." And again he says, "The vast advantage which a university erected in the sphere of liberty has over a university erected in the sphere of government is in its freedom from bureaucratic control, from partisan political pressure and from those urgings which are the unhappy result of compromise between clashing convictions and conflicting public policies. A university in the sphere of liberty is master of its own destiny and is responsible only to its own ideals and to that larger public which has brought into existence both the sphere of liberty and that of government."

The Nebulous "Sphere of Liberty"—

The obvious inference from this is that state universities are greatly limited as to domain and occupation, that is as to the scope of their usefulness, while the endowed universities are practically unlimited as to the scope of their usefulness. If it be true that the social justifications lying back of these two types of universities possess these sanctions, then it is clear that these two types of universities do not operate and are not expected to operate in the same field. Furthermore, it is clear that we are dealing with differences in kind as well as with differences in degree when we think of the service these two types of universities render. It may be that society must rely even more heavily in the future than in the past for its leadership upon the dwellers in the sphere of liberty, while institutions which it itself provides shall be for the training of citizens for the more modest and humbler walks of life. I suspect that if public universities can continue to develop citizens and, if I may dare to say it, "true leaders," as they have in the past and in increasing numbers, no imaginary line will ever be drawn between a school in the sphere of liberty and a school in the sphere of government.

A second inference to be drawn from Dr. Butler's statement is that endowed universities sustain no interference with their freedom while state universities do. There is abundant evidence, I believe, in support of the opinion that endowed universities, generally speaking, are influenced, controlled, and frequently governed quite as directly, oftentimes more obviously, by the donors of their funds than state universities are by the taxpaying public. The fundamental question of public concern is not that of control versus freedom, for all institutions are controlled. It is the question of whether the control always seeks to advance public interest.

Only One Class of True Universities—

This distinction of President Butler's raises again, and from a new quarter, the question of the purpose and place of the two types of higher education in a democracy. No matter from what source universities receive their support, they should, in my opinion, seek an atmosphere of freedom in which to do their work and they should view with disfavor any movement or attempt, whether it be directed at state or endowed institutions, to curtail their freedom. The subservience of one institution must eventu-

ally menace the life of the other. A state university must, if it is to be worthy of the name university, be as truly a republic of minds where truth is fearlessly sought and taught, as is an endowed university. We cannot have two classes of true universities in America, one serving in the empyrean field of liberty and the other with its hands and feet of clay serving in the field of government. Each must serve in both fields, if both liberty and government are eventually to survive.

And now in conclusion let me say that both the public schools and the state universities represent the struggles of a free people to establish a system of popular education. The relationship between popular education on the one hand and democratic society on the other, is one which the American people still feel with responding devotion. The freer the political institutions of men the more widely scattered are the schools for everybody; the more restricted the political institutions of men the less widely scattered are the schools for everybody. The chief means of control in a democracy is some form of popular education. It is no mere accident of time and place that Americans have fostered public education for all. None recognized the truth of this more than Thomas Jefferson who declared that a free government cannot endure without public education. He gave a mighty impetus to its cause. From then until now the public schools and the state universities have advanced, sometimes with uncertain and halting steps, but the movement in general has always been forward. Could our forefathers have looked into the future, they would have known that this great experiment in democracy was secure, for its foundations are rooted in the idealism of the people and in provisions which they consider wise for meeting the necessities of their social and political structure.

IMPROVEMENT OF COLLEGE TEACHING

The first and most important duty of any teacher, whether he be a teacher in the elementary school, the high school, the college, or the university, is the improvement of his teaching. At first thought it would seem that there could be no difference of opin-

ion with reference to this. The statement seems trite enough. It is a commonly accepted opinion, I presume, that teachers are more concerned with the improvement of their teaching than they are with anything else, and yet an examination of their prejudices, their interests, and their activities seems to discount this opinion somewhat.

One cannot sweep through the history of education without being impressed by the change of attitude that has come about among college teachers with reference to teaching. In earlier days college teachers were deeply concerned about what their students learned and about the methods which they employed in teaching them. It is true that the methods which they employed were not scientific in character; they were based upon observation, experience, and philosophical deductions. The attitude of the teacher towards teaching was one of sympathetic consideration for the student; he guided the student step by step through the various fields of instruction; he led him by easy stages from the simple beginnings to the more complex parts of the subjects he was studying. The contact between the teacher and the student was intended to be one of helpful assistance to the student. Students were thought of as individuals and not as statistical units in a normal curve of distribution. In other words, the emphasis in those days was placed upon teaching; not upon administration. The eyes of the teacher were turned in the direction of the student and he was constantly thinking of the changes which were occurring in the student's mind.

Growing Movement for Selection of Students—

Now we are thinking more of the selection of students; it was only yesterday, comparatively speaking, that college teachers went out into the highways and the byways with the most lurid sorts of advertisements to urge students to go to college and they were admitted even though they were young and had had only a limited amount of training. As the number increased, however, colleges began establishing and raising entrance requirements until today students entering college are older than ever before, and they have had more training than they ever had in all the history of civilization, and yet in the face of these two facts we find a widespread movement to exclude many of them from college on the ground that they are incompetent to do college work.

The students who come to college today represent a wide variety of types of mind; they are interested in all sorts of things; they desire training for many professions and occupations for which training was not provided two generations ago. That in itself may be one of the factors which accounts for the attitude of many of the college teachers towards students in general. With the widening of the scope of higher education so as to include these new types of mind and to provide training in many new fields, it is possible that there has not been a corresponding change in the types of college teachers. Formerly they were trained largely in the humanities; now they must be trained in all sorts of fields, scientific and semi-scientific in character, but usually with a fairly definite vocational or professional point of view in mind, and these newer subjects and fields may not be as stable as those of a generation ago.

Just how far the enthusiasms of these two groups, the humanitarians and the vocationalists, may have influenced college teachers in general to concern themselves with the selection of students at the beginning of their college careers is difficult to determine, but that it has been a factor in the retention of students within the separate professional college units can scarcely be denied, for the teachers in these various units have a keen professional interest in training only those who are likely to manifest some leadership in their professions. Two generations ago college teachers were not concerned with the question of leadership; it seldom or never arose in their discussions; they were thinking about the needs and the aptitudes and the capacities of the individual pupil and what they could do for him; they permitted leadership to take care of itself. Nor were they concerned in those days with the selection and elimination of students. Now we have faced about almost completely, and instead of thinking of the student's welfare primarily, the college teacher's mind as a general rule is directed more towards administrative matters.

Scientific Methods No Substitute for Human Touch—

Whenever a college places its emphasis to a very considerable extent upon rules, devices, standards, tests, and other forms of measurements in the choosing and retention of students, it is inevitable that the instructors will become less rather than more sympathetic with students. Whenever teaching is concerned pri-

marily with the salvaging of human ability, with its development in each instance to its utmost capacity, then teaching will be dignified and noble, and thought of in a professional way. While I believe in the application of scientific methods and scientific techniques to all questions and problems falling within the realm of higher education, still I am thoroughly convinced that baneful effects frequently follow virtuous actions even in the sphere of higher education. If it be true in the field of higher education that teachers boast about the number of students they have eliminated rather than about the number of students whose minds they have unlocked and whose energies they have directed into realms of still higher achievement, then education has fallen upon sad days.

Who ever heard of college teachers being required to grade their pupils according to a curve of distribution until within the last twenty years? I am convinced that the introduction of these curves of distribution did stimulate scholarship when they first came in. I am equally convinced that they have been retained and adhered to in such rigid form in many institutions that they have wholly lost their effectiveness in this respect and it is still further my candid opinion they are sometimes administered in positively unjust and harmful ways. I have known of instances where members of the staff felt that they must distribute their students according to the normal curve of probability no matter how intellectually capable the students might be. If in any class of thirty there are fifteen especially gifted students who are deserving of the highest grade, it is obvious that great injustice is done if they do not receive that grade.

What May Result from Enthusiasm for Teaching—

The attitude of the average college teacher with reference to the improvement of college teaching is exhibited somewhat in his resentment to the supervision of his teaching. As a general rule, college teachers think they are well qualified to teach and they resent supervision in any form. To my mind a dean of instruction or supervisor of teaching would accomplish far more in the way of building that spirit within the institution which would be interested primarily in the welfare of the students than any other thing which we could possibly introduce. It would be very revealing, indeed, if we could have stenographic reports of

sample lessons taught by college teachers; it would be especially revealing if stenographic reports for the same subject-matter could be taken every two or three years. Let the teachers become interested in teaching and the vast majority of college problems so-called will quickly disappear. We have fallen into the habit of thinking and saying that our college students are incompetent; part of this criticism is obviously due to failure to improve our teaching, and part of it is obviously indulged in for the reason that it seems to be popular.

I recently had occasion to visit eight of the alumni groups of University of Minnesota along the west coast. As I went from place to place I gradually became conscious of the fact that the alumni, particularly the older ones, were asking the same questions and pretty much in the same order. The first question always related to some person who was on the staff when the student was in college. The second question concerned the college of which the questioner is a graduate. He wanted to know whether the college is progressive in its offerings. Does it keep its face to the future? Is it graduating men who can take their places in the world along with the best? The third question related to buildings and equipment. And the fourth question was an inquiry about how the university with ten thousand students could take care of the personal welfare of the student body. As a matter of fact, the older graduates had no definite notion of the dean of student affairs, the assistant dean in charge of freshmen, the dean of women, the social director, the Students' Health Service, the personnel department, the vocational adviser, and other agencies like the student work committees in the various colleges, and the placement bureau. I was impressed with the fact that the questions which these distant alumni asked related to faculty personalities, to curricular organization, to the nature of the equipment, and the welfare of the student body, and that they almost invariably asked the questions in that order. It was not until after these questions had been disposed of that any were asked with regard to the much discussed student activities.

Two Points of View—

Gradually the thought was borne in upon me that the older one is and the farther away he is from the scene of action, or both, the more disposed is he to place emphasis upon fundamental

things, upon things that are most essential in an educational program and which minister most directly to one's success later on. On the other hand, the younger one is and the nearer he is to a given scene of action, or both, the more disposed is he to be influenced by the temporary, the ephemeral, the dramatic episodes of life. I realize that those who have been out of an institution for some years and particularly those who are some distance away, while they cannot help in solving the local and immediate problems, can be of enormous assistance in keeping the institution thinking straight, about the things which are fundamental.

I found, furthermore, on this visit that there were certain teachers who were inquired about far more frequently than all the others combined; their names stood out in bold relief in the memory of the graduates of the University; they were persons who learned the names of their students, who spoke to them as they passed by, who stopped them from time to time as they passed the teacher's desk to make inquiries of them about this or that, who placed appropriate comments on their themes or examination papers, and who in other ways showed a keen interest in their personal welfare. They were persons, I found, who were far more interested in their students than they were in the rules for elimination or selection, or curves of distribution, or other administrative devices for the administration of the University. My observations confirmed the results which Dean Kelly secured for the Commonwealth Fund of New York City when he made his study some two or three years ago on liberal colleges.

Study of Techniques Must Be Supplemented—

The present generation of college teachers has grown up in an environment which emphasizes research rather than teaching as a basis of promotion. The public generally is less interested in teaching than it is in research. An appeal to a public audience for proper consideration of a teacher as an artist is regarded as a more or less sentimental appeal, while an appeal for support for the college teacher as a scientist meets with a far more hearty response. The world today is interested in concrete, objective products, things which it can use for the improvement of business, things which mean greater efficiency and greater dividends. It is not interested correspondingly in the more intangible outcomes and undefined ideals of college teaching.

If these assumptions be true, then what can be done to improve college teaching? One of the most important things, of course, is to induce as many college teachers as possible to think straight about teaching, to speak about it and to write about it as if they believe that it is a most important thing in the world. We do not have half enough of this kind of talk or articles of this character. I engaged the services of a young man to look through the magazine literature for the last five years to see just what has been said or written along this line, and we found that there is precious little. Practically all of the articles deal with one or the other of two things, either administrative matters or the improvement of some form of scientific technique. I am not asking that there be any less of this type of thing, I am merely suggesting that there be more of the other type.

Possible Benefits of Self-Study—

In addition to seeing that our own attitudes and points of view possess a wholesome regard for teaching, there is another thing which will do as much, or more than all others combined, to improve college teaching, and that is to induce the college teachers themselves to study college teaching. There are, of course, many hopeful signs that this is actually being done. The report of the National Committee on Mathematical Requirements, the report of the Committee on the Modern Language Study, the report of the Committee on the Classical Investigations, the report of the Committee on Engineering Education—these and other studies of like character are hopeful, but they need to be pushed one step farther. Some of those who have been making these studies in higher education should in every instance see that the studies are carried one step farther. They should find out what difference these studies make in the teaching attitudes of the instructional staff and in the achievement of the pupils. If there is no difference made in these respects, all the vast sums which have been contributed to reports of this character are practically wasted.

How necessary it is that we should keep in mind at all times, everywhere, upon every occasion, that the fundamental purpose of an undergraduate institution is teaching, that all other agencies and devices of every nature and description exist purely for the purpose of making the teaching as efficient as possible. Schools are organized that there may be teaching. Whatever government

there may be exists in order that the organization may be made as effective as possible, so that the teaching may be on the highest conceivable level.

The question of improving college teaching is a question of attitude just now rather than of method. Methods of attack exist and many of them are well known. Let the primary objective of college teachers be not primarily the training of gifted people or the elimination of students or the selection of students or rigid adherence to some curve of distribution, but the modification and improvement of their own teaching practices in order to achieve better things among the students—then we shall have better college teaching.

**SIGNIFICANT ACHIEVEMENTS OF
THE UNIVERSITY DURING THE YEAR 1927-28**

SIGNIFICANT ACHIEVEMENTS OF THE UNIVERSITY DURING THE YEAR 1927-28

OUTSTANDING FEATURES OF ADMINISTRATIVE REPORTS

The registrar reports a net total registration of 25,895 students.

Residents of Minnesota constitute 87.9 per cent of the entire student body.

The number of students entering the University with advanced standing continues to increase.

The College of Science, Literature, and the Arts reports noteworthy progress in dealing with students on the basis of individual aptitudes and needs.

The College of Engineering and Architecture offers, for the first time, courses in landscape architecture and in aeronautical engineering.

The Forestry and Home Economics divisions of the College of Agriculture, Forestry, and Home Economics report the largest registrations since the organization of these divisions.

The Agricultural Extension Division keeps 144 employees busy and spends \$476,736, of which \$164,679 is contributed by the Federal Government.

The Agricultural Experiment Station publishes 16 bulletins, 3 annual reports, and 83 articles for scientific journals.

The Law School recommends increasing the number of years of collegiate preparation for a law degree.

The Medical School reports improvement in the relationships existing between the organized medical profession and the University.

The College of Dentistry reports more mature, better prepared students coming to the college as the result of requiring for admission two full years of pre-dental college work.

The School of Mines and Metallurgy points out that 47 per cent of School of Mines and Metallurgy students, withdrawing during the year, did so for financial reasons, and urges more provision for financial assistance of deserving students.

The College of Pharmacy records the granting of a special certificate of merit by the American Medical Association, "for the best exhibit in the educational classification at the Minneapolis sessions, 1928."

The College of Education reports specialized curricula with the comment, "It thus appears that the old type of curriculum featuring education in general has, in substance, disappeared from the offerings of the College of Education."

The Graduate School gave instruction to 2,066 students. Approximately one third of these students held minor university staff appointments. Sixty-eight university departments have drawn graduate students to major in their subjects. Sixty-one Mayo Foundation fellowships were sought by 1,314 individuals.

The School of Business Administration established a "core group" of courses required of all students, to prevent students from becoming too highly specialized in their undergraduate programs.

The General Extension Division reports progress in adult education with 6,125 students in extension classes, 3,304 in correspondence courses, and 322 purely educational radio lectures.

The dean of student affairs' compilation shows the following scholastic averages, with 1.00 representing a "C" average:

General average of all students.....	1.190
Average of members of academic fraternities	1.051
Average of members of academic sororities.....	1.311
Average of professional fraternities	1.287
Average of professional sororities	1.609

The director of the Department of Physical Education and Athletics reports 1,449 men taking part in the Minnesota intercollegiate athletics, and 9,148 men engaged in organized intramural league and tournament competition.

The organized recreation program of the young women of the University now includes: golf, horseshoe pitching, bowling, basketball, swimming, baseball, tennis, track, and horseback riding.

Minnesota leads all of the country's universities in the number of men enrolling for voluntary advanced work in the Department of Military Science.

As a further step toward avoiding unnecessary duplication in research fields, the university librarian reports an agreement with the University of Michigan under the terms of which the Michigan library will emphasize, as much as possible, the purchase of French books and pamphlets, while Minnesota will attempt, as far as funds permit, to purchase books and pamphlets relating to the Scandinavian countries and the Baltic regions.

The University Health Service reports work by full time and part time physicians equaling the full time service of approximately twelve physicians whose chief activities are preventive and educational in character.

The alumni secretary urges provision for more trips about the state by university musical and dramatic organizations.

The Committee for Educational Research reports better work done by students in large classes than by students in small classes, continues experiments to develop better methods of college teaching, and, in the quest of a way to reduce freshman mortality, conducts a session for self-appraisal.

Undergraduate interest in efforts to achieve balanced growth is reflected:

In a new level of excellence attained in student dramatic performances

In a capacity student attendance reported by the University Concert Course

In the demand from those who heard the University Singers for more appearances of that group

In "standing-room-only" when poets, novelists, and college presidents have spoken at convocations

In the character of creative effort and the number of participants in fine arts competitions

In the constant use of the Arthur Upson Room in the University Library.

DISTINCTIVE HONORS CONFERRED UPON MEMBERS OF THE STAFF

SCIENTIFIC AWARDS

College of Science, Literature, and the Arts—

Dwight E. Minnich was awarded the Guggenheim Fellowship for research and study abroad in the year 1928-29.

College of Engineering and Architecture—

Frederick M. Mann elected as fellow in the American Institute of Architects.

School of Chemistry—

L. H. Reyerson was awarded a Guggenheim Fellowship for research and study abroad in the year 1927-28.

M. C. Sneed was elected a fellow by the American Society for the Advancement of Science.

S. C. Lind was awarded the Nichols Medal by the New York Section of the American Chemical Society, in recognition of the most outstanding work in the field of chemistry this year. He was also appointed a member of the International Radium Standards Commission. He was elected a fellow by the American Physical Society.

College of Agriculture, Forestry, and Home Economics and the Department of Agriculture—

Elvin C. Stakman was awarded the Emil Christian Hansen prize and medal.

Frederick J. Alway was given the honorary degree of doctor of science in chemistry, at the 100th anniversary of the founding of Toronto University—the only one to receive this degree in chemistry.

Lucy Studley was awarded the Laura Spelman Rockefeller Fellowship of \$1,200 in the field of child development. She did not accept.

Julian G. Leach was awarded an International Education Board Fellowship for research and study abroad.

Rodney B. Harvey was awarded a Guggenheim Fellowship for research and study abroad, in the year 1927-28.

Herbert K. Hayes was elected a fellow by the American Society of Agronomy.

Royal N. Chapman was elected a fellow of the Entomological Society of America.

Medical School—

John C. McKinley was awarded a Guggenheim Fellowship for research and study abroad in the year 1928-29.

College of Dentistry—

William F. Lasby, Herman A. Maves, and Carl W. Waldron were awarded the distinction of F.A.C.D. (Fellowship of American College Dentists).

School of Business Administration—

Robert Weidenhammer was granted a research fellowship by the Social Science Research Council in the field of economics, on the subject, "National and International Cartels in American Industries."

HONORS IN LEARNED SOCIETIES

Administration—

William T. Middlebrook, comptroller, was elected president of the Association of University and College Business Officers for the year 1927-28.

College of Science, Literature, and the Arts—

J. William Buchta was elected national secretary of Sigma Xi for two years.

College of Engineering and Architecture—

Robert Childs Jones elected secretary-treasurer of the Association of Collegiate Schools of Architecture.

Robert T. Jones was re-elected national grand president of Scarab Fraternity (honorary architectural fraternity).

William T. Ryan was elected vice-president of the American Institute of Electrical Engineers.

Milo E. Todd was elected chairman of the Minnesota Section of the Institute of Electrical Engineers.

School of Chemistry—

M. C. Sneed was elected chairman of the Minnesota Section of the American Chemical Society.

R. E. Kirk was elected secretary of the Minnesota Section of the American Chemical Society.

S. C. Lind was elected president of the American Electrochemical Society.

College of Agriculture, Forestry, and Home Economics and the Department of Agriculture—

Wylle B. McNeal elected vice-president of the American Home Economics Association.

E. A. Stewart elected chairman of the rural electric section of the American Society of Agricultural Engineers.

H. B. White elected secretary of the North Central Section of the American Society of Agricultural Engineers.

William Boss elected president of the American Society of Agricultural Engineers and also to membership in the American Engineering Council.

Elvin C. Stakman was elected to the following societies: American Academy of Arts and Science, Cambridge, Mass., Kaiserliche Academie der Naturforscher zu Halle, Germany,

British Mycological Society, London, corresponding member, der Vereinigung für Angewandte Botanik of Germany, life honorary member of the Sidney University Agricultural Society of Australia.

W. G. Brierley elected president of the American Society of Horticultural Science.

Medical School—

Frederic W. Schlutz elected an honorary member of the Argentina National Academy of Medicine.

University Hospital—

Paul H. Fesler appointed chairman of the Teaching Hospital Section of the American Hospital Association.

College of Dentistry—

Charles E. Rudolph was elected trustee of the American Dental Association for this district.

College of Pharmacy—

Frederick J. Wulling was awarded honorary membership in the Chicago Veteran Druggists' Association; was elected, for the twentieth consecutive time, to the chairmanship of the Scientific and Practical Section of the Minnesota Pharmaceutical Association; was awarded honorary membership in the St. Paul Veteran Druggists' Association; and was awarded honorary membership in the Minneapolis Retail Druggists' Association.

Gustav Bachman was re-elected secretary of the Minnesota Pharmaceutical Association.

PUBLIC SERVICE

College of Science, Literature, and the Arts—

Gisle Bothne was invited by the Government of Norway to participate in the Henrik Ibsen Centennial at the University of Oslo, Norway.

Albert E. Jenks was appointed by the Minneapolis Institute of Arts to head the first archeological expedition ever sent out from the state of Minnesota, into the Mimbres Valley, New Mexico.

College of Engineering and Architecture—

Frederic M. Mann was reappointed a member of the Minneapolis City Planning Commission and a member of the Zoning Committee; also a member of the Committee on General Survey of Metropolitan and Regional Planning Association; a member of the Board of Trustees of the Minneapolis Institute of Arts; vice-president of the Architects' Small House Service Bureau of the United States; a member of the Committee on Historic Monuments and Natural Resources of the American Institute of Architects; a member of the Committee on City Planning of the American Institute of Architects.

Leon Arnal was appointed a member of the Minnesota Chapter, American Institute of Architects, Committee on Education.

Roy Childs Jones was elected first vice-president of the American Institute of Architects, Minnesota Chapter; chairman of the Committee on Awards for Buildings and Gateway Development of the American Institute of Architects, Minnesota Chapter; secretary of the Architects' Small House Service Bureau, Northwest Division.

Robert T. Jones was appointed a member of the Committee on Public Information and of the Committee on Materials and Methods of the American Institute of Architects, Minnesota Chapter; technical director of the Architects' Small House Service Bureau of the United States.

S. Chatwood Burton was invited to lecture and demonstrate derma surgery at the University of Syracuse and before national societies of morticians.

Rhodes Robertson was elected secretary-treasurer for the Minneapolis Committee of La Sauvegarde de l'Art Français.

Fred C. Lang was appointed chairman of Subcommittee on Non-Bituminous Testing Problems (of Committee on Materials) of American Association of State Highway Officials.

Alvin S. Cutler was appointed treasurer of the Minnesota Federation of Engineering Societies.

College of Agriculture, Forestry, and Home Economics and the Department of Agriculture—

Alice M. Child was elected chairman of the National Committee on Quality and Palatability of Meat.

Medical School—

Frederic W. Schlutz was appointed one of the three official delegates from the United States to the Pan-American Child Hygiene Congress at Havana, Cuba, representing the American Pediatric Society.

College of Education—

Leonard V. Koos was elected president of the Minnesota Education Association and was chosen to make a survey of secondary schools and junior colleges in California.

Social Hygiene Bureau—

Chloe Owings, director, honored as chevalier of the Legion of Honor of Paris in recognition of her work in connection with the children's courts in Paris.

UNIVERSITY OF MINNESOTA FACULTY RECOGNITION IN AMERICAN BIOGRAPHICAL HANDBOOKS

The following list shows the handbooks containing the names and biographies of members of the faculty and the number listed in each.

<i>Who's Who in America</i>	117
<i>American Men of Science</i>	190
<i>Who's Who in Medicine</i>	105
<i>Who's Who in Engineering</i>	47
<i>National Cyclopedia of American Biography</i>	7
<i>Who's Who in Jurisprudence</i>	6
<i>Who's Who in Journalism</i>	2

THE UNIVERSITY'S EXTERNAL RELATIONS

THE UNIVERSITY'S EXTERNAL RELATIONS

RELATION OF THE UNIVERSITY TO THE STATE COMMISSION OF ADMINISTRATION AND FINANCE

During the last two or three years it became more and more obvious that there must be a clear definition of the powers of the Board of Regents and the State Commission of Administration and Finance. The State Commission of Administration and Finance claimed control over all of the funds of the University. It was clearly recognized that this control of funds involved the control of educational policies of the institution. In order that the powers of the two boards relative to the University might be clearly defined, a case was agreed upon and suit was brought. This case, in so far as the Board of Regents is concerned, is set forth in the following resolutions:

Whereas the Board of Regents of the University of Minnesota on June 18, 1926 approved a plan, and on July 19, 1927 appropriated a sum of money from the funds under its control, for the purpose of insuring the lives of the members of the staff of the University, and the Comptroller of the University, by authority of the Board of Regents, contracted with Charles H. Preston and Company to further the services of consultants to assist in preparing the contract for said insurance and agreed to pay therefor the sum of fifty dollars, and such service having been rendered and sum due, the Comptroller presented on August 5, 1927 proper abstract, invoice and voucher, to the State Auditor covering the same and requested the State Auditor to draw his warrant on the Treasurer of the State, who has custody of the moneys subject to the control of the Board of Regents for payment of the same. And

Whereas the State Commission of Administration and Finance claiming authority by law to disallow the expenditure of money by the Board of Regents for the insurance of the staff of the University, has refused to approve the appropriation of the Board of Regents for such insurance, and refuses to permit any money to be expended by the Board of Regents for such insurance, and the State Auditor refused and still refuses to issue his warrant for payment for the services rendered by Charles H. Preston and Company without the approval of said Commission. And

Whereas the Board of Regents of the University and the Commission of Administration and Finance desire to have their respective powers in the premises determined by the Courts,

Now, therefore, be it resolved by the Board of Regents of the University of Minnesota that the executive officers of the Board are hereby authorized and instructed to bring suit on behalf of the Board to establish in court the rights and powers of the Board, to employ counsel to aid in

the prosecution of the suit, and to do all other acts necessary to secure a determination of the rights, powers, and immunities vested in said Board by the Constitution and the laws of the state.

This case was brought to the District Court under Judge Hanft who handed down a decision on February 7, 1928, supporting the University's contention that it is a constitutional institution and that the Board of Regents is the sole power in control of its funds and policies. This case was appealed by the State Commission of Administration and Finance to the Supreme Court of the state which handed down a decision on July 27, 1928, confirming the decision of the lower court.

GENERAL EDUCATION BOARD GIFT

It will be recalled that the General Education Board of New York City made a proposal in 1924 to give the University \$1,250,000, provided the University matched this two dollars for one. This gift was made with the understanding that it would enable the University to complete its hospitals and medical laboratories, and to purchase land adjacent to the University for the removal of the Minneapolis General Hospital thereon. Attention has been called to this proposal in the last three annual reports. The Board of Public Welfare of the City of Minneapolis, after prolonged consideration of the matter, came to the conclusion that it was not practicable to carry out the original plan. Consequently, both the Board of Public Welfare and the regents of the University voted to discontinue all negotiations with reference to it. This means that the University of Minnesota, if it expects to avail itself of any gift which the General Education Board may make, must approach that board with an entirely new proposition.

MEMBERSHIP IN EDUCATIONAL ASSOCIATIONS

During the year the University accepted membership in the following educational associations:

The Educational Buyers' Association, the National Associations of Deans of Women, the Association of Governing Boards of State Universities and Allied Institutions, the New York State Fruit Testing Co-operative Association, the Association of Schools of Professional Social Work, the American Association of Schools.

and Departments of Journalism, and the University Library in the Norsk Slektshistorisk Forening.

STATE MEDICAL ASSOCIATION'S RELATIONS COMMITTEE

At the annual meeting of the State Medical Association a Committee of University Relations was appointed. This committee consists of: Dr. H. M. Johnson, Dr. W. F. Braasch, Dr. H. M. Workman, Dr. C. C. Kennedy, and Dr. C. B. Wright. It was believed that the appointment of this committee and its contacts with the staff and work of the Medical School would be especially helpful not to the State Medical Association alone but to the state Medical School and the other administrative officers of the University. Consequently, the Board of Regents directed the president to express to the State Medical Association its appreciation of this expression of interest and good will in the University and to assure the State Medical Association of the desire on the part of the University to co-operate with the association to the utmost in building and maintaining a medical school of the highest class at the University of Minnesota.

MEETINGS OF LEARNED SOCIETIES AT THE UNIVERSITY OF MINNESOTA

The number of organizations that each year conduct national or regional meetings on the campus is an evidence of the standing of the University of Minnesota.

During the past year a number of these meetings have been held at Minnesota. Among these have been such national gatherings as the Fifteenth Annual Conference of the American Alumni Council, the annual convention of the Association of Collegiate Business Officers, the convention of the American Society of Agricultural Engineers, and the Mid-West regional meeting of the American Chemical Society. A symposium of papers and demonstrations dealing with the subject of welding was conducted by the Department of Medical Engineering. The Minnesota Tax Conference met on the campus as guests of the League of Minnesota Municipalities.

Other gatherings were those of the Minnesota State Music Teachers' Association, the Association of Deans of Arts Colleges,

and the First Institute on Higher Education, which was conducted in July, 1927.

The annual meeting and contest of the Northern Oratorical League was held at Minnesota.

During the meetings of the American Medical Association in June, the medical faculty figured prominently in the proceedings of the convention. The faculty also was active in the sessions of the American Dental Association, the American Hospital Association, and the National Education Association. All of these annual meetings of national societies were held this year in Minneapolis.

Schoolmen's Week brought about a large gathering of persons directly interested in education.

MUSEUM OF PIONEER CULTURES

A group of representative Scandinavian citizens revived during the year, the project for the erection on the campus of the University of Minnesota of a museum of pioneer cultures. The University has placed at the disposal of these citizens its facilities for studying museum methods and the details of museum construction. It is the expectation that this movement will take shape in its first stages as an effort to provide a museum to preserve for posterity the significant features of the pioneer cultures which have fused to create the present life of the state of Minnesota. The financing of this laudable project as it is contemplated, would not involve the University in the construction or the support of the museum.

TEACHING OF HOME ECONOMICS IN THE SCHOOL OF AGRICULTURE AT GRAND RAPIDS

The School of Agriculture at Grand Rapids was opened to boys in the fall of 1926. The total enrolment for the first year, 1926-27, was sixteen. The superintendent of the school, Mr. Otto I. Bergh, asked that provision be made for the teaching of home economics so that girls could be admitted to the school in the fall of 1927. His request was presented to the president of the University by the dean of the Department of Agriculture who expressed serious doubt as to whether it would be advisable to open the school to girls at the time mentioned. He pointed out

that there was but one dormitory in which to house students; that there were high schools well equipped for teaching home economics in the region from which the School of Agriculture draws students, and that parents would likely prefer to have their daughters get their home economics training in the institutions nearest home:

The president appointed a special committee to investigate and report relative to the advisability of admitting girls to the school. This committee provided for a farm canvass in the region from which the school would most likely draw students.

The report of the committee was discussed with the Board of Regents by the president and the dean of the Department of Agriculture and it was decided that the school would not be opened to girls in the fall of 1927.

**ADMINISTRATIVE ACTIONS OF GENERAL
INTEREST**

ADMINISTRATIVE ACTIONS OF GENERAL INTEREST FURTHER PROGRESS TOWARD FOUR-QUARTER OPERATION

Following the report of the Administrative Committee of the Senate, on this subject, steps were taken during the year to facilitate the further development of the four-quarter operation of the University by reclassifying all faculty "A" appointees except those whose duties are primarily administrative, by simplifying budget procedure, and by providing a means for earning leaves of absence with full pay.

On recommendation of the president of the University and the Administrative Committee of the University Senate, the Board of Regents took action upon three separate but intimately related subjects. These are:

First, providing for a procedure by which a school or department of instruction might go upon a basis of a four-quarter year, thus incorporating the summer quarter budget into the budget of the regular year.

Second, providing for changing certain Class A members of the instructional staff to Class B.

Third, providing for leaves of absence on full pay during the regular year if elected in lieu of the reduced pay for the summer session.

The official actions with respect to these three matters are given below. There are also given brief statements setting forth the situations calling for these actions and explanatory statements in defense of them. There is also given at the close of this section, the plan proposed by the comptroller for recording in the annual budget the essential facts with reference to the terms upon which each member of the instructional staff is employed for the year.

CONDITIONS PROMPTING THE CHANGES

The University, in common with other colleges and universities in this country, has until the last decade or two been administered on the basis of nine months to the year. Salaries of the staff, while announced as annual salaries, were earned by nine months of service. The three summer months served as a time when faculty members did much reading, research work, travel,

and other recreation. High standards of scholarship and vigorous health were maintained, presumably, by these means.

During recent decades, particularly the last one, the Summer Session has grown rapidly. At present there are enrolled during the first term almost half as many students as are enrolled during the regular year. The second term is growing steadily and now enrolls approximately two thousand students. It has been the practice up to date to pay for summer session service to members of the staff who are employed through the regular nine months of the year three-fourths as much per month as they receive per month during the regular year. This has served to supplement the annual salary of members of the staff. In some departments of the University the demand for instruction in the summer is as great and in others even greater than it is in the regular year. In these departments there is a growing tendency for members of the faculty to offer instruction all four quarters of the year, receiving for the summer quarter the reduced rate of pay.

This situation calls for consideration of the following questions:

1. Shall the annual salary of members of the staff be such as to provide suitably for them without supplementing it with summer session salary?
2. Will the tendency to supplement the regular salary with extra pay for summer session work tend to hold regular annual salaries on a lower basis than they would be otherwise and thus do injustice to the teachers in those departments where summer session work is not available?
3. Is the standing in scholarship of members of the faculty likely to suffer with the growth of summer session teaching?
4. Will the summer session teaching tend to limit the interest and output of members of the faculty in research in their respective fields?

The actions recorded below are an attempt on the part of the University to safeguard both the faculty and the institution in respect to these questions.

One other problem has arisen in the University because of the regular year being divided into quarters. Where students used to register for the same amount of work under the same instructors to be carried throughout the year, the load of instruction was essentially the same throughout the entire academic year.

With students now registering for courses which in the main extend through only one quarter, it is possible for a wide variation to exist in the amount of teaching a department may do from one quarter to another. Some departments have been found to have less than half as many student credit hours of instruction in one quarter of the year as in another quarter of the year. These variations are due to program arrangements over which the department concerned frequently has relatively little control. In order that this uneven loading of departments may be minimized, advantage may well be taken of the four-quarter plan to employ certain members of the staff to teach in the summer and during the two most crowded quarters of the year, on the basis of the regular annual salary. Thus, vacation will be taken by such a member of the staff not during the summer, but during the quarter of the year when the teaching load is lightest.

The following actions are intended to offer a partial solution for that situation:

ACTION I. INCORPORATING THE SUMMER SESSION BUDGET WITH THE
REGULAR ANNUAL BUDGET

Any college, school, or department of instruction may apply to the President of the University for permission to organize on the four-quarter basis when the following condition has been met:

The application implying approval of the following plan, shall be by vote of a majority of the faculty members of the unit concerned, and with the approval of the Dean.

The adoption of the four-quarter plan involves the following:

1. The budget for the regular year shall incorporate the work of all four quarters beginning the summer quarter following the approval of the budget.
2. Toward this budget there shall be contributed from summer session funds an amount to be determined by the instruction load carried in previous summer sessions, and by the plans for the subsequent summer. This amount shall be determined by the President on recommendation of the Director of the summer session.
3. The four-quarter organization does not affect officers who are employed on the "A" basis.
4. Members of the teaching staff may be engaged on the regular year basis to teach any three of the four quarters during any fiscal year. *Those who are members of the staff at the time the four-quarter organization is adopted, will not be required to teach during the summer session unless they elect to do so.*

5. Those who teach more than three quarters in any fiscal year shall be paid for the extra teaching at the rate prevailing for the summer session.

6. While the period of service shall be determined by the academic calendar, the payments shall be made for each quarter as follows:

Summer Quarter.....	1st half--June 16 to July 31
	2nd half--Aug. 1 to Sept. 15
Fall Quarter.....	Sept. 16 to Dec. 15
Winter Quarter.....	Dec. 16 to March 15
Spring Quarter.....	March 16 to June 15

7. No members of the faculty, except those on the "A" basis, shall offer instruction in the University of Minnesota more than eleven quarters in any three consecutive fiscal years. In this calculation one summer session term shall be regarded as equivalent to one-half of a quarter.

ACTION II. CHANGING THE STATUS OF THE MEMBERS OF THE INSTRUCTIONAL STAFF FROM CLASS A TO CLASS B

1. That as soon as practicable the designation "Class A" be not employed and that "Class B" or "Class C" be substituted in the cases of the regular members of the instructional, research, and extension staffs of rank of instructor, assistant professor, associate professor, or professor, who are on an essentially full-time basis of employment in the University.

2. That "Class B" be redefined as follows: "The employment for any three academic quarters of the year, the quarters to be designated at the time of the adoption of the annual budget." *Members of the staff engaged before this new definition goes into effect shall not be required to teach other than the quarters of the year contemplated in their initial agreement with the University.*

3. That any person now on the "Class A" basis who is changed to the "Class B" basis shall receive on the new basis eight-ninths of the annual salary which he was to have received for the same year on the "Class A" basis. (This provision is contingent upon removing the maximum of \$600 now prevailing for six weeks in the summer session.)

4. That each person changed from the "Class A" basis to the "Class B" basis shall be assured employment at the "extra quarter" or "summer session" rate for additional time each fiscal year to such an extent as will make an annual salary at least equal to the annual salary which he was receiving at the time the change from the "Class A" basis was made. It is understood that individuals or their departments will assume responsibility under the

new régime as under the old for the duties which fall to their respective offices throughout the twelve months of the year.

5. That this change of basis of employment shall not in itself constitute a claim for additions to the annual allotments made to the departments in which the persons so changed are employed, except that increases in total allotments to given departments may be allowed if equivalent decreases are made in other departments and divisions within the same school or college.

In defense of the above action, the following may be offered:

(1) Employment on the twelve months basis, particularly in the Department of Agriculture, dates back to the time when colleges of agriculture, and especially experiment stations, were organized in intimate co-operation with the Federal Department of Agriculture, whose employees work on the twelve months basis. In the University of Minnesota the distinction between the conditions of employment in the Department of Agriculture and in the other schools of the University was not obvious nor embarrassing until in late years when there has been an increasing number of staff members who go from one campus to the other. The University of Minnesota has become in spirit a single institution, whereas it was formerly in spirit two institutions. This has increased the difficulty of having the "Class A" basis of employment operate largely on the agricultural campus, while the "Class B" basis of employment operates largely on the main campus.

(2) In early years members of the University Department of Agriculture were not required to be such highly trained specialists in the several scientific fields as they are now, and therefore they did not feel the need of opportunities for study and research for their own improvement as keenly as they do now. With the improving standard of scholarship among members of the staff in the Department of Agriculture, the same arguments which maintain on the main campus for free time to advance one's self professionally, hold on the agricultural campus.

(3) With the growth of the several divisions in the Department of Agriculture, co-operation among the members of the staff in any given division makes it possible to continue the program of teaching, research, and extension within that given department, even though certain members of the staff are absent for a given quarter. Therefore, continuous twelve months employment for

each member is not so necessary to carry on the activities of the department as it was when the departmental staffs were smaller.

(4) It seems impossible to devise a way in which the advantages of deferred vacations in lieu of extra pay for the summer session may accrue to members of the staff as long as they are employed on the "A" basis.

ACTION III. GIVING OPTION OF LEAVE OF ABSENCE ON FULL PAY IN LIEU OF REDUCED SUMMER SESSION SALARY

For full service during two terms of the summer session (approximately 6 weeks each) there will be allowed to full-time members of the instructional staff of rank of instructor or above if elected in lieu of salary:

Leave of absence with full pay for one quarter of the academic year.

Provided:

(a) The leave shall begin not later than five years after the close of the summer quarter during which the first service is rendered.

(b) The leave of absence and the time it shall be taken shall be on recommendation of the department with approval of the dean concerned, and in considering requests, care shall be exercised to see that the absence will not seriously impair the service of the department.

(c) The rules covering substitute instruction in cases of sabbatical leave shall govern so far as they are applicable.

(d) Leaves of absence may accumulate to the extent of three quarters, but not more.

(e) The leaves of absence are taken on the same terms relative to approval of plans for the leave and return to the University at its expiration, as the existing terms for sabbatical leave.

(f) In case the plans for leave of absence are abandoned by a faculty member, the relinquished salary for summer session shall be paid in full on request.

(g) Vacation leave and sabbatical leave may be combined under the following conditions:

1) Total leave at any time shall not exceed three quarters.

2) When the combination amounts to three quarters, sabbatical leave with full pay shall not exceed one quarter. In accepting this arrangement the member of the staff does so in lieu of any additional sabbatical leave which he may have accumulated.

THE NEW POLICIES EXPLAINED

(I) With the rapid growth of summer sessions throughout American universities, an increasing number of teachers are devoting a part of what was formerly their vacation period to the

work of teaching. For this teaching they receive pay beyond the amount ordinarily stated as their annual salaries. In some departments or schools, notably schools of education, the demand in the summer is greater than the demand in the regular year and therefore practically all members of the staff engage in summer session teaching. This tendency will eventually invalidate the claim that university teachers and investigators require considerable periods of freedom from their usual duties in order to keep themselves abreast of the developments in their own fields, and in order to afford opportunity to complete pieces of work which they do not find time throughout the regular year to finish.

(2) The inflexible arrangement at present prevailing, by which university faculty members are required to teach for nine months and then take their vacations during the summer, will very likely remain the most desirable arrangement for the majority of faculty members. However, it seems desirable to make provision whereby the departments desiring it may arrange for certain members of the staff to have their vacations at other times than during the summer months. Better opportunities for study and for many types of travel are afforded at other times than are afforded during the summer. A longer period than three months every few years may be much more useful than a period of three months every year. It seems well, therefore, to provide for such a flexible arrangement under which, by teaching in the summer session without pay, a leave of absence of corresponding length may be had with full pay during the regular year.

(3) Perhaps the most cogent reason of all is that the summer session finds it very difficult to secure the services of some of the best trained men and women of the faculty under the present arrangements. It is the best trained men and women who cherish most the opportunities for study and travel which their periods of freedom from regular university duties afford. On the other hand, the type of students who attend the summer session are such as to require and to appreciate most the services of the best trained men and women. A larger proportion of summer session students than students in the regular year are pursuing work in the graduate school. In many departments it is impossible to staff the summer session adequately with persons qualified to direct the work of these advanced students.

(4) This recommended change is a part of the general scheme of adjustments under which the University can more adequately serve its clientele for the four quarters of the year. These adjustments include a change from Class "A" status to Class "B" status of members of the staff, and the incorporation of the four-quarter plan under which each school and college will so adjust its work and its staff appointments as to serve most adequately the students enrolled for the four quarters of the year. As this group of adjustments proceeds, it will be necessary to make such safeguards against overloading teachers as to assure to those who desire to devote time consistently to advancing their scholarship an opportunity to do so without financial loss.

(5) The need for such leave of absence is especially urged just now when Class "A" members of the staff who have had a minimum opportunity for self-improvement are being placed on the "B" status.

(6) The details of the plan above recommended are designed to safeguard the University, as well as the members of the faculty. *The leave of absence shall be regarded as an opportunity to prepare for better work in the future rather than as a right earned by previous service.* It must be taken within reasonable length of time in order that a too radical difference in salary may not cause too great sacrifice to the University.

It is believed that the above three actions, taken together, will make possible a much greater flexibility in the assignment of instructors in the departments in the light of the varying loads from quarter to quarter. They will also make possible securing a stronger staff for the summer session, and will safeguard the faculty against having the regular academic year's salary jeopardized by the addition of summer session work at reduced pay. Finally, it is believed that with the flexibility provided for in these actions, members of the faculty will have better opportunity to safeguard their standards of scholarship, complete research work in which they are interested, and keep themselves fresh physically and mentally.

Following is given the plan for taking care of irregularities in the budget which occur because of the above actions. These will be followed in the preparation of the budget for 1928-29:

PLAN OF DESIGNATING IN THE BUDGET FOR 1928-29 THE TERMS OF EMPLOYMENT

If the total salary for the twelve months of 1928-29 or the term of employment of any "B" member of the staff shown in the budget is for other than Fall, Winter, and Spring Quarters of the regular academic year, or,

If the percentage of time varies for these three regular quarters,

Then the employment designation of such members of the staff should be indicated in the budget as "BC" meaning on a special academic basis, and the percentage of time and the salary of such members for each quarter of the year and for each term of the Summer Session should be shown directly under the name of the staff member. If the percentage of time is 100 or full time, it need not be shown.

These abbreviations may be used: "SS"—Summer Quarter; "SS1"—First Term of Summer Session or quarter; "SS2"—Second Term of Summer Session; "F"—Fall Quarter; "W"—Winter Quarter; "S"—Spring Quarter.

Examples are:		Support	Specials
		01	06
John Doe, Professor (SS \$1600, F \$1600, W \$1600)	BC \$4800	\$4800	....
Richard Roe, Associate Professor (SS1 \$400, F \$1066.66, W \$1066.67, S \$1066.67)	BC 3600	3600	....
Charles Moe, Assistant Professor (SS2 50% \$300, F 80% \$800, W \$1000, S 80% \$800)	BC 2900	....	2900
Edgar Poe, Instructor (Fund 01 SS2 \$300, Fund 06 F \$600, W \$600, S \$600)....	BC 2100	300	1800

PAYMENT TO WIDOWS

The Board of Regents, upon the recommendation of the Administrative Committee of the University Senate, on May 9, 1928, voted to approve the following plan of payment to widows of deceased members of the staff:

The Committee recommends that with the limitations noted below, the following plan be used for payments to widows following the death of members of the staff:

1. That half the regular rate of pay of the deceased member of the staff be granted to his widow for a period of six months.

2. That in recognition of length of service an additional half-month's pay shall be granted for each two-year period or fraction thereof, following the completion of four years of service up to a maximum of half pay for twelve months.

NOTE: In making the computations for the above, it is understood that one month at half pay shall be one twenty-fourth of the regular annual salary, excluding such extra compensation as comes from summer session, extension instruction, and the like.

The following limitations shall hold:

1. Payment shall be limited to those who are on essentially full time service on the instructional *and research staff* of the rank of instructor, assistant professor, associate professor, or professor, *or their equivalent*, and those of the administrative staff who are members of the University Senate.

2. The maximum to be paid to any widow shall be \$2,000.

3. Any widow not caring to take the money may assign it to the University to be held in trust by the Regents of the University as a relief fund, or for any other purpose which the widow may care to designate. The terms of the assignment and the trust to be acceptable to the Board of Regents.

4. In case the Regents at some future time put into operation a scheme for death benefits and retiring allowances, the above plan shall cease to operate.

In defense of the above plan, the following may be offered:

I. This plan is looked upon as a temporary expedient and therefore is made as simple as possible in the belief that it will soon be abandoned in favor of a more comprehensive plan of death benefits and retiring allowances. Accordingly the scheme is limited to those members of the staff in the academic ranks and also to those who have widows, even though it is recognized that there are many other members of the staff whose cases will prove as needy as the ones included in this plan.

II. It has been thought best to state the payments in terms of a certain fraction of the annual salary of the individual. In this way the minimum is one-fourth of the annual salary. The maximum depends upon the length of service, ranging from one-fourth for those who have been in service four years or less, to one-half of the annual salary for those who have been in service fifteen years or more.

III. On the basis of the experience of the last six years, one-fourth of the average of the salaries of those who die in one year is just less than \$3,000 per year, while one-half of the average of the annual salaries is just less than \$6,000. Taking into account, as recommended above, the length of service of those who have died and the \$2,000 maximum, the average annual expenditure for death benefits would be between \$4,000 and \$4,500 per year.

IV. It is understood that this plan shall be followed insofar as the funds of the University will permit.

CLASSIFIED CLERICAL AND STENOGRAPHIC SERVICE OF
THE UNIVERSITY

Experience with the plan for the classification of the stenographic and clerical service of the University, which was adopted May 18, 1925, demonstrated very clearly the need of revision. The original plan did not provide adequately for promotion, nor did it provide for classes of service corresponding to real variations in the work actually done. A comprehensive study of all persons engaged in clerical and stenographic work in the University, particularly with regard to the types of work which they were expected to perform in their respective positions, by a special committee, appointed by the president, resulted in the following salary schedule and classification of persons. This was formally approved on June 2, 1928, and put into operation the beginning of the current year.

I. For those just entering University service:

	1st yr.	2nd yr.	3rd yr.	4th yr.	and after
Class 1	\$ 780	\$ 840	\$ 900		
Class 2	840	900	960		
Class 3	960	1,020	1,080		
Class 4	960	1,020	1,080	\$1,140	\$1,200
Class 5	1,020	1,080	1,140	1,200	
Class 6	1,200	1,260	1,320	1,380	
Class 7	1,380	1,440	1,500	1,560	
Class 8	1,500	1,600	1,700	1,800	

NOTE 1. The above salaries are maximum. It is allowable for officials to engage persons at a lower salary than above stated in case a person is engaged who is not well prepared for the work and must be expected to grow into the position.

NOTE 2. The above salaries are not guaranteed except upon recommendation of the head of the department concerned. The object of the schedule is to guarantee to the department heads the approval of the higher salary in case they recommend it but it is understood that it will not be recommended unless the work of the appointee is entirely satisfactory.

II. For those who are promoted from a position in one salary classification to a position in a higher classification.

When a position is filled by the promotion of a person from a position of lower classification, the salary will be that indicated for the first year in the table above except where that figure is the same or less than the person is receiving in the lower classification. In such case, the person will be granted an increase of \$60 per year in salary when accepting the new position.

III. The year of service in the above schedules means the fiscal year from July 1st to July 1st.

Provided a person employed from as early as November 1st will be regarded as having rendered a year of service by the following July 1st.

Those employed after November 1st will not be qualified for advance in salary until the second succeeding July 1st, unless special exception is made for them at the time of their employment.

CLASSIFICATIONS		SALARY RATING
GENERAL	SPECIFIC	
I. CLERKS		
1.	Junior group	
(1)	Junior clerk	1
(2)	Junior account clerk	2
(3)	Junior file or mail clerk.....	1
(4)	Junior record clerk	2
(5)	Junior stores clerk	1
(6)	Junior office appliance operator.....	1
2.	Clerk group	
(1)	Clerk	3
(2)	Account clerk	5
(3)	File or mail clerk.....	3
(4)	Record clerk	3
(5)	Statistical clerk	5
(6)	Stores clerk	5
(7)	Office appliance operator	3
3.	Senior group	
(1)	Senior clerk	6
(2)	Senior account clerk	6
(3)	Senior file or mail clerk.....	6
(4)	Senior record clerk	6
(5)	Senior statistical clerk	6
(6)	Senior stores clerk	6
II. CLERK STENOGRAPHERS		
1.	Junior clerk stenographer	1
2.	Clerk stenographer	3 or 4
3.	Senior clerk stenographer	6
III. SECRETARIES		
		6, 7, or 8

DIVISION OF LIBRARY INSTRUCTION

For years the University has recognized the importance of training for library work. Fourteen or fifteen years ago it co-operated with the State Department of Public Instruction in providing opportunities and facilities on the campus during the summer for the training of librarians in the public schools, and later, in co-operation with the State Department, it offered training on the campus during the regular year. The work was always more or less sporadic, never closely organized, and the demand for it was never very insistent.

In more recent years, however, the State Library Association has been adopting annually resolutions requesting the establishment of regular courses for training in library work. The school librarian is recognized as being indispensable to the school organization, and the growth of the public libraries and the differentiation of the administrative and teaching functions of their personnel require highly specialized training.

In recognition of these growing needs, the University of Minnesota has created a Division of Library Instruction, the administration of which is independent of any of the existing colleges and schools of the University and shall be in charge of a director of the Division of Library Instruction. It shall be the duty of the Division of Library Instruction to co-operate with the several degree granting colleges and schools in formulating curricula for the preparation of librarians for the several types of library work now demanded throughout the state, and to organize courses and offer instruction to meet the professional requirements called for by the curricula thus formulated.

Intimate relations exist between the university library staff and the Division of Library Instruction. It is expected that at the outset the library instruction will be provided by the university library staff, by librarians within easy reach of the University, and by at least one full time instructor.

The cost of maintaining the Division of Library Instruction should not exceed the student fees to be collected from those students who pursue courses of study offered by the division. However, such fees will probably not cover the cost of instruction in the non-professional courses which will be pursued by Library Division students simultaneously with the professional library courses.

The university librarian has been made director of the Division of Library Instruction, and the faculty of the division, hereafter to be approved by the Board of Regents, is to be recommended by him.

ARCHIVES OF THE UNIVERSITY

At the January meeting of the Board of Regents, Dr. Folwell appeared before the board and submitted the following communication :

Minneapolis, Minn.
December 31, 1927

DEAR PRESIDENT COFFMAN :

I beg leave to suggest for your consideration the establishment of University Archives. I have lately had occasion to turn over early minutes of the Board of Regents, and have noted mention of reports and other documents "placed on file" but have not discovered any office or place of filing. Some of them may have been utterly lost.

I do not need to impress on you the importance of collecting documents which have gone into history and all publications in all branches of the University except printed books and pamphlets owned by the library, and of cataloguing and arranging them so that they may be found as easily as books in the library.

The general library would seem to be the appropriate place for the archives and the head librarian would naturally be designated as archivist.

Very respectfully yours,

WM. W. FOLWELL.

Dr. Folwell then submitted the following resolution which was unanimously approved by the Board of Regents :

That archives of the University are hereby established in the general library to be conducted according to the best practice, and that the librarian of the University is designated as archivist.

AGREEMENT WITH THE STATE LIVESTOCK SANITARY BOARD

In 1912 the University entered into an agreement with the State Livestock Sanitary Board to carry on certain diagnostic work for it. This work has increased so enormously in volume that the State Livestock Sanitary Board requested of the last legislature an appropriation of \$7,500 for 1927-28 and \$6,500 for 1928-29 to carry it on. The appropriation was mandated by the legislature but vetoed by the governor. The importance of the work was clearly recognized by everyone, although it was at the same time recognized that the work had long since passed beyond the point where it was of any educational value to the University and that the bulk of it was purely a service to the state. It was believed that the work was so important that every effort should be made until the matter could again be brought to the attention of the legislature and the chief executive of the state. For this reason a special committee consisting of Colonel C. H. March, Mr. W. S. Moscrip, Dr. C. P. Fitch, Dr. Charles E. Cotton,

Dean W. C. Coffey, Dr. W. J. Mayo, and President L. D. Coffin, was appointed to review the situation. A conference was arranged on July 19, 1927. As was stated above, the occasion of this conference arose out of the fact that this work had increased to such an extent as to require additional funds for its support. The members of the conference were unanimously of the following opinions:

1. That the original 1912 agreement, so far as the University is concerned, was distinctly for educational and research purposes.

2. The service demanded by owners of livestock has passed beyond the point of its educational value to the University. Much of it is now of a routine character.

3. This routine work is work which should be financed by the State Livestock Sanitary Board.

4. The livestock owners of the state have relied upon this service so many years and have been so accustomed to sending their specimens to the University for attention that the routine work should, if possible, be continued at the University but financed by the State Livestock Sanitary Board.

5. In view of the emergency that has arisen due to the increase in the number of specimens sent to the Division of Veterinary Medicine and to the veto by the Governor of the appropriation made to cover this service, the State Livestock Sanitary Board and the Regents believing this service to be of value and desiring, if possible, to see it continued in some form, agree that the State Livestock Sanitary Board will undertake to find within the limits of its present budget enough money to defray approximately one-half of the cost of this routine service for the next two years, and the University will undertake to supply the other half. If either, or both, of these boards finds that it is impracticable for it to carry on this agreement, then it is understood that the work beyond the point where it is of distinct educational or research value must be discontinued.

6. If the two boards find a way of carrying the work for a period of two years, it is understood that they will join in a request two years hence for an appropriation to care for the work, but in case money cannot be provided by this means to care for the work, then it is agreed that the service must be discontinued.

This report was submitted to the State Livestock Sanitary Board and to the Board of Regents of the University and approved by both. Steps were then taken to carry on the work during the remainder of the biennium, each board contributing its share of the cost.

THE LUNELL HERBARIUM

In the field of biological science the University of Minnesota occupies a rare strategic position. Situated in a state which has a geographic location and a range of latitude and longitude to afford a wide variety of those climatic factors which are known to influence the characteristics of fauna and flora, which has been further modified and highly diversified over much of the area by several different glaciations that have affected both topography and soils, and which, moreover, embraces within its boundaries the headwaters of three of our greatest river systems along which plant and animal organisms may have migrated in times past, it provides an ideal opportunity for the investigation of many problems of the relations of plants and animals to their environment. These problems are not merely of the greatest scientific interest but of enormous economic importance as well.

If this very great opportunity of the University of Minnesota is to bear fruit in that kind of public service which we call scientific research, it is necessary to accumulate at the University all of the materials possible which will throw light on the problem of the natural resources of the state. Since these cannot be adequately interpreted without reference to surrounding regions, it is essential to make the foundations for such research far wider than the limits of the state itself.

The purchase of the Lunell Herbarium for the Department of Botany by the Board of Regents in June, 1927, represents more than the mere acquisition of 15,000 to 20,000 fine specimens. It marks a step forward in a department policy of developing the investigation of the flora of the Northwest. The herbarium of the department is already rich in such materials. The addition of the Lunell collection will be of great value in completing our sources of exact information concerning the flora of the prairie regions. Dr. Lunell worked primarily in North Dakota, but many of his specimens have critical value in their bearing on the problem of the flora of Minnesota.

The man who is untrained in the discrimination of the fine differences which are found between species of plants cannot fully realize the importance of having preserved in our universities for future reference actual specimens from as many localities as possible. This is important not merely for the classification of plants,

but for the purpose of affording exact information concerning their distribution.

Dr. J. Arthur Harris, head of the Department of Botany at the University of Minnesota, commenting upon the Lunell Herbarium says:

Since the Lunell Herbarium is an important acquisition of the Department of Botany of the University of Minnesota, it is worth while to glance for a moment at the life of the man who brought it together.

Joel Lunell was born on March 30, 1851, in Kalmerslott, an ancient castle overlooking the Baltic Sea on the coast of Sweden. He emigrated to the United States in October, 1887, bringing with him the responsibility of a family of a wife and three children.

After a year devoted to the practice of medicine in association with Dr. Fleisburg in St. Paul, he felt the irresistible call of the frontier and took up his medical practice at Willow City, North Dakota, in 1889. This was at a time when cities were but names which expressed the hopefulness and ambition of those who were living in dugouts, sod houses, or board and tar-paper shelters. He lived at Willow City for about five years before removing to Leeds, North Dakota, where he remained until his death on March 27, 1920.

From the first moment of his arrival on the plains, Lunell began to collect and study the plants of the region. As a student in Sweden, his leisure time had been devoted to the collection of plants, all of which he had left behind when he came to the United States.

Besides being a practicing physician, Lunell was a citizen of his community. To his medical work was added, at one time or other, his services as postmaster, coroner, alderman, and mayor. Demands upon the one doctor available to a widely scattered frontier population often crowded out eating and sleeping, but the large tin vasculum of the botanist invariably accompanied the small black bag of the doctor, and if the long outgoing journeys to visit those in distress permitted of no delay, the returning trips always afforded opportunities for noting and collecting plants of particular interest.

While Dr. Lunell is known widely to students of the flora of the west through his collections, and his systematic botanical notes and papers, perhaps few are aware that he was a man of highly varied interests.

He is said to have pursued his earlier education with unusual distinction. His studies in medicine completed at the University of Upsala were followed by graduate work at the Carolyn Institute at the University of Stockholm. Whatever may have been his formal academic record, his later life bears ample witness to the breadth and thoroughness of his training.

During the six years of his studies at Upsala he spent his vacations as tutor in Latin and music. He not only read Latin, Greek, and Hebrew, but was familiar with several modern languages. This proficiency he turned to good account by making available to those whose reading was limited to the Swedish language various works which appeared originally in Eng-

lish, French, German, and Russian. Among these volumes were Mark Twain's *The Prince and the Pauper*, *Huckleberry Finn*, *Tom Sawyer*, and *Innocents Abroad*, Brillet-Savarin's *Physiologie de Gat*, Tschernyshevsky's *Tchito Pjeleli*, works by Marryat, pamphlets by Bebel, and various technical works.

CURRICULUM IN LANDSCAPE ARCHITECTURE

At the joint request of the College of Agriculture, Forestry, and Home Economics and the College of Engineering and Architecture, the regents approved a curriculum in landscape architecture, prepared by the two colleges. The work of the first two years is more largely in the School of Architecture and the last two years is somewhat equally divided between the College of Agriculture, Forestry, and Home Economics and the School of Architecture. The course is a professional course in landscape architecture, not merely a course in landscape gardening or ornamental planting. Landscape architecture involves the principles of architectural design, the fundamentals of engineering and architecture, various phases of construction such as the modification of considerable areas of the terrain by moving large quantities of earth, and the more highly specialized applications of landscape design.

LAWS AND REGULATIONS OF THE UNIVERSITY

The laws and regulations of the University were first compiled in 1920 by Professor James Paige, at the request of the Board of Regents. Due to the fact that these laws have been subjected to considerable modification since then, and many new regulations have been adopted, the regents voted to request Professor Paige to revise them, bringing them down to date.

ANNUAL REPORT OF THE UNIVERSITY OF MINNESOTA

The annual report of the president and the other administrative officers of the University has become large and expensive. It is chiefly valuable as a historical document of the University. It was thought that it might be possible to reduce the size of the report and to issue it, or parts of it, in such a way as to increase its educational value. At the suggestion of the Administrative Committee of the Senate, the president appointed a committee which made the following recommendations. The plan is to follow these recommendations to begin with the year 1929-30.

1. That the *President's Report* shall be prepared once in two years rather than each year, the biennial period for the report being from July 1 in one even year to June 30 in the next succeeding even year.

2. The part of the *President's Report* which is prepared for wide distribution shall be such as is prepared over the President's signature. This should be reasonably brief, containing from 25 to 50 pages, and prepared for the purpose of setting forth the President's point of view concerning the essential problems confronting higher education and recording the distinctive advances made in the University of Minnesota during the biennium under review. Only such facts and statistics shall be recorded in this report as are necessary to support the President's discussion.

3. There shall be prepared a University biennial report in addition to the *President's Report* suggested above which will contain reports from the various units of the University, made out in such detail as is necessary to record the progress of the several units. While this University Report will be primarily for the purpose of record, it nevertheless may properly contain a discussion of the problems and tendencies being experienced in the several units along with fairly complete factual data. This report will be for distribution essentially on the University campus and to other institutions which will wish to make use of such detailed data. It will be understood that the *President's Report* described under "2" above will give publicity to the outstanding developments in the several units and therefore it will not be necessary to give wide distribution to the University Biennial Report. Where the report submitted from any one of the units in the University shall have sufficiently wide interest to justify its distribution to a considerable number of people, arrangements may be made for its separate publication through the University Press.

Respectfully submitted,

(Signed) W. C. COFFEY

J. B. JOHNSTON

F. J. KELLY, *Chairman*

FEES

Many changes in fees occurred during the year. Some new fees were established. Both the list of changes and the new fees appear herewith:

Voted to approve laboratory service fee of \$1.00 per course for the Department of Speech.

Voted to authorize that the Annual Short Course in Embalming be lengthened from twelve to twenty-four weeks, or two quarters, and the establishment of the fee at \$55 a quarter.

Voted to authorize discontinuance of the \$10 military deposit for students enrolled in advanced R.O.T.C. courses effective beginning with the academic year 1928-29, and the immediate refund of the military deposit of \$10 to advanced course students made by these students for academic year 1927-28.

THE PRESIDENT'S REPORT

Voted to approve the following changes of fees for the University High School effective beginning with the academic year 1928-29:

1. Discontinuance of key deposit, chemistry breakage, and other service fees of this kind.
2. Inauguration of an annual deposit fee of \$5 in lieu of key deposit, chemistry breakage, and other deposits of this kind.
3. Inauguration of a quarterly towel fee of \$1.50 for men in lieu of purchase of a towel card.
4. Inauguration of a deposit of \$11 in the spring for tuition to be forfeited in case the individual does not enter the University High School except when failure to enter is due to the removal of the family from the Twin Cities or to serious illness or death of the pupil.

Voted to authorize the following changes in fees beginning with the fiscal year 1928-29:

Graduate School	
Residents	\$10 to \$20 per quarter
Non-residents	10 to 30 per quarter
Law School	
Residents	\$30 to \$40 per quarter
Non-residents	40 to 50 per quarter
Medical School	
Residents	\$60 to \$75 per quarter
Non-residents	70 to 100 per quarter

Voted to authorize increase of incidental fee effective beginning academic year 1928-29 from \$5 per quarter to \$6 per quarter with the understanding that the additional \$1 is to be charged as a library fee.

Voted to authorize subdivision of summer session term flat fee of \$25 into—tuition fee \$22.50, incidental fee \$2.50 with the understanding that the incidental fee is to be divided—Health Service \$1, recreation \$1, and Minnesota Union or Shevlin Hall \$.50.

Voted to authorize increase of the summer session term incidental fee effective beginning with 1929 summer session from \$2.50 to \$3 with the understanding that the additional \$.50 is to be charged as a library fee.

Voted to authorize the establishment of a Division of Library Instruction and to refer to the president of the University with power the fixing of fees at a point to enable carrying on the instruction.

The president of the University established the following fees for the Division of Library Instruction:

Resident students	\$40 per quarter
Non-residents	45 per quarter
Credit hour fees	3 per credit hour

Voted to authorize the addition of grades seven and eight to the University High School organization and to authorize fees for these grades at \$15 per quarter beginning in fall 1928-29 and to increase high school fees to \$15 per quarter effective beginning academic year 1929-30.

Voted to authorize the following credit hour fees for students who carry less than full work in the Graduate School, the Law School, and the Medical School, effective beginning with the year 1928-29:

	Resident	Non-resident
Graduate	\$1.75	\$2.50
Law	3.75	4.75
Medicine	3.25	4.50

Voted to approve the following fees for students in clinical medicine effective beginning with the year 1928-29:

Resident	\$ 75 a quarter
Non-resident	100 a quarter

Voted to approve the addition of forty cents per quarter to the incidental fee of students in the College of Engineering and Architecture, the School of Mines and Metallurgy, and the School of Chemistry to be credited to the *Minnesota Techno-Log*.

Voted to establish a tuition fee for the University Elementary School for the first term of 1928 Summer Session at \$10 per student.

Voted to approve a special fee of \$10 for each of the following institutes, July 9 to 21, 1928:

- Institute on the Problems of School Library Administration
- Institute on the Professional Problems of Teachers and Teacher Organizations
- Institute on the Problems of Higher Education

UNIVERSITY LIFE

UNIVERSITY LIFE

HOW TO STUDY CLASSES

The introduction of "How To Study" classes is an outgrowth of the work of faculty counsellors. Personal interviews with students indicated a need for training in study techniques which, owing to the excessive time involved, could not be given individually. An organized effort therefore has been made to discover whether it was possible to train students to study effectively through a combination of lectures and practice work in the classroom. Accordingly opportunity was offered to students to enroll in a non-credit course which would meet during the fall quarter, three hours each week during a five-week period. The enthusiasm displayed by the first group of twenty-five students led to the repetition of the course during the latter half of the fall quarter, when forty-six students on probation were assigned for training, and during the winter and spring quarters when other groups of volunteers were in attendance.

Efforts were directed chiefly to increase the efficiency of the students through training in (1) the conservation and effective use of their time; (2) making notes which would represent both their own thinking and the plan of the lecturer; (3) studying assignments with the problem solving attitude and particularly by recitation methods instead of merely reading them; (4) reading silently and rapidly to assimilate ideas and to grasp facts in their relationships to specific problems; and (5) preparing for examinations through systematic and frequent reviews. Lectures were followed by practice periods when instructors and assistants would give individual aid as required. Valuable information obtained from time budget sheets, which each student filled out daily during the course, as well as the results of tests designed to measure speed and accuracy of reading, were made available to the class as bases for checking personal achievement.

Space does not permit a review of all of the advantages which appear to issue from the training given in the short courses, but improvement in scholarship is one deserving emphasis. The twenty-five students in the first course offered were matched with an equal number of freshman students who did not take the

course, but whose qualifications in every other respect most nearly equalled those of the students in the "How To Study" group. During the fall, winter, and spring quarters, respectively, the honor point ratios of the "How To Study" group were 1.4, 1.41, and 1.4, while in contrast the matched group showed the following ratios during the same three quarters, .77, 1.00, and .91. On the other hand, the efforts with the probation students did not meet with marked success although there were striking individual improvements.

An analysis of all the results obtained from the students enrolled during the three quarters indicates that "How To Study" classes cannot help most of the students who rank in the lowest quartile of the combination of college ability and high school scholarship percentile ranks to an extent which enables them to meet the requirements of the Senior College. But it does appear that both the average and superior students profit considerably by training in study techniques. This fact has led to the introduction of a full quarter course in study methods which carries university credit and which will be repeated each quarter during the coming academic year.

FRESHMAN SCHOLARSHIPS

In the spring of 1927 the University offered fifty freshman scholarships of one hundred dollars each to be awarded by a committee on the basis of high school scholarship record, standing in certain tests to be given and personal information furnished by the student and his teachers. The committee announced that the tests would be held at the University in May and distributed application blanks to the high schools. These blanks provided for a recommendation by the principal that the student be admitted to the tests. Only those students who made applications and were so recommended were considered in awarding the scholarships.

About 285 students took the tests. From those the committee named 50 scholars and 26 for honorable mention. Of the 50 scholars 48 accepted the scholarships and the 2 vacancies were filled from the list of honorable mention.

The scholarships were awarded solely on the basis of promise of successful work as students, without reference to the financial circumstances of the student. It was found after their entrance

that 27 of the scholars needed to earn money in addition to their scholarships.

The following indicates the extent of these earnings:

No. of Scholars	Earnings
3	All their expenses
1	Almost all
2	Board, room, and one half of other
2	Board, room, and carfare
1	Four fifths of all expenses
1	Three fourths of all expenses
1	Two thirds of all expenses
2	One half of all expenses
4	One third of all expenses
2	One fourth of all expenses
1	Board only
2	All except board and room
1	Tuition only
1	All money for incidentals
3	Amounts not stated

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27

The following table summarizes the scholastic standing of the fifty scholars. The letters used signify:

- A— marks of A in all courses for the freshman year
- B+ etc., average mark in all courses
- a marks uniform or improving through fall, winter, and spring
- b marks declining more or less

	Number	Earnings	
A	3	All, $\frac{1}{2}$	
B+a	5		
B+b	6	Almost all, $\frac{1}{4}$	
B-a	8	All, board only, tuition	
B-b	5	Incidentals, board	
C+a	7	All, one-half, one-third	
C+b	4	Four-fifths, one-third, one-third	
C-a	3	One-fourth, board and room	
C-b	4	All but room and board, one-third	
D+a	2	Incidentals, one-half	
D+b	3	Three-fourths, one-half, two-thirds	
a— total with improving grades.....			28
b— total with declining grades.....			22
B and A.....			27
C+, B, and A.....			38
C, B, and A.....			45
D.....			5

The five D students fell to the average or perhaps a trifle below the average of the entire freshman class.

This record on the whole is good but at least twelve of the scholars fell below what could reasonably be called distinguished work. It does not appear that the amount of work for self-support was greater in case of those who made the poorest scholastic records.

In the spring of 1928 the members of the Association of Minnesota Colleges wished to co-operate in offering the scholarships. It was announced that each of the colleges would give free tuition to any student to whom a scholarship had been awarded. The association's committee on scholarships asked the dean of the College of Science, Literature, and the Arts and his associates at the University to administer the tests and award the scholarships as the University would do in the light of its previous year's experience. This was done. Tests were offered in 16 centers in the state in addition to the 12 high schools of the Twin Cities. About seven hundred students made application and took the tests.

Of the 50 scholarships awarded 41 were accepted, 8 were declined, and in the case of 1 student our notices were returned by the post-office undelivered.

The scholars have entered colleges of the association as follows:

St. Catherine's	3
Macalester	2
Gustavus Adolphus	2
St. Olaf	1
University	33

From our experience there are two things clearly evident. One is the fact that the recommendations of the principals did not ensure a selection of the better students to take the tests. A large part of the applications came from persons whose past record gave not the faintest suggestion of hope that they could compete successfully for such scholarships. The principals evidently did not understand or did not give thought to what was wanted. At the same time a few principals neglected to send in any recommendations and some students who would have had excellent grounds for application did not receive consideration.

The second point is that the measures of prospective scholar-

ship are not adequate to enable us to select fifty scholars all of whom will become distinguished students.

An examination of the college ratings of about 6,000 students in the summer and fall of 1928 shows that a large number of very promising students are not attending any Minnesota colleges. The offering of fifty scholarships is not an effective way of enlisting the interest of these students. We should decide on some procedure which would enable us to bring to bear all legitimate influences toward higher education (not propaganda for the University) in the case of 400 or 600 or more of the most promising graduates of the state high schools. Then if each college of the association would offer to consider applications for financial aid, under proper safeguards, from any of the students included in the list, we should probably exert a considerable and growing influence toward improving the type of college students.

CO-ORDINATION OF COLLEGE AND VOCATIONAL GUIDANCE AGENCIES

During the year a committee, appointed to make a study of the various agencies on the campus dealing with college and vocational guidance, prepared a complete report which was submitted to the president and to all of the interested groups.

During the forthcoming year it is expected that some concrete action will result from this committee's study.

EFFORTS TO IMPROVE STUDENTS' OPPORTUNITIES FOR COLLEGE SUCCESS

Substantial progress has been made during the past year in extending to high school students throughout the state the opportunity to take college aptitude tests. A detailed report of the steps taken in continuation of the program, which now has been developing for seven years, is given in the report of the dean of the College of Science, Literature, and the Arts. In these most recent efforts to bring to college students who have some reason to expect success in the higher academic atmosphere, it has been possible for the University to work in the closest co-operation with the other colleges of the state.

An experiment working toward a still further development

of a program to reduce the "mortality" of college students was authorized and undertaken by the Committee on Educational Research in the form of a Summer Session for Self-Appraisal.

UNIVERSITY FUNCTIONS

The following convocations were held during the year:

- July 28: Summer session commencement exercises: Raymond Asa Kent, Dean of the College of Liberal Arts, Northwestern University, "The Ordeal of Education"
- September 29: Freshman welcome convocation in the Stadium: Lotus D. Coffman, President of the University
- November 3: The Reverend Arthur Pringle, "These Good New Times"
- November 17: The Honorable Rhys J. Davies, "Is Universal Peace Possible?"
- December 1: Glenn Frank, President of the University of Wisconsin
- December 15: Fall quarter commencement exercises: Henry Merritt Wriston, President of Lawrence College, "The Major Premise."
- January 19: William Oxley Thompson, President Emeritus, Ohio State University, "Toleration in a Democracy"
- January 26: The Reverend Thomas W. Graham, Dean of the Graduate School of Theology, Oberlin College, "A Venture in Imagination"
- February 9: Bayard Dodge, President, American University of Beirut, Syria, "The Awakening of the Near East—A Challenge to Modern Educators"
- February 23: Military convocation: Major General Charles P. Summerall, Chief of Staff, United States Army, "The Educated Man and National Defense"
- March 15: Winter quarter commencement exercises: Virginia Gildersleeve, Dean of Barnard College, Columbia University, "Happy Landings"
- April 12: John Erskine, Professor of English, Columbia University, "The Moral Obligation To Be Intelligent"
- May 10: Cap and Gown Day convocation: Harry G. Harvey, President of the All-University Senior Class, "Presentation of the Class of 1928"; Lotus D. Coffman, President of the University, "Response"
- May 24: Hamlin Garland, Author, "The Westward March of the Pioneers"
- June 10: Baccalaureate service: The Reverend Burris A. Jenkins, Pastor of the Linwood Christian Church, Kansas City, ". . . God and Me"
- June 11: Commencement exercises in the Stadium: Glenn Frank, President of the University of Wisconsin, "From Classroom to Commonwealth"

The Committee on University Functions made a careful and thorough study of the relation of the faculty to academic functions with special reference to the participation of the staff in the commencement exercises. The results of this study led to the following recommendations (1) that beginning with the June Commencement, 1928, all members of the Uni-

versity Senate be required to attend the exercises unless excused by the president, (2) that a study be made of the cost and feasibility of providing caps and gowns for both students and faculties on a reasonable rental basis.

The committee further recommended that on Cap and Gown Day only the list of students elected to honor societies be read and that there be published in the program of the day a list of all other scholarships, fellowships, and prizes which are entitled to recognition.

These recommendations were approved by the Administrative Committee and later adopted by the University Senate.

Plans had been made, budget approved, and work actually begun in preparation for the presentation of a university pageant entitled, "The Pioneer Spirit" on May 18 and 19. Unfortunately another enterprise, the purpose of which was to send the University Band to Europe, got under way and with extensive state-wide publicity and organization arranged for the culmination of its program on University Appreciation Day, May 5. The committee felt that it would be unfortunate to attempt to interest the University and the general public in two enterprises coming so close together, and as it was impossible to merge the two, the committee decided to abandon its plans for this spring at least.

The June Commencement was held again in the Stadium, the procession beginning at three o'clock. The weather was uncertain and threatened to drive the assemblage into the Field House, but by overwhelming vote the class elected to remain in the stands at the expense of a slight sprinkling. The presence of 140 members of the Senate in the commencement procession was very gratifying and added much to the significance of the occasion.

The number of candidates for each of the graduation periods of 1927-28 is as follows:

First summer session, June 30, 1927.....	187
Second summer session, September 3, 1927.....	129
Fall quarter, December 15, 1927.....	216
Winter quarter, March 15, 1928.....	164
Spring quarter, June 11, 1928.....	<u>1,380</u>
	2,076

UNIVERSITY CONCERT COURSE

The artists presented on the University Concert Course were John Charles Thomas, baritone; Florence Austral, soprano; Jascha Heifetz, violinist; Tito Schipa, tenor, and Mr. and Mrs. Josef Lhevinne, pianists.

The audience was composed largely of students and faculty members. It is gratifying to note that each year an increasing number of students appreciate their opportunity to hear world-famous artists at such remarkably low prices.

MUSEUM OF NATURAL HISTORY

Everyone familiar with the campus of the University knows of the work which Dr. Thomas S. Roberts has been doing in collecting specimens of the animal life of Minnesota and of the Northwest, and building exhibits setting forth groups of these specimens under conditions typifying their natural habitats. These groups have been located in the Zoology Building and the collections have been known as the Zoological Museum. At Dr. Roberts' suggestion the name was changed during the year from Zoological Museum to Museum of Natural History, which more nearly, of course, describes the nature and purpose of the collections.

One finds it difficult to call attention to the extraordinary value of the work which Dr. Roberts has been doing in collecting these groups and making them available to the people of the state without at the same time saying something about the need of a real Museum of Natural History upon the campus of the University. Sooner or later, no doubt, someone will make the funds available for such a structure. What a piece of great good fortune it would be if such a building could be erected now when Dr. Roberts could assist with its planning and with the preparation and installation of groups of animals and birds typifying the life of this region!

EXTERNSHIPS IN BUSINESS

Thirty seniors in the School of Business Administration spent three months during the winter in actual business positions, earning the salary of a man of their age and ability, and coming into contact with the real thing—the everyday give and take and the normal thorny problems of business life.

Dean Stevenson, of the School of Business Administration, believes that young men should learn business by taking part in business. He does not mean by this that they should step right into a job instead of going to college, for the college is necessary to give them the fundamental theory. It places in their hands the tools with which they can operate when they are placed in a business situation. But he does believe that the conditions under which they begin to practice should be real.

Most of the men who spent the winter quarter in business instead of classroom were students of accounting, although some

of them were in mercantile establishments. Some worked in Chicago; some, in Duluth; most of them, however, in Minneapolis and St. Paul.

"In most of the professional schools there are adequate laboratories on the University campus," Dean Stevenson says. "The engineer has his shops; the medical student, his hospital; the dental student, his clinic; and the student of agriculture has a whole farm, with flocks and herds, where he may see theory put into practice and help in exemplifying it. But it is impossible to create a similar laboratory of business on a university campus." For this reason, contacts have been established with various business organizations, corporations, and establishments, whereby the advanced students in the School of Business Administration who have maintained a creditable scholarship average may have an opportunity to get actual experience on the job.

THE FIELD HOUSE

The University of Minnesota Field House, which was dedicated February 4, 1928, is one of the largest structures of its kind in the country. It is 446 feet long, 236 feet wide, and 104 feet high; cubical contents—8,200,000 cubic feet.

It was erected at a cost of \$650,000, of which \$200,000 was on hand from athletic receipts. Certificates of indebtedness were issued to cover the balance, which is a charge against athletic earnings. None of the cost will be met by state appropriations.

The new building not only provides adequate facilities for basket-ball, which was the great immediate need, for Minnesota teams had been playing their games on the Minneapolis Armory floor for a number of years, but a complete football field can be laid out within its walls. Here the football team can practice in inclement weather and the baseball team can secure its early training in throwing, batting, and infield practice. The great indoor area provides at one time for baseball, football, tennis, intramural basket-ball, and other minor sports. There is opportunity for track athletics also. The original plans called for an addition to the structure to be used as a swimming pool.

At the east end of the building provision is made for 9,000 permanent seats and when bleachers are added the capacity can be raised to 17,500.

CHANGES IN THE FACULTIES

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RESIGNATIONS

Frederick James Kelly—

Dr. Frederick James Kelly, dean of administration of the University of Minnesota since July 1, 1923, resigned in January to accept the presidency of the University of Idaho. Dean Kelly devoted much of his time to studies of higher education; he directed the Summer Session of the University of Minnesota; and assisted directly with the administration of the institution. His contributions to the administrative procedure of the University of Minnesota were numerous and sweeping in character. Dr. Kelly's experiences as a teacher, director of a training school at the Kansas State Teachers' College, dean of administration of the University of Kansas, and dean of administration of the University of Minnesota, his wide experience in connection with the surveys of the University of Pennsylvania, the University of Texas, and of other institutions, and his general knowledge of university administration in general, as well as his scholarship and experience, made it inevitable that sooner or later he would be invited to accept the leadership of one of the universities of this country.

Francis Jager—

For almost a generation the name of Professor Jager has been associated with bee culture at the University of Minnesota. His keen personal interest in this field and his knowledge of bees apparently have increased with the passing years; and the romantic stories which Professor Jager could tell, hour without end, about the life and history of bees did much to popularize both him and his work in this state. At his own request, his resignation was accepted in order that he might devote himself more intimately to private bee culture.

John Hasbrouck Van Vleck—

Dr. Van Vleck came to the University of Minnesota as an assistant professor. From this rank he rose rapidly to that of professor. His field was physics. His chief interest was what is commonly termed the application of mathematical theory

to certain problems in the field of physics. The number of men capable of working in this field is limited. Dr. Van Vleck soon acquired distinction as one of the most promising men in America. He has been appointed to a position in the University of Wisconsin.

Harold F. Kumm—

Professor Kumm has been a member of the university staff for eight years. He decided to withdraw from teaching to engage in business.

Otto G. Schaefer—

Professor Schaefer came to the University of Minnesota in 1919 as an assistant in dairy husbandry. From this rank he rose to that of associate professor. He presented his resignation in order that he might accept a position on the staff of the *Dairy Farmer*, New York City.

Resignations.—During the year the following members of the rank of professor, associate professor, or assistant professor, in addition to those listed above, resigned from the faculty: Vernon M. Williams, assistant dean of student affairs; Jacob O. Jones, professor of mathematics and mechanics; Elmer J. Working, associate professor of agricultural economics; Ira S. Allison, assistant professor of geology; John H. Beaumont, assistant professor of horticulture; Herman C. Beyle, assistant professor of political science; Major Frederic H. Bockoven, assistant professor of military science and tactics; Geoffrey B. Bodman, assistant professor of soils; Clarence E. Cason, assistant professor of journalism; Jay K. Ditchy, assistant professor of Romance languages; Edith D. Dixon, extension worker and assistant professor in Institute of Child Welfare; W. L. Fichter, assistant professor of Romance languages; Ronald M. Hazen, assistant professor of mechanical engineering; Irving W. Jones, assistant professor in General Extension Division and associate director of the Summer Session; Alexander H. Krappe, assistant professor of Romance languages; Raymond E. Lubbehusen, assistant professor of veterinary medicine; William J. Miller, assistant professor of rhetoric in Department of Agriculture; Captain William F. Rehm, assistant professor of military science and tactics; William Robinson, assistant professor of entomology;

Emerson G. Sutcliffe, assistant professor of English; George W. Swenson, assistant professor of electrical engineering; Captain Arthur R. Walk, assistant professor of military science and tactics.

IN MEMORIAM

The University suffered the loss by death of two of its professors during the year, Professor Cephas Daniel Allin and Professor Frederick Leonard Washburn. The University Senate, on December 15, 1927, voted the following resolutions:

Cephas Daniel Allin, 1875-1927—

Mr. Allin was born at Clinton, Ontario, and was a graduate of the University of Toronto of the class of 1897, receiving two years later from the same institution the degree of LL.B. After gaining his M.A. degree at Harvard he spent a year at the University of Berlin and in 1904 a year at Oriel College, Oxford.

Previous to his coming to the University of Minnesota in 1906 as instructor in political science, he had served as instructor in history at Queen's University, Canada. He rose rapidly in rank at Minnesota and finally became chairman of the Department of Political Science. In the building up of this department he gave of his best in ability and energy. His fine generosity and eager readiness to give recognition to merit were qualities deeply appreciated by the members of that department.

Mr. Allin's contribution to knowledge in his special and allied fields has been extensive as testified by his numerous books, pamphlets, and magazine articles.

Natural ability which had been subjected to rigorous training had produced in him a keenness of mind which, with analytical powers of unusually high order and a broad grasp of economic laws and governmental problems could throw a flood of light upon questions which he discussed. The clarity and felicity of his language has been the envy of his admirers.

The University deeply mourns in him the loss of one of its most inspiring teachers and accomplished scholars—chivalrous and generous, unassuming and loyal.

Frederick Leonard Washburn, 1860-1927—

Mr. Washburn, born at Brookline, Massachusetts, was graduated from Harvard University in 1882. He later earned the M.A. degree at the same institution.

In 1887 he was elected to an instructorship in zoology at the University of Michigan, a position which he held for two years. In 1889 he was made professor of zoology at the Oregon Agricultural Experiment Station. In 1899 he became also state entomologist for Oregon.

Mr. Washburn came to the University of Minnesota in 1902 as chief of the Division of Entomology in the University Department of Agriculture. This position carried with it the rank of professor of entomology in

the College of Agriculture. He was also made entomologist of the Minnesota Agricultural Experiment Station and ex officio state entomologist. This latter position he held until 1918. He resigned from the University and Experiment Station at the close of the year 1925-26 to engage in private research and to complete collections of certain classes of insects in which he was intensely interested. He was a frequent contributor to scientific journals and was the author of numerous bulletins and reports. He made two trips to the South Sea Islands in the interest of science and at the time of his death was engaged in the preparation of a monograph report on the insect life of that region.

Mr. Washburn was a cultured and genial gentleman whose courtesy and graciousness made him many friends. He was deeply interested in his chosen line and during his incumbency at the University greatly expanded the research work in economic entomology. He was esteemed by his associates and colleagues and by all the students who came to know him well.

George G. Eitel—

The Board of Regents adopted the following memorial to the late Dr. George G. Eitel:

Dr. Eitel was a friend of the University, a friend of education, a friend of all the people. This in a sentence sums up a career devoted to medical practice from the social point of view. Coming up from the ranks of the common people, securing by his will and foresight a good medical education here and abroad, serving as a surgeon all classes of people without primary thought of reward, organizing and conducting a hospital without claiming the usual exemption from taxation, serving his professional brethren no matter what their status, (as when he helped secure the pardon of a physician convicted of grave crime and cared for him in his own hospital until he died), working for the welfare of the state by advocating eugenic legislation and freely giving his professional service in carrying out the present statute, founding an endowment in the University to assist needy medical students and for medical research, helping always any worthy cause and any needy person, he well deserved the eulogy of one of his friends: "He was a comprehensive lover of mankind."

Benjamin Franklin Nelson—

The Board of Regents placed in its minutes the following memorial to the late Benjamin Franklin Nelson, former president of the Board of Regents:

Since the January meeting of this Board Minneapolis has suffered the loss of three of its public spirited citizens. One of these is Mr. Benjamin Franklin Nelson who became a Regent in 1905, and was for some years President of the Board.

Mr. Nelson was born in Greenup County, Kentucky, in 1843. His parents emigrated from Maryland. The family were in moderate circumstances. Educational opportunities were limited. While still a youth,

owing to his father's ill health, Benjamin contributed to the family support. At the age of seventeen he cut logs and rafted them down the Ohio. At nineteen he enlisted in the Confederate Army and served in the Cavalry under Generals Morgan, Forrest, and Wheeler. Near the close of the war he was taken prisoner and confined at Camp Douglas near Chicago.

After a short return to Kentucky at the close of the war, he came to St. Anthony in 1865 where he got a job in the woods and in driving logs down the river in the spring. He was a large framed, powerful man and a natural leader among men. His next step was to take contracts to haul logs, and then we find him with a small mill, manufacturing shingles, the beginning of the large business producing roof coverings of all kinds, shapes and composition, which at his death was his outstanding monument.

For many years he was a leading manufacturer of lumber and print paper in the Northwest. He dealt in timber lands, some of which later enriched him with their mineral wealth after the timber was cut off. He was active in civic enterprises. He accepted positions of trust on educational, church, and financial boards. He reared and educated a family, destined to worthily perpetuate the name.

In addition to his public service as a Regent, Mr. Nelson served as a member of the first Minneapolis Board of Park Commissioners; as a member of the School Board; as a member of the Trustees of Hamline University; as a Director and President of the State Agricultural Society; as a member and President of the Board of Managers of the State Prison; and as a Director of leading financial and insurance institutions.

In the death of Benjamin Franklin Nelson the community has suffered the loss of one of the pioneer upbuilders of the City and State.

It is with deep and sincere regret that this Board memorializes the passing of one who was always a friend and supporter of the University.

Resolved, that these sentiments be spread upon the records of the Board and a copy sent to the bereaved family.

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

John R. DuPriest, professor and head of Department of Mechanical Engineering

B.S., 1901, Virginia Polytechnic Institute; M.E., 1912, M.M.E., 1913, Cornell University. Instructor at Cornell University 1911-13; at University of Wisconsin, 1913-15; professor at University of Idaho 1915-17; professor at Rensselaer Polytechnic Institute 1917-20; professor at Oregon State College 1921-27.

Herbert Heaton, professor of history

B.A., 1911, M.A., 1912, D.Litt, 1921, University of Leeds; M.Com., 1914, University of Birmingham. Lecturer in Commerce at Birmingham University (England), 1912-14; lecturer in history and economics at University of Tasmania, Australia, 1914-16; lecturer in economics and director of tutorial classes at University of Adelaide, Australia,

- 1917-25; professor of economics and political science and head of department at Queen's University, Kingston, Ontario, Canada, 1925-27.
- Harvey S. Hoshour, professor of law
 B.A., 1910, Gettysburg College; LL.B., 1914, University of Minnesota. Instructor in Greek and English at Gettysburg Academy, 1910-11; instructor in English and history at Augsburg Academy, 1911-14; practiced law at Duluth, Minnesota, 1914-17 and 1919-27; first lieutenant U. S. Army, 1917-19; associate counsel, Bureau of War Risk Insurance, Washington, D.C., April to August, 1919.
- Izaak M. Kolthoff, professor of analytical chemistry
 "Apotheker," 1914, M.S., 1914, Ph.D., 1918, University of Utrecht. For several years conservator of pharmaceutical laboratory at University of Utrecht, Holland.
- Arnold W. Lahee, professor in School of Business Administration
 B.A., 1911, M.A., 1912, Harvard University. Assistant, University of Vermont, 1912-13; acting professor Carnegie Institute of Technology, 1914-15; instructor Amos Tuck School at Dartmouth College, January to June, 1922. Research economist National Bank of Commerce, New York; National Industrial Conference Board; head of Department of Foreign Trade Extension, Mechanics and Metals National Bank of New York; Foreign Trade Advisers Office, U.S. Department; War Trade Board; New York Bureau of Municipal Research.
- Arthur W. Marget, associate professor in School of Business Administration
 B.A., 1920, M.A., 1921, Ph.D., 1927, Harvard University. Frederick Sheldon Prize Fellow for travel and study in Europe, 1920-21; Henry Lee Memorial Fellow in economics, Harvard University, 1922-23; assistant in economics, instructor in economics, and tutor in Division of History, Government, and Economics at Harvard University, 1923-27.
- Chloe Owings, director of Social Hygiene Bureau with rank of associate professor
 B.A., 1910, Knox College; M.A., 1911, Washington University; diploma from St. Louis School of Social Economy, 1911; certificate from Chicago School of Civics and Philanthropy, 1910; Docteur de Lettres, University of Paris, 1923. Social service work with Charity Organization Society of New York and the Associated Charities of Poughkeepsie; lecturer at Vassar College; appointed assistant secretary of New York State Conference of Charities and Corrections for 1916. In October, 1916, associated with American Relief Clearing House in France and worked in French military hospitals and the American Red Cross until the signing of the armistice; after the armistice Liaison Office at American Embassy in Paris. Upon return to the United States attached to the staff of the American Social Hygiene Association.

Leo G. Rigler, roentgenologist and associate professor, University Hospital

B.S., 1917, M.D., 1920, University of Minnesota. Studied in various clinics in Stockholm, Germany, and Vienna, 1926-27. Teaching fellow, University of Minnesota, 1921-23; assistant, from March 1, 1923 to 1926-27; special graduate school fellow from September 1, 1926 to July 1, 1927.

Frederick C. Wagner, associate professor in School of Business Administration

B.S., 1914, Northwestern University; M.A., 1917, Columbia University. Taught at University of Chicago, 1921-23; University of South Dakota, 1923-27. Educational work at T. S. Martin Company of Sioux City, Iowa. Conducted a course in Foreman Training at John Morrell Packing Plant at Sioux Falls, South Dakota. Five years experience with Brown Hoisting Machinery Company of Cleveland, Ohio, and U.S. Steel Company of Gary, Indiana. Four years in community welfare work in steel districts of Buffalo and Gary. Assistant secretary of Board of Trade at Hoboken, New Jersey; secretary of Chamber of Commerce at Greenwich, Connecticut.

Robert A. Wardle, associate professor of entomology

B.S., 1912, M.S., 1914, Victoria University of Manchester, England. Assistant lecturer in zoology, Royal College of Science in London, 1912-13; lecturer, University of Manchester, England, 1913-14; active service in British Expeditionary Forces, 1914-19; lecturer, University of Manchester, England, 1919 to date. On leave for 1927-28. May-December, 1925, spent in cotton growing investigations in Anglo-Egyptian Sudan.

Malcolm M. Willey, associate professor of sociology

B.A., 1920, Clark College; M.A., 1921, Ph.D., 1926, Columbia University. Attended New School for Social Research, 1920-21. Instructor, Dartmouth College, 1923-24; assistant professor, 1924-27; member of summer staff of School of Citizenship and Public Affairs Syracuse University, 1926 and 1927; reporter on Worcester *Massachusetts Telegram*, 1919-20; on staff of various country newspapers.

Herman C. Beyle, assistant professor of political science

B.A., 1912, Des Moines College; M.A., 1916, Ph.D., 1926, University of Chicago. Fellow in department of political science, University of Chicago, 1914-16; professor of social sciences Fargo College, North Dakota, 1916-17 and first semester of 1917-18; in U.S. Army February 5, 1918, to November 30, 1918; acting assistant professor at Oberlin College, second semester of 1918-19; assistant professor at Denison University, 1919-20, associate professor, 1920-21; associate professor at DePauw University, 1921-24; instructor at the University of Chicago and secretary to chairman of Social Science Research Committee, 1926-27.

Bryng Bryngelson, assistant professor in Department of Speech
 B.A., 1916, Carleton College; M.A., 1926, University of Iowa. Instructor at Belfield North Dakota High School, 1916-17; at Fosston, Minnesota, 1917-18; at Carleton College, 1918-19; at Hanover College, 1922-24; at University of Iowa, 1924-26, and at the University of Wisconsin, 1926-27.

George Burr, assistant professor of botany
 B.A., 1916, Hendrix College; M.A., 1920, University of Arkansas; Ph.D., 1923, University of Minnesota. Principal at Crossett, Arkansas, High School, 1917; taught chemistry, physics, and botany at Kentucky Wesleyan College; chief feed and fertilizer inspector for state of Arkansas, 1919; research assistant, University of California, 1923-27; research assistant, University of Minnesota, 1921-23.

John N. D. Bush, assistant professor of English
 B.A., 1920; M.A., 1921, University of Toronto; Ph.D., 1923, Harvard University. Fellow at University of Toronto, 1920-21; instructor and tutor at Harvard University and Radcliffe College, 1924-27; Sheldon Fellow of Harvard for travel and research abroad, 1923-24.

Ellett Morrison deBerry, mental hygienist and assistant professor of preventive medicine and public health

B.A., 1920, M.D., 1922, University of Texas. General internship Ancon Hospital, C.Z., Panama, 1922-23; psychiatric internship, St. Elizabeth's Hospital in Washington, D.C.; junior medical officer at same hospital; chief of female service at Sheppard and Enoch Pratt Hospital in Baltimore; psychiatrist at Baltimore County Children's Aid Society Clinic; fellow, National Committee for Mental Hygiene.

Reuel Fenstermacher, assistant professor of veterinary medicine
 D.V.M., 1917, University of Ohio. Employed in Bureau of Animal Industry, 1917-18; with U.S. Army, 1918-19; field veterinarian, Minnesota Livestock Sanitary Board, 1919-23; assistant secretary, Minnesota Livestock Sanitary Board beginning in 1923.

Louis E. Heilig, assistant professor in School of Mines and Metallurgy

B.S., 1914, E.M., 1915, University of Minnesota. Engineer, Richards Mather Company, 1915-16; mining engineer Belgian Congo, 1916-18; U.S. Army 124th Engineers, 1918-19; instructor, University of Minnesota, 1921-23; Minnesota State Tax Commission, 1923-27.

Chester A. Hughes, assistant professor of civil engineering
 B.A.Sc., 1920, M.A.Sc., 1922, University of Toronto. Demonstrator and instructor at University of Toronto, 1920-27; teacher of applied mechanics for evening classes at Central Technical School, Toronto, 1920-21 and 1924-25; engineer, Plan Examination Branch, City Hall, Toronto; engineer for Canadian Concrete, Limited and the Toronto Brick Company.

- Robert S. Livingston, assistant professor in School of Chemistry
B.S., 1922, M.S., 1923, Ph.D., 1925, University of California. Teaching fellow in chemistry, University of California, 1923-24 and 1924-25; traveling fellow from University of California to University of Copenhagen, 1925-26; instructor at University of California, 1926-27.
- David MacMillan, assistant professor of physical education and athletics
B.S., 1922, University of Idaho; graduate of Savage School of Physical Education. Instructor at New Rochelle High School, 1916-17; Stuyvesant High School, 1917-19; New Brunswick High School, 1919-20; University of Idaho, 1920-27.
- Reginald C. Sherwood, assistant professor of agricultural bio-chemistry
B.S., 1914, M.S., 1916, Ph.G., 1919, South Dakota State College; Ph.D., 1925, University of Minnesota. Assistant chemist at South Dakota State College, 1914-19; analyst, food, drug, and water laboratory, Montana State Board of Health, 1919-21; analyst and assistant professor, Montana State College, 1920-21; instructor, University of Minnesota, 1921-23; director Minnesota State Testing Mill, July, 1924, to date.
- Fred W. Rankin, assistant professor, Mayo Foundation
B.A., 1905, Davidson College; M.D., 1909, University of Maryland; M.A., 1915, St. John's College. Fellow in surgery, Mayo Foundation, 1916-17 and 1919-22; professor of surgery, University of Louisville, 1922-23; private practice in Baltimore, Maryland, 1912-17, and Lexington, Kentucky, 1923-26; consulting surgeon, Mayo Clinic, 1926-27.
- Louis W. Rees, assistant professor of forestry
B.S., 1923, New York State College of Forestry. Assistant instructor at New York State College of Forestry, 1923-27; summers of 1924, 1925, and 1926 spent working up data on Indian timbers; summer of 1927 collected weather and soil data at New York Ranger School at Wanakena, New York.
- William Robinson, assistant professor of entomology and economic zoology
B.S., 1918, University of Toronto; M.S., 1924, University of Kansas; Ph.D., 1926, University of Minnesota. Research work with Dominion of Canada Entomological branch, 1918-23; Caleb Dorr Fellow, University of Minnesota, 1924-25; assistant, University of Minnesota, 1925-27.
- Miles A. Tinker, assistant professor of psychology
B.A., 1921, M.A., 1922, Clark University; Ph.D., 1927, Stanford University. Teaching assistant in psychology at Clark University, 1921-23; at Stanford University, 1925-27; acting instructor in education at Stanford University, winter and summer quarters of 1926; acting assistant professor of education at Stanford University, summer quarter of 1927.

Joseph A. Wise, assistant professor of structural engineering
B.S., 1921, University of Minnesota. Draftsman, Mare Island Navy Yard; junior drainage engineer, U.S. Department of Agriculture; instructor, University of Minnesota, 1923-25; Lt. Engineers Corps, U.S. Navy, 1925-27.

Harold K. Wilson, assistant professor of farm management, agronomy, and plant genetics

B.S., 1924, Iowa State College; M.S., 1925, Ph.D., 1927, University of Illinois. Instructor at Iowa State Teachers College, summers of 1925 and 1926; student assistant at University of Illinois, 1925-26.

Theodore C. Blegen, professorial lecturer in history

B.A., 1912, M.A., 1915, Ph.D., 1925, University of Minnesota. Instructor Milwaukee, Wisconsin, high school; assistant superintendent of Minnesota State Historical Society.

Herbert E. Chamberlain, professorial lecturer in College of Education and Medical School

B.A., 1916, Albion College; M.D., 1921, Harvard University; certificate from Royal Victoria Hospital of Montreal. Studied in London and Paris 1926. On staff of Bloomingdale Hospital, New York, 1922-25; Vanderbilt Clinic of Department of Psychiatry of Columbia University, 1923-25; National Committee Mental Hygiene New York on Texas Survey staff, 1924; on Vermont Survey as director, 1927.

Promotions.—From associate professor to professor: Fred L. Adair, L. J. Brueckner, Benjamin J. Clawson, George E. Fahr, Donald Ferguson, Samuel Kroesch, H. Bruce Price, Martin B. Ruud, Roland S. Vaile, J. H. Van Vleck, Carl W. Waldron; from assistant professor to professor: H. L. McClintock; from assistant professor to associate professor: Moses Barron, Lillian Cohen, Oscar Cooperman, Edwin L. Gardner, Carl A. Herrick, C. M. Jansky, James A. Johnson, H. C. H. Kernkamp, Raymond E. Kirk, Harold Kumm, George A. Maney, Burton J. Robertson, Joseph Valasek, Warren C. Waite, E. J. Working, Charles B. Wright, (Mayo Foundation) G. E. Brown, H. C. Bumpus, V. C. Hunt, J. C. Masson, J. deJ. Pemberton, W. A. Plummer, F. A. Willius; from instructor to assistant professor: John S. Abbott, Ira S. Allison, Hervey H. Barber, Tobias L. Birnberg, Albert G. Black, G. B. Bodman, Edith Boyd, H. E. Brewbaker, J. W. Buchta, Eula B. Butzerin, Clarence Cason, Francis Dunning, Ralph Dwan, Ambert B. Hall, Erling Hansen, Richard Hartshorne, Ronald M. Hazen, A. C. Hildreth, Harold C. Hillman, Budd A. Holt, Roy M. Jernall, H. DeWitt Lees, Alex S. Levens,

Shirley P. Miller, W. J. Miller, Morris N. Nathanson, Earl A. Nelson, John F. Noble, William A. O'Brien, Abe Pepinsky, Stanley H. Perry, H. A. Pflughoeft, William H. Richards, Lawrence F. Richdorf, Ella J. Rose, Harold Russell, T. G. Stitts, William W. Swanson, Faith Thompson, Harold F. Wahlquist, Owen H. Wangensteen, William S. Williams, Mildred Ziegler, (Mayo Foundation) J. L. Bollman, H. M. Connor, J. B. Doyle, C. H. Greene, S. W. Harrington, G. M. Higgins, H. L. Parker, P. P. Vinson, W. Walters, H. P. Wagener.

Leaves of absence granted during the year.—J. W. Beach, professor of English, for 1927-28, without salary on account of illness; R. G. Blakey, professor in School of Business Administration, for 1927-28 without salary to study and prepare report on certain problems in taxation for Bureau of Economic Research in Washington; F. Stuart Chapin, professor of sociology, for spring quarter of 1927-28 for two-thirds time without salary to organize and establish a journal of social science; Leonard V. Koos, professor of secondary education, for spring quarter of 1927-28 without salary to make a study of secondary education in state of California; August C. Krey, professor of history, for half time without salary from March 16 to June 15, 1928, to continue study of teaching history and social sciences by Carnegie Corporation; Morris B. Lambie, professor and chief of Municipal Reference Bureau, sabbatical furlough for 1927-28 to continue studies and research work in problems of public administration in the United States and England; J. Anna Norris, professor of physical education for women, sabbatical furlough for 1927-28 for study and travel; Andrew A. Stomberg, professor of Scandinavian languages, sabbatical furlough for 1927-28 for study in Sweden; David F. Swenson, professor of philosophy, with salary for remainder of fall quarter beginning October 19, 1927, on account of illness; George E. Fahr, associate professor of medicine, sabbatical furlough for 1927-28 for study abroad; Rodney B. Harvey, associate professor of plant pathology and botany, sabbatical furlough from August 1, 1927, to July 31, 1928, to accept a Guggenheim fellowship; Howard C. H. Kernkamp, associate professor of veterinary medicine, sabbatical furlough from October 1, 1927, to September 30, 1928; William Lindsay, associate professor of music, sabbatical furlough for spring quarter

of 1927-28 for study in London, Paris, and Berlin; George C. Priester, associate professor of mathematics and mechanics, sabbatical furlough for 1927-28 to study for Doctor's degree at University of Michigan; Lloyd H. Reyerson, associate professor of chemistry, sabbatical furlough for 1927-28 for study abroad as a Guggenheim fellow; E. H. Sirich, associate professor of Romance languages, sabbatical furlough for 1927-28 for travel in Spain and France; Marion L. Vannier, associate professor and director of School of Nursing, from August 20 to September 19, 1927, without salary for travel in California, and a sabbatical furlough from June 1 to September 30, 1928, for travel in Europe; John J. Willaman, associate professor of agricultural biochemistry, sabbatical furlough from October 1, 1927, to September 30, 1928, for experimental work abroad; Lewis F. Garey, assistant professor of farm management, agronomy, and plant genetics, sabbatical furlough from October 1, 1927, to July 1, 1928, to work for Doctor's degree at Cornell University; Ronald Hazen, assistant professor of mechanical engineering without salary for 1927-28 to accept a position with Wright Aircraft Company at Dayton, Ohio; Rewey Belle Inglis, assistant professor in College of Education, sabbatical furlough for 1927-28; Julian G. Leach, assistant professor of plant pathology and botany, sabbatical furlough from August 16, 1927, to August 15, 1928, for study abroad; Harold Macy, assistant professor of dairy husbandry, sabbatical furlough for 1927-28 to work for Doctor's degree at Iowa State College; Katherine McFarland, assistant professor of home economics, from July 11 to September 20, 1927, without salary; Landon A. Sarver, assistant professor in School of Chemistry, sabbatical furlough for 1927-28 for study and research in France; George M. Stephenson, assistant professor of history, sabbatical furlough for 1927-28 to do research work in Sweden on history of Swedish immigration to the United States; Lucy A. Studley, assistant professor of home economics, sabbatical furlough for 1927-28 for study; Hall B. White, assistant professor of agricultural engineering, sabbatical furlough from March 21 to June 21, 1928, for research work at University of Wisconsin.

GIFTS RECEIVED BY THE UNIVERSITY DURING
THE YEAR 1927-28

GIFTS

THE LAURA SPELMAN ROCKEFELLER MEMORIAL GIFT

In 1925 the Laura Spelman Rockefeller Memorial appropriated to the University for the maintenance of the Institute of Child Welfare \$49,000 for each of the five years in the period beginning July 1, 1925, and ending on June 30, 1930. In addition to this amount \$5,000 was provided at that time for the initial equipment of the institute. On March 7, 1928, after the institute had been in operation less than three years, the memorial supplemented its original gift by providing additional funds for the institute amounting to \$567,000. The resolutions passed by the Laura Spelman Rockefeller Memorial were as follows:

Resolved, that the sum of \$270,000, or so much thereof as No. 908 may be necessary, be, and it hereby is, appropriated to the University of Minnesota for work in child study and parent education, for the period beginning July 1, 1928 and ending June 30, 1931; payments in accordance with this resolution to be made as follows: \$90,000 in each of the three years in the period beginning July 1, 1928 and ending June 30, 1931. Any part of this appropriation unexpended as of June 30, 1931 shall revert to the Memorial and be lapsed.

Resolved further, that the sum of \$240,000, or so much No. 909 thereof as may be necessary, be, and it hereby is, appropriated to the University of Minnesota for work in child study and parent education, for the period beginning July 1, 1931 and ending June 30, 1934; payments in accordance with this resolution to be made as follows: \$90,000 in the year beginning July 1, 1931 and ending June 30, 1932; \$80,000 in the year beginning July 1, 1932 and ending June 30, 1933; \$70,000 in the year beginning July 1, 1933 and ending June 30, 1934. Any part of this appropriation unexpended as of June 30, 1934 shall revert to the Memorial and be lapsed.

Resolved, that the sum of \$95,000, or so much thereof as may No. 933 be necessary, be, and it hereby is, appropriated to the University of Minnesota for work in child study and parent education for the period beginning July 1, 1934, and ending June 30, 1936; payments in accordance with this resolution to be made as follows: \$50,000 in the year beginning July 1, 1934, and ending June 30, 1935, and \$45,000 in the year beginning July 1, 1935 and ending June 30, 1936. Any part of this appropriation unexpended as of June 30, 1936 shall revert to the Memorial and be lapsed.

Resolved, that the sum of \$60,000, or so much thereof as may No. 934 be necessary, be, and it hereby is, appropriated to the University of Minnesota for work in child study and parent education for the period beginning July 1, 1936, and ending June 30, 1938; payments in accordance with this resolution to be made as follows: \$30,000 in each of the two years in the period beginning July 1, 1936 and ending June 30, 1938. Any part of this appropriation unexpended as of June 30, 1938, shall revert to the Memorial and be lapsed.

On July 5, 1928, the Laura Spelman Rockefeller Memorial further supplemented its support of the Institute of Child Welfare by giving to the University \$50,000 for the purchase of stock in the Parents' Publishing Association, Incorporated, the income from said stock to be applied to the maintenance of research in child welfare. The resolution passed at that time by the memorial was as follows:

Resolved, that the sum of \$50,000 be, and it hereby is, appropriated to the University of Minnesota for the purchase of stock in the Parents' Publishing Association, Inc., the income of said stock to be applied to the maintenance of research in child welfare.

THE MRS. UELAND MEMORIAL FUND COMMITTEE GIFT

On June 1, 1928, the Mrs. Ueland Memorial Fund Committee gave to the University a ten-thousand-dollar fellowship endowment to be known as the Clara Ueland Fellowship for the purpose of aiding a recent woman graduate in a year's graduate study of the problems of government and citizenship. The letter of gift was as follows:

June 1, 1928

*President L. D. Coffman,
University of Minnesota,
Minneapolis, Minnesota.*

DEAR PRESIDENT COFFMAN:

In behalf of friends and admirers of the late Mrs. Andreas Ueland we are writing to offer to the Regents of the University a certain sum of money (not less than ten thousand dollars) which they request shall be accepted as a fellowship endowment to bear the name, the Clara Ueland Fellowship.

It is the wish of the donors that if it is accepted, the endowment shall be invested and the interest therefrom be granted annually to some recent woman graduate for the purpose of aiding her in a year's graduate study of problems of government and citizenship.

For several reasons it seems peculiarly fitting that Mrs. Ueland's name should be perpetuated at the State University to prepare a young woman

for leadership in the service of good government. Though her sympathies were so broad and her great talents so freely spent in the service of the state and its citizens in every direction, that almost no conceivable memorial could be inappropriate, yet it is recognized that it was for education, for good government, and for broadening the opportunities of women, that Mrs. Ueland through more than two score years most steadfastly labored and achieved.

If it meets with the approval of the Board of Regents, it would be gratifying to us if announcement of this endowment were made at Commencement time and withheld until then.

Very sincerely yours,

LOUISE C. ZONNE

(Mrs. A. E. Zonne)

MARGUERITE M. WELLS

THE MRS. FLORENCE A. BREWSTER GIFT

On August 24, 1927, Mrs. Florence A. Brewster gave to the University an annual scholarship of \$250 in the College of Agriculture to be known as the Henry Webb Brewster Scholarship and two annual scholarships of \$125 each in the Central School of Agriculture to be known as the Florence A. Brewster Scholarships. The letter of gift follows:

August 24, 1927

Dean W. C. Coffey
University Farm
St. Paul, Minnesota

DEAR DEAN COFFEY:

My husband, the late Dr. Henry Webb Brewster, was a member of the faculty and assistant principal of the School of Agriculture at the time of its organization. Between 1893 and 1900 he was principal of the School. During that time I served as librarian and matron having care especially of the dormitory life of the students and looking after their health and personal welfare. We both became firm believers in this type of education for young people and our interest continued unabated until his death.

As evidence of my further interest and in his memory, I desire to endow certain scholarships in the Central School of Agriculture and in the College of Agriculture of the University of Minnesota. It is my purpose during the remainder of my life to provide the revenue from investments aggregating \$10,000 to maintain these scholarships and eventually to provide a permanent endowment fund under the direction of the Board of Regents for the support of these scholarships.

It is my desire to offer one scholarship of \$250, annually in the College of Agriculture to be known as the Henry Webb Brewster Scholarship, and two scholarships of \$125 each annually in the Central School of Agriculture, to be known as the Florence A. Brewster Scholarships. In

case the time should come when the income from the gift should not be needed for either or both of the purposes mentioned, the Board may at its discretion invest the income in some manner advantageous to students in agriculture.

These scholarships shall be offered subject to the following conditions. The beneficiaries must be young men or young women who are and must continue of exemplary moral character and of temperate and industrious habits. They must be such as by trial and examination shall evince and maintain a habit and aptitude for study and improvement. Any student who shall fail to come or cease to be within the above conditions shall forfeit all claim to the benefits of these scholarships. It is my preference that such scholarships be awarded to needy students who would otherwise be unable to gain educational advantages.

Completion of the arrangements for the establishment of these scholarships will be made upon receipt of an indication of acceptance by the Board of Regents.

Yours truly,
MRS. FLORENCE A. BREWSTER.

THE EMILY SPEECHLEY WHITACRE GIFT

On August 23, 1927, Mrs. Emily Speechley Whitacre, of St. Paul, Minnesota, offered to the University \$2,000 for the establishment of the Mary Dwight Akers Loan Fund for Forestry Students. On October 3, 1927, at the time of the actual establishment of the loan Mrs. Whitacre increased the gift to \$4,000.

THE JAMES FORD BELL GIFTS

On December 22, 1927, Dr. Thomas S. Roberts, director of the University of Minnesota Zoological Museum, reported completion of "The Pipestone Prairie Group." This group shows an association of mammals, birds, and plants of the high rolling prairie of western Minnesota. The background painting was made by Mr. R. Bruce Horsfall, of Washington. The group was made possible by a gift from Mr. James Ford Bell, of Minneapolis, of \$2,954.28, representing the actual cost of the group aside from the salary of Mr. W. J. Breckenridge, the museum preparator, who constructed the group.

Mr. James Ford Bell also gave to the University in December, 1927, \$250, \$100 of which was spent for option to purchase the Granby Stone Image, and \$150 for a trip by Professor A. E. Jenks to museums in Chicago, Washington, and elsewhere, to investigate similar artifacts.

THE CITIZENS' AID SOCIETY GIFT

On March 14, 1928, the Citizens' Aid Society, Mrs. George Chase Christian, president, gave to the University \$5,000 for the landscaping and general beautification of the area in the rear of the University Hospital.

OTHER GIFTS

During 1927-28 the student loan funds were increased in amount by \$1,764.43. Additional scholarships were added to an amount of \$4,683; fellowships, \$13,664.32; and prizes, \$990. Other gifts for research, experiment, and miscellaneous purposes totaled in excess of \$36,000. Many books were added to the library and departments received many valuable pieces of equipment. A detailed list of gifts follows:

CASH GIFTS—LOAN FUNDS, SCHOLARSHIPS, FELLOWSHIPS, AND PRIZES

- \$ 250.00 Annually from Mrs. Florence Brewster, of Chicago, for the Henry Webb Brewster Scholarship in the College of Agriculture.
- 250.00 Annually from Mrs. Florence Brewster, of Chicago, for the Florence A. Brewster scholarships of \$125 each.
- 4,000.00 From Mrs. Emily Speechley Whitacre, of St. Paul, for the Mary Dwight Akers Loan Fund for Forestry Students.
- 150.00 From an anonymous donor for a loan to a deserving student.
- 2,400.00 From Chas. Pfizer and Co. Inc., New York City, for the Chas. Pfizer and Co. Inc. Cirate Fellowship.
- 150.00 For a scholarship to a senior law student privately bestowed by the Law Alumni Association.
- 150.00 For a scholarship to a senior law student privately bestowed by an anonymous donor.
- 150.00 For a scholarship to a senior law student privately bestowed by the Minnesota Law Review.
- 195.33 From the city council, this being the balance on hand from the sale of tickets for the dinner tendered the football team of the University in 1926, to be used to aid needy students.
- 146.00 From Fergus Falls Commercial Club for a scholarship at the Northwest School and Experiment Station, Crookston, Minn.
- 138.00 From Fergus Falls Commercial Club for a scholarship at the Northwest School and Experiment Station, Crookston, Minn. (subject to bank closing).
- 225.00 From the Argosy Club of Minneapolis, Minnesota, for the Argosy Club Loan Fund.
- 100.00 From Theodore Roosevelt for a prize to the student who best exemplifies the idea of "Idealism in Student Government."

- \$ 50.00 From the Phi Beta Chapter of Mu Phi Epsilon Sorority for the Phi Beta Chapter of Mu Phi Epsilon Scholarship for junior and senior women music students.
- 40.00 From Thorpe Bros. for a first prize of \$25 and a second prize of \$15 for a competition in architectural design.
- 25.00 Annually from the Alumnae Association of the School of Nursing for the establishment of the Louise M. Powell Prize.
- 50.00 From Minnesota Society of Internal Medicine for a prize (school year 1928-29) for the most meritorious thesis upon a subject in physiology.
- 175.00 From the Grand Army of the Republic and the Women's Relief Corps for scholarships.
- 10,000.00 From the Mrs. Ueland Memorial Fund Committee for a fellowship endowment to be known as the Clara Ueland Fellowship.

Additions to Previous Gifts

- \$ 244.00 Coffman Educational Research Foundation
- 250.00 Class of 1890 Fellowship
- 175.00 Pillsbury Debate Prize fund
- 105.00 Minnesota State Pharmaceutical Association Scholarship
- 1,050.00 St. Paul College Women's Club scholarships
- 150.00 Faculty Women's Club, Students' Section Scholarship fund
- 100.00 P. E. O. Scholarship
- 500.00 George H. Partridge Scholarship fund
- 100.00 Mrs. Elbert L. Carpenter Scholarship fund
- 100.00 Mrs. George C. Christian Scholarship fund
- 25.00 Colbert Ralph Bennett Prize in Imaginative Writing
- 100.00 Mrs. George P. Douglas Scholarship fund
- 100.00 American Legion Auxiliary Scholarship fund
- 75.00 Alpha Zeta Scholarship fund
- 50.00 Home Economics Association Scholarship fund
- 200.00 Agriculture Faculty Women's Club Scholarship fund
- 40.00 American Society of Civil Engineers, Northwest Section, Prize fund
- 100.00 E. J. Stilwell Journalism Scholarship
- 75.00 American Institute of Architects Prize
- 50.00 Phi Upsilon Omicron Scholarship fund
- 100.00 Peavey Prize fund
- 50.00 School of Architecture Faculty Prize fund
- 25.00 Wm. A. French Interior Decoration Prize fund
- 30.00 *Minnesota Quarterly* Prize fund
- 100.00 Advertising Club of Minneapolis Scholarship fund
- 350.00 Law Faculty Scholarship fund from an anonymous donor
- 15.00 Phi Lambda Upsilon Prize fund
- 10.00 Alpha Chi Sigma Twin City Alumni Association Prize in Chemistry fund
- 194.10 Dad's Day loan fund
- 1,500.00 Cloquet Wood Fibre Fellowship

- \$ 1,200.00 Phosphate Manufacturers' Fellowship from the Victor Chemical Works
- 200.00 Merchants National Bank of St. Paul student loan fund
- 800.00 Cosmopolitan loan fund
- 920.00 A. P. Streitmann Fellowship from the Biscuit and Cracker Manufacturers' Association of Chicago
- 200.00 H. P. Linner prizes in Swedish
- 3,094.32 Miller Teaching Fellowship
- 1,800.00 Niagara Sprayer Company Fellowship
- 500.00 Pokegama Tuberculosis Fellowship
- 1,600.00 Fleischmann Fellowship
- 400.00 Waconia Sorghum Mills Fellowship
- 30.00 Magney and Tusler Prizes in Architecture
- 250.00 Pullman Company Scholarship

RESEARCH AND EXPERIMENTS

- \$ 1,400.00 From the Eli Lilly Company for an investigation of the physiological effects of ethylene on organisms and on enzyme action.
- 1,750.00 From the American Society of Heating and Ventilating for co-operative research project in heating and ventilating.
- 1,041.50 From Minneapolis Tribune for research in the School of Business Administration.

Additions to Previous Gifts

- \$ 3,001.00 Minnesota Cannery Association research fund
- 500.00 St. Louis County experiment fund
- 1,400.00 Minnesota Valley Canning Company research fund
- 5,000.00 Minnesota Committee on the Relation of Electricity to Agriculture research fund
- 1,000.00 {From Flax-li-num Insulating Co.
- 1,000.00 {From the Minnesota and Ontario Paper Company
- 1,000.00 {From the Wood Conversion Company
- For the Heat Insulating fund (formerly Flax-li-num fund) for the continuance of research in this field.
- 1,000.00 {From Fromm Bros., Nieman & Co.
- 100.00 {From Hercules Fur Farms
- 100.00 {From Triple X Silver Fox Farms, Inc.
- For fox breeders distemper and research (medicine)
- 2,000.00 Flaxseed development fund
- 250.00 United States Golf Association, Greens Section, experiment fund
- 10,625.00 Bureau of Social Hygiene research fund
- 2,500.00 Performance Scale Standardization Project research fund
- 540.00 American Institute of Meat Packers fund

Miscellaneous Funds

- \$ 2,954.28 From Mr. James Ford Bell, being the cost of the Pipestone Prairie group in the Museum of Natural History

THE PRESIDENT'S REPORT

- \$ 250.00 From Mr. James Ford Bell, to be used in connection with the purchase of the Granby Stone Image and for a trip by Professor A. E. Jenks to museums in Chicago, Washington, and elsewhere to investigate similar artifacts.
- 5,000.00 From the Citizens' Aid Society for landscaping in the rear of the University Hospital.
- 25.00 From R. W. Anderson, of St. Paul, to be used in connection with non-certified cases at the University Hospital.
- 200.00 From Dr. Arthur S. Hamilton, professor of medicine, in part payment of the salary of a teaching fellow in the Department of Nervous and Mental Diseases.
- 100.00 Monthly from E. Floyd Allen, of Minneapolis, for the development of the work of the *Directory of the Museum of Natural History*.
- 1,130.00 { From the Northern States Power Company
- 225.00 { From the Minnesota Power and Light Company of Duluth
- 225.00 { From the Interstate Power Company of Albert Lea
For construction of an electric line to Room 106, Home Economics Buildings.
- 567,000.00 Additional from Laura Spelman Rockefeller Foundation for financing an extension of the work of the Institute of Child Welfare from 1930 to 1938.
40,000 shares of common stock from E. W. Davis patents. Income to be used for mining research.

BOOKS

10,092 gifts from 2,641 donors.

\$50 from the Grand Lodge of the Independent Order B'nai B'rith for the purchase of books for the library.

The John James Audubon four-volume double elephant folio edition of the *Birds of America* from Mrs. W. O. Winston and family for the Museum of Natural History.

Six technical volumes from John Edwin, Minneapolis, for the School of Mines and Metallurgy.

MISCELLANEOUS

Drawings and sketches prepared by Maurice Locker from Mrs. Fink, Emanuel Cohen Center, for the School of Architecture.

A gauge with double dials from Dr. F. F. Nord for the Division of Agricultural Biochemistry.

The following gifts for the College of Engineering and Architecture:

One standard Pierce Governor display outfit from Pierce Governor Company of Anderson, Indiana.

One 26x24-inch cabinet with 21-inch visible heater from Crane Company, of La Crosse, Wisconsin.

Two oil filters, one strainer assembly, and two gasoline strainers from A. C. Spark Plug Company of Flint, Michigan.

One steering gear chuck from Hannum Manufacturing Company of Milwaukee, Wisconsin.

One cross-sectional carburetor mounted on nickel plate stand from Stromberg Motor Devices Company of Chicago, Illinois.

One Dodge carburetor sectional model from Detroit Lubricator Company of Detroit, Michigan.

One Penberthy steam injector, $\frac{1}{2}$ inch, from Penberthy Injector Company of Detroit, Michigan.

One Cadillac chassis from the Cadillac Motor Car Company of Detroit, Michigan.

The late Professor George D. Shepardson's historical collection relating to electric lighting from Mrs. George D. Shepardson for the Electrical Engineering museum.

One multiple choice apparatus, one Deal feed testing machine and apparatus and stop watches from the National Research Council for the Department of Psychology.

A six-cylinder Willys-Knight automobile engine, sectionalized for display purposes, from the Willys-Knight, Incorporated, Toledo, Ohio, for the College of Engineering and Architecture.

The following gifts for the Mechanical Engineering Department:

Sixteen complete welding sets from the Smith Welding Equipment Corporation, Minneapolis, Minnesota.

One acetylene generator from the Carbic Manufacturing Company, Duluth, Minnesota.

Two hundred pounds of assorted welding rods from the Lincoln Electric Company, Cleveland, Ohio.

A quantity of thermit from the Thermit Corporation.

A fifty-line automatic telephone switchboard from the Northwestern Bell Telephone Company for the Department of Electrical Engineering.

A complete welding and cutting outfit from the Oxweld Acetylene Company of Chicago for the College of Engineering and Architecture.

A number of rolls for the Duo-Art from the Metropolitan Music Company for the Department of Music.

A new Golden Jubilee Model dictating machine from the Ediphone for use in the office of the president.

Two new type desk telephones for manual and dial operation from the Northwestern Bell Telephone Company for use in the College of Engineering and Architecture.

A sextant, formerly the property of Captain George Destin, from George L. Wilson for use in the Department of Astronomy.

The following gifts for the College of Dentistry:

One X-ray machine from the Ritter Dental Manufacturing Company, Inc., Rochester, New York.

One Wadsworth Articulator from the S. S. White Dental Manufacturing Co., Minneapolis, Minnesota.

One CDX X-ray unit from the Victor X-Ray Corporation, Chicago, Illinois.

One Castle sterilizer and one Patterson operating light from the M. F. Patterson Dental Supply Co., Minneapolis, Minnesota.

One Trubyte articulator from the Dentists' Supply Company of New York City.

One set of operative instruments from the Cleveland Dental Manufacturing Company, Cleveland, Ohio.

A portrait, to be placed in Zoology Building, of Professor Emeritus Henry F. Nachtrieb from Mrs. Dwight E. Minnich.

A frame for the portrait of Professor Emeritus Henry F. Nachtrieb from Mrs. Simon Kruse.

Mathematical papers from the estate of Gottfried Lenzer.

An automatic screw machine for use in the Department of Mechanical Engineering from the Western Electric Company, Chicago, Illinois.

CONCLUSION

The detailed reports of the registrar and of the comptroller and the most significant portions of the reports submitted by the deans of the colleges and the heads of other university administrative units are submitted to complete this report.

Respectfully submitted,

L. D. COFFMAN, *President*

REPORT OF THE REGISTRAR

REPORT OF THE REGISTRAR

STATISTICS OF REGISTRATION

Collegiate students.—Table I records by class and by school or college the attendance of students of collegiate grade in all courses leading to degrees. All of the students in this group with the exception of those listed as special or unclassified, have been required to present for admission evidence of at least the completion of a four-year high school course or its equivalent. The special and unclassified students, although admitted to the University primarily on the basis of maturity and experience, are enrolled in regular collegiate classes and constitute a part of the collegiate teaching load. A comparison of the net grand totals for 1927-28 with those of 1926-27 shows a loss of 102 students, or 0.6 per cent.

Such a comparison of the net grand totals, however, may be seriously misleading. It should be noted that for the three quarters of the academic year there is an increase of 320 students, or 2.6 per cent. For the Summer Session, considered separately, there was an increase of 186, or 4.3 per cent, for the first term and an increase of 231, or 12.9 per cent, for the second term. A comparison of these figures gives a more accurate representation of the relative loads for 1927-28 and 1926-27 than the figures for the net grand totals of collegiate registration. The apparent loss in enrolment in the latter comparison is due to the fact that in the Summer Session of 1927 there were 729 more registrants than in 1926 who were also registered during the following academic year. The net grand total of collegiate enrolment is, therefore, decreased by that number although there was actually an increase in load throughout the year.

A comparison of totals for the individual colleges shows gains in enrolment in every unit except the College of Dentistry, the College of Pharmacy, and the College of Education. The largest increases are in the School of Nursing (44.0 per cent); the Graduate School (12.9 per cent); and the College of Engineering and Architecture (7.4 per cent). The School of Mines and Metallurgy for the first time in several years shows a marked

increase in enrolment of 37 students, or 52.9 per cent; the freshman class having increased from 19 to 50.

The loss in enrolment in the College of Dentistry from a total of 368 to 281 is due to the adoption of the "two-three" plan requiring two years of preprofessional work in place of the one year required heretofore and shortening the period of residence in the College of Dentistry from four to three years. The actual number of students pursuing dentistry has not been materially affected.

In the College of Pharmacy the loss in enrolment appears to be due principally to the abandonment of the three-year degree course which became effective in September, 1927. The College of Pharmacy now offers only the degree bachelor of science in pharmacy for the completion of a four-year course.

The decreased enrolment in the College of Education seems to reflect the changing demand for teachers rather than any change in institutional policy as in the case of Dentistry and Pharmacy.

Collegiate enrolment by quarters.—Table II records the totals of Table I by quarters showing the peak load of attendance in the fall quarter. Aside from the Summer Session the enrolment in the spring quarter is the lightest. There is a difference of approximately 10 per cent between the enrolments for the spring and fall quarters. In comparison with the corresponding figures for 1926-27 the gains in enrolment by quarters are: summer, 10.5 per cent; fall, 4.4 per cent; winter 5.4 per cent; and spring, 4.1 per cent.

Subcollegiate students.—Table III shows the enrolment in departments which do not require high school graduation for admission. The schools of agriculture show no material change. There are slight losses at Crookston and Morris each of which had a small gain a year ago. These losses are offset by an increase at the Central School. The North Central School at Grand Rapids at the close of its second year shows a gain from 18 to 31 students. The freshman class for 1927-28, however, has only one more student than the initial class of 1926-27.

The agricultural short courses show a net gain of 150 registrants, or 10.0 per cent, over 1926-27 and the total for the entire group of subcollegiate students is 138, or 4.7 per cent higher than for the previous year.

Extension students.—Table IV shows three types of students: those who pursue courses in classrooms under the personal direction of instructors throughout the semester or year; those who are in attendance for limited periods of less than a semester (short courses); and those whose work is conducted through the medium of written directions sent by mail. For the first time this year a detailed account of the second group has been included in the annual report. Heretofore the first two groups, General Extension and short courses, have been counted together under the head of "General Extension." For a proper comparison, therefore, with the enrolment for 1926-27, the apparent loss of 295 in General Extension should be subtracted from the apparent gain of 482 in short courses making a net gain of 187, or 3.0 per cent, for the two groups of instruction.

The Correspondence Study enrolment shows a gain of 286, or 13.1 per cent. The increase for the entire division of extension students is 431 individuals, or 5.2 per cent.

Summary.—Table V summarizes the totals of Tables I, III, and IV. The net grand total of 25,895 represents the number of individuals, men and women, who during the past year received instruction at the hands of members of the university teaching staff.

Table VI summarizes the registration for the year by administrative units. Agriculture, in this table, includes the College of Agriculture, Forestry, and Home Economics, the four schools of agriculture, and the agricultural short courses. Medicine includes courses for nurses and medical technicians in addition to those in the regular medical course. Dentistry includes the course for dental hygienists and Education includes the University High School. The term "resident student" as used in this table is meant to distinguish those who were in the day classes in the university buildings from those who attended evening classes in the Extension Division or who took work by correspondence.

Degrees conferred.—Table VII compares the number of degrees granted during the year 1927-28 with the number granted in 1926-27. The total number has increased 8.4 per cent.

Geographical distribution.—Table VIII enumerates the preparatory schools from which freshman students came to the various colleges and schools during the year 1927-28 and shows

the number received from each school. The proportionate attendance from Minnesota schools again increased slightly from 86.4 per cent for 1926-27 to 87.9 per cent for 1927-28. For 1925-26 the corresponding figure was 85.6. The per cent that came from schools outside the Twin Cities was 44.1 as compared with 51.6 per cent in 1926-27 and 53.4 per cent in 1925-26. Thirty-one states were represented in the freshman class this year to which 292 students were admitted from states other than Minnesota. Ten were received from foreign countries.

Advanced standing.—Table IX shows the extent of the migration of students from other colleges and universities to the University of Minnesota. During the past year 907 students have come from 187 different institutions. The University has no basis for estimating the number of students who have left Minnesota to attend institutions in other states.

Table X shows the geographical origin of the entire group of collegiate students, exclusive of the Summer Session, by Minnesota counties, by states, and by foreign countries. This table includes the students of the freshman class counted in Table VIII. Every county in the state of Minnesota is represented, the smallest number, four students, coming from Lake of the Woods and Mahnomen counties. The proportion of students from Hennepin and Ramsey counties (53.6 per cent) was practically the same as for 1926-27 (53.7 per cent) in spite of an increase in the freshman class from the Twin City high schools. Forty-five states, including the District of Columbia, sent students to the University of Minnesota this year. The largest groups from outside of Minnesota came from Wisconsin, North Dakota, South Dakota, Iowa, and Montana in the order named. The total number of students from states outside of Minnesota was 1,739; 198 students were enrolled from 27 foreign countries, including the Philippine Islands.

Classification of non-residents.—In accordance with the general principle that non-residents of Minnesota who attend the University should pay a larger share of the cost of their education than residents and taxpayers of the state the Board of Regents at their meeting on May 9, 1928, modified the regulations with reference to the classification of resident and non-resident students to read as follows: "All students under the

age of twenty-one shall be considered to be domiciled where their parents or legal guardians are domiciled. All students who are and for six months prior to the date of registration have been domiciled in Minnesota shall pay resident fees, provided, however, that a student's domicile is not to be considered as alterable simply by declaration of intention or by the fact of his presence in the state while attending an educational institution."

The effect of the rule as modified is to provide, as has been done in some of the neighboring state institutions, that a student who enters the University of Minnesota as a non-resident of the state will retain that classification and pay non-resident fees throughout his course of study. At the same time the regulation makes provision for a reclassification in those cases where the student's domicile can be shown to be established in Minnesota independent of his presence in the state as a student.

Respectfully submitted,

RODNEY M. WEST, *Registrar*

TABLE I. COLLEGIATE STUDENTS BY SCHOOLS AND COLLEGES

1926-28

COLLEGE OR SCHOOL	YEAR 1926-27			YEAR 1927-28			GAIN	LOSS
	Men	Women	Total	Men	Women	Total		
SCIENCE, LITERATURE, AND THE ARTS:								
Seniors	170	173	343	150	168	318	.....	25
Juniors	213	181	394	194	169	363	.....	31
Sophomores	1,187	717	1,904	1,426	820	2,246	342	.....
Freshmen	1,245	759	2,004	1,106	830	1,936	.....	68
Unclassed	168	155	323	69	94	163	.....	160
Totals	2,983	1,985	4,968	2,945	2,081	5,026	58	.....
ENGINEERING AND ARCHITECTURE:								
Seniors	193	3	196	187	4	191	.....	5
Juniors	228	5	233	220	8	228	.....	5
Sophomores	364	3	367	430	4	434	67	.....
Freshmen	475	6	481	525	4	529	48	.....
Unclassed	21	7	28	13	7	20	.....	8
Totals	1,281	24	1,305	1,375	27	1,402	97	.....
AGRICULTURE, FORESTRY, AND HOME ECONOMICS:								
Seniors	61	82	143	65	88	153	10	.....
Juniors	68	75	143	73	97	170	27	.....
Sophomores	134	145	279	140	124	264	.....	15
Freshmen	133	88	221	126	116	242	21	.....
Unclassed	18	13	31	18	17	35	4	.....
Totals	414	403	817	422	442	864	47	.....
LAW:								
Third year	82	2	84	90	1	91	7	.....
Second year	97	2	99	83	2	85	.....	14
First year	99	2	101	109	1	110	9	.....
Unclassed	2	1	3	10	.....	10	7	.....
Totals	280	7	287	292	4	296	9	.....
MEDICAL:								
Internes	140	9	149	137	12	149	.....	.....
Seniors	84	12	96	97	6	103	7	.....
Juniors	83	3	86	102	3	105	19	.....
Sophomores	144	5	149	131	7	138	.....	11
Freshmen	105	5	110	108	6	114	4	.....
Unclassed	49	2	51	75	4	79	28	.....
Special	5	.....	5	.....	.....	.....	.....	5
Totals	610	36	646	650	38	688	42	.....
NURSING:								
Third year .....	.....	.....	.....	.....	129	129	.....	.....
Second year .....	.....	.....	.....	.....	138	138	.....	.....
First year .....	.....	.....	.....	.....	253	253	.....	.....
Public Health .....	.....	.....	.....	.....	44	44	.....	.....
Affiliates .....	.....	.....	.....	.....	91	91	.....	.....
Totals .....	.....	455	455	.....	655	655	200	.....

TABLE I—Continued

COLLEGE OR SCHOOL	YEAR 1926-27			YEAR 1927-28			GAIN	Loss
	Men	Women	Total	Men	Women	Total		
MEDICAL TECHNICIANS:	1	14	15	....	15	15	....	....
DENTISTRY:								
Seniors	104	.....	104	91	.....	91	.....	13
Juniors	75	.....	75	78	.....	78	3	....
Sophomores	81	0	81	87	2	89	8	....
Freshmen	106	2	108	22	1	23	....	95
Totals	366	2	368	278	3	281	....	87
DENTAL HYGIENISTS:								
Second year .....	.....	.....	.....	.....	17	17	....	....
First year .....	.....	.....	.....	.....	31	31	....	....
Unclassed .....	.....	.....	.....	.....	2	2	....	....
Totals .....	.....	43	43	.....	50	50	7	....
MINES AND METALLURGY:								
Seniors	15	.....	15	14	.....	14	....	1
Juniors	15	.....	15	18	.....	18	3	....
Sophomores	21	.....	21	25	.....	25	4	....
Freshmen	19	.....	19	50	.....	50	31	....
Totals	70	.....	70	107	.....	107	37	....
PHARMACY:								
Fourth year .....	.....	.....	.....	25	10	35	35	....
Third year	35	11	46	44	6	50	4	....
Second year	50	7	57	9	1	10	....	47
First year	66	7	73	7	0	7	....	66
Unclassed	4	.....	4	49	0	49	45	....
Totals	155	25	180	134	17	151	....	29
CHEMISTRY:								
Seniors	21	2	23	31	1	32	9	....
Juniors	38	1	39	52	0	52	13	....
Sophomores	72	2	74	70	1	71	....	3
Freshmen	81	1	82	85	4	89	7	....
Unclassed	8	.....	8	7	0	7	....	1
Totals	220	6	226	245	6	251	25	....
EDUCATION:								
Seniors	97	424	521	113	448	561	40	....
Juniors	111	453	564	110	415	525	....	39
Sophomores	38	111	149	25	101	126	....	23
Freshmen	47	117	164	48	133	181	17	....
Unclassed	93	420	513	91	234	325	....	188
Totals	386	1,525	1,911	387	1,331	1,718	....	193
BUSINESS ADMINISTRATION:								
Seniors	119	19	138	153	26	179	41	....
Juniors	150	28	178	179	22	201	23	....
Unclassed	8	1	9	14	3	17	8	....
Totals	277	48	325	346	51	397	72	....

THE PRESIDENT'S REPORT

TABLE I—Continued

COLLEGE OR SCHOOL	YEAR 1926-27			YEAR 1927-28			GAIN	LOSS
	Men	Women	Total	Men	Women	Total		
GRADUATES	889	346	1,235	1,008	386	1,394	159	....
WAR SPECIALS	2	.....	2	.....	.....	.....	.....	2
Total academic year	7,934	4,919	12,853	8,189	5,106	13,295	442	....
Less duplicates...	289	332	621	382	361	743	122	....
Net total academic year	7,645	4,587	12,232	7,807	4,745	12,552	320	....
SUMMER SESSION:								
First term	1,977	2,385	4,362	1,901	2,647	4,548	186	....
Second term	1,022	758	1,780	1,057	954	2,011	231	....
Totals	2,999	3,143	6,142	2,958	3,601	6,559	417	....
Less duplicates...	889	328	1,217	756	644	1,400	183	....
Net total Summer Session	2,110	2,815	4,925	2,202	2,957	5,159	234	....
MAYO FOUNDATION (Graduate) summer quarter..	204	8	212	267	18	285	73	....
Net total summer enrolment	2,314	2,823	5,137	2,469	2,975	5,444	307	....
Grand totals (collegiate)	9,959	7,410	17,369	10,276	7,720	17,996	627	....
Less duplicates ...	970	446	1,416	1,279	866	2,145	729	....
Net grand totals (collegiate)	8,989	6,964	15,953	8,997	6,854	15,851	....	102

TABLE II. COLLEGIATE ENROLMENT BY QUARTERS, 1927-28

	MEN	WOMEN	TOTAL
Summer Session, 1927.....	2,469	2,975	5,444
Fall quarter	7,056	4,282	11,338
Winter quarter	6,895	4,057	10,952
Spring quarter	6,382	3,937	10,319
Total (individual) registrations.....	8,997	6,854	15,851

LEGISLATIVE STUDENTS, 1926-28

	YEAR 1927-28				GAIN	Loss
	Total	Men	Women	Total		
26-27						
5	107	99	19	118	11	....
2	122	73	27	100	....	22
3	109	87	28	115	6	....
1	163	142	48	190	27	....
06	501	401	122	523	22	....
16	52	34	23	57	5	....
16	85	49	18	67	....	18
17	129	98	25	123	....	6
7	12	5	14	19	7	....
76	278	186	80	266	....	12
8	22	21	11	32	10	....
84	300	207	91	298	....	2
24	65	42	25	67	2	....
37	102	48	29	77	....	25
43	131	112	35	147	16	....
104	298	202	89	291	....	7
22	53	17	23	40	....	13
126	351	219	112	331	....	20
....	....	13	....	13	13	....
....	18	14	....	14	....	4
....	....	4	....	4	4	....
....	18	31	....	31	13	....
136	260	135	135	270	10	....
452	1,430	993	460	1,453	23	....
0	0	2	0	2	2	....
452	1,430	991	460	1,451	21	....
4	14	9	1	10	....	4
(CROOKSTON) .....	....	25	....	25	25	....
Creamery operators' short course .....	....	63	....	63	63	....
Advanced creamery operators' short course ..	....	29	....	29	29	....

THE PRESIDENT'S REPORT

TABLE III—Continued

SCHOOL OR COURSE	YEAR 1926-27			YEAR 1927-28			GAIN	LOSS
	Men	Women	Total	Men	Women	Total		
Dairy school	107	.....	107	.....	.....	.....	.....	107
Farm women's week (Crookston) .....	.....	129	129	.....	112	112	.....	17
Farm women's week (Morris) .....	.....	152	152	.....	164	164	12	.....
Farmers' short course (Grand Rapids) .....	.....	.....	.....	124	31	155	155	.....
Fur breeders' short course .....	.....	.....	.....	71	6	77	77	.....
Home nursing short course .....	.....	92	92	.....	102	102	10	.....
Ice cream makers' short course .....	.....	.....	.....	18	.....	18	18	.....
Junior short course (Crookston)	142	88	230	140	113	253	23	.....
Junior short course (Grand Rapids) .....	.....	.....	.....	64	61	125	125	.....
Junior short course (Morris)	428	253	681	236	180	416	.....	265
Land valuation short course .....	.....	.....	.....	72	1	73	73	.....
Scout masters' short course	60	.....	60	47	.....	47	.....	13
Well drillers' short course	47	.....	47	.....	.....	.....	.....	47
Grand total short courses	794	718	1,512	898	771	1,669	157	.....
Less duplicates..	.....	.....	.....	7	.....	7	7	.....
Net total short courses	794	718	1,512	891	771	1,662	150	.....
Grand total schools and short courses	1,772	1,170	2,942	1,882	1,231	3,113	171	.....
Less duplicates ...	6	1	7	40	.....	40	33	.....
Net total, schools and short courses	1,766	1,169	2,935	1,842	1,231	3,073	138	.....

TABLE IV. EXTENSION STUDENTS, 1926-28

COURSE	YEAR 1926-27			YEAR 1927-28			GAIN	Loss
	Men	Women	Total	Men	Women	Total		
General Extension	3,171	3,147	6,318	2,916	3,107	6,023	....	295
Short courses:								
Dental:								
Crown and bridge work				1	.....	1	1	.....
Economics				26	3	29	29	.....
Orthodontia				20	1	21	21	.....
Prophylaxis for dental hygienists .....				.....	34	34	34	.....
Electric metermen				29	.....	29	29	.....
Embalmers:								
Embalmers				34	2	36	36	.....
Institute of funeral directors				24	.....	24	24	.....
Medical				35	1	36	35	1
Scout Leaders:								
Camp leadership				30	46	76	76	.....
Girl Scout leaders...				.....	33	33	33	.....
Boy Scout leaders...				50	.....	50	50	.....
Textiles:								
Dayton's				15	.....	15	15	.....
Laundrymen's				19	.....	19	19	.....
Montgomery Ward's. South St. Paul.....				57	8	65	65	.....
				.....	16	16	16	.....
Grand total short courses				340	144	484	484	.....
Less duplicates..				1	1	2	2	.....
Net total short courses				339	143	482	482	.....
Correspondence	1,048	1,136	2,184	1,146	1,324	2,470	286	.....
Grand total Extension	4,219	4,283	8,502	4,401	4,574	8,975	473	.....
Less duplicates .	65	78	143	70	115	185	42	.....
Net total Extension	4,154	4,205	8,359	4,331	4,459	8,790	431	.....

TABLE V. SUMMARY 1926-28

DIVISION	YEAR 1926-27			YEAR 1927-28			GAIN	Loss
	Men	Women	Total	Men	Women	Total		
Collegiate students	8,989	6,964	15,953	8,997	6,854	15,851	....	102
Subcollegiate students..	1,766	1,169	2,935	1,842	1,231	3,073	138	.....
Totals	10,755	8,133	18,888	10,839	8,085	18,924	36	.....
Less duplicates..	7	2	9	19	7	26	17	.....
Net totals	10,748	8,131	18,879	10,820	8,078	18,898	19	.....
Extension students	4,154	4,205	8,359	4,331	4,459	8,790	431	.....
Grand totals	14,902	12,336	27,238	15,151	12,537	27,688	450	.....
Less duplicates .	445	262	707	940	853	1,793	1,086	.....
Net grand totals.	14,457	12,074	26,531	14,211	11,684	25,895	....	636

TABLE VI. COMPARATIVE REGISTRATION FIGURES, 1926-28

COLLEGE OR SCHOOL	YEAR 1926-27			YEAR 1927-28			GAIN		Loss	
	Men	Women	Total	Men	Women	Total	Men	Women	Men	Women
Science, Literature, and the Arts.....	2,983	1,985	4,968	2,945	2,081	5,026	....	96	38	.....
Engineering and Architecture	1,281	24	1,305	1,375	27	1,402	94	3	....	.....
Agriculture (including short courses)	2,049	1,434	3,483	2,129	1,538	3,667	80	104	....	.....
Law	280	7	287	292	4	296	12	.....	....	3
Medicine (including Nursing and Med. Technicians)	611	505	1,116	650	708	1,358	39	203	....	.....
Dentistry (including Dental Hygienists)	366	45	411	278	53	331	....	8	88	.....
Mines and Metallurgy	70	.....	70	107	.....	107	37	.....	.....	.....
Pharmacy	155	25	180	134	17	151	....	.....	21	8
Chemistry	220	6	226	245	6	251	25	.....	.....	.....
Education (including University High School)	510	1,661	2,171	522	1,466	1,988	12	.....	....	195
Graduate	889	346	1,235	1,008	386	1,394	119	40	....	.....
Business Admin. ...	277	48	325	346	51	397	69	3	....	.....
War Specials	2	.....	2	.....	.....	.....	....	.....	2	.....
Summer Session, (net)	2,314	2,823	5,137	2,469	2,975	5,444	155	152	....	.....
Totals	12,007	8,909	20,916	12,500	9,312	21,812	493	403	....	.....
Less duplicates	1,259	778	2,037	1,680	1,234	2,914	421	456	....	.....
Net totals.....	10,748	8,131	18,879	10,820	8,078	18,898	72	.....	....	53
EXTENSION:										
General Extension	3,171	3,147	6,318	2,916	3,107	6,023	....	.....	255	40
Short courses .....	.....	.....	.....	339	143	482	339	143	....	.....
Correspondence	1,048	1,136	2,184	1,146	1,324	2,470	98	188	....	.....
Totals	4,219	4,283	8,502	4,401	4,574	8,975	182	291	....	.....
Less duplicates	65	78	143	70	115	185	5	37	....	.....
Net totals.....	4,154	4,205	8,359	4,331	4,459	8,790	177	254	....	.....
SUMMARY:										
Totals, resident students	10,748	8,131	18,879	10,820	8,078	18,898	72	.....	....	53
Totals, extension students	4,154	4,205	8,359	4,331	4,459	8,790	177	254	....	.....
Grand totals... ..	14,902	12,336	27,238	15,151	12,537	27,688	249	201	....	.....
Less duplicates	445	262	707	940	853	1,793	495	591	....	.....
Net grand totals	14,457	12,074	26,531	14,211	11,684	25,895	....	.....	246	390

TABLE VII. DEGREES CONFERRED, 1926-28

COLLEGES AND DEGREES	YEAR 1926-27			YEAR 1927-28		
	Men	Women	Total	Men	Women	Total
SCIENCE, LITERATURE, AND THE ARTS:						
B.A. <i>summa cum laude</i>.....	.....	2	2	2	.....	2
B.A. <i>magna cum laude</i>	2	2	4	4	3	7
B.A. <i>cum laude</i>	17	15	32	20	19	39
B.A.	142	130	172	128	119	247
B.A. (music) .....	.....	1	1	.....	.....	.....
B.S. (academic-medical)	101	11	112	56	8	64
B.S. (arts and nursing).....	5	.....	5	.....	12	12
B.S.	1	8	9	4	9	13
ENGINEERING AND ARCHITECTURE:						
B.S. in architectural engineering...	8	.....	8	1	.....	1
B.S. with distinction (civil engineering)	1	.....	1	.....	.....	.....
B.S. in civil engineering	48	.....	48	12	.....	12
B.S. with distinction (electrical engineering)	1	.....	1	.....	.....	.....
B.S. in electrical engineering.....	70	.....	70	6	.....	6
B.S. in mechanical engineering.....	31	.....	31	4	.....	4
B.S. with distinction (in architecture)	1	.....	1	.....	.....	.....
B.S. in architecture.....	12	.....	12	3	.....	3
B.S. in interior decoration.....	.....	2	2	.....	1	1
Bachelor of architectural engineering	.....	.....	.....	9	.....	9
Bachelor of civil engineering with distinction .....	.....	.....	.....	1	.....	1
Bachelor of civil engineering.....	.....	.....	.....	30	.....	30
Bachelor of electrical engineering...	.....	.....	.....	63	.....	63
Bachelor of mechanical engineering..	.....	.....	.....	30	.....	30
Bachelor of architecture.....	.....	.....	.....	9	.....	9
Bachelor of interior decoration.....	.....	.....	.....	.....	2	2
AGRICULTURE:						
B.S. with high distinction (agriculture) .....	.....	.....	.....	3	.....	3
B.S. with distinction (agriculture)..	3	.....	3	.....	.....	.....
B.S. in agriculture.....	19	.....	19	13	.....	13
B.S. with high distinction (agricultural science) .....	.....	.....	.....	1	.....	1
B.S. with distinction (agricultural science)	1	.....	1	.....	.....	.....
B.S. (agricultural science).....	.....	.....	.....	3	.....	3
B.S. with high distinction (forestry)	2	.....	2	.....	.....	.....
B.S. with distinction (forestry)....	1	.....	1	4	.....	4
B.S. (forestry)	22	.....	22	22	.....	22
B.S. with high distinction (home economics) .....	.....	.....	.....	.....	1	1
B.S. with distinction (home economics) .....	.....	.....	.....	.....	1	1
B.S. (home economics).....	.....	12	12	.....	19	19
AGRICULTURE AND EDUCATION:						
B.S. with high distinction (home economics) .....	.....	3	3	.....	1	1
B.S. with distinction (home economics) .....	.....	4	4	.....	2	2
B.S. (home economics) .....	.....	41	41	.....	32	32
B.S. (agriculture)	6	.....	6	7	1	8
LAW:						
LL.B.	79	1	80	88	1	89

TABLE VII—Continued

COLLEGES AND DEGREES	YEAR 1926-27			YEAR 1927-28		
	Men	Women	Total	Men	Women	Total
MEDICINE:						
M.D. with distinction.....	1		1	3		3
M.D.	97	5	102	98	11	109
M.B.	96	10	106	102	8	110
Graduate in nursing.....		56	56		99	99
DENTISTRY:						
D.D.S.	89		89	76		76
Graduate dental nurse.....		11	11			
Graduate dental hygienist.....					19	19
MINES AND METALLURGY:						
E.M.	7		7	4		4
E.M. in geology	5		5	3		3
Metallurgical engineer	3		3	7		7
PHARMACY:						
B.S. in pharmacy	5	3	8	6	3	9
Pharmaceutical chemist	24	5	29	22	6	28
CHEMISTRY:						
B.S. in chemistry.....	1		1	3		3
B.S. with distinction (chemical engineering)	2		2			
B.S. (chemical engineering).....	11		11	2		2
Bachelor of chemistry (with distinction)				1		1
Bachelor of chemistry				6		6
Bachelor of chemical engineering (with distinction)				1		1
Bachelor of chemical engineering.....				10		10
EDUCATION:						
B.S. with high distinction.....	2	4	6		7	7
B.S. with distinction.....	10	55	65	11	59	70
B.S.	50	251	301	83	301	384
BUSINESS ADMINISTRATION:						
B.S. in business.....	95	17	112	111	22	133
GRADUATE:						
M.A.	56	41	97	54	42	96
M.S.	35	3	38	40	13	53
C.E.	1		1			
E.E.				1		1
M.S. in chemical engineering.....	6		6	2		2
M.S. in civil engineering.....				2		2
M.S. in electrical engineering.....	2		2	5		5
M.S. in mechanical engineering.....	1		1			
M.S. in medicine	2	1	3	8		8
M.S. in dermatology.....				2		2
M.S. in ophthalmology.....	1		1	1		1
M.S. in ophthalmology and otolaryngology	1		1	1		1
M.S. in orthopedic surgery	1		1			
M.S. in pathology.....	1		1			
M.S. in surgery.....	10		10	10		10
M.S. in urology.....				2		2
Ph.D.	30	3	33	47	8	55
Ph.D. in surgery		1	1			
Totals	1,218	698	1,916	1,247	829	2,076

TABLE VIII—Continued

	Science, Literature, and the Arts	Agriculture	Engineering	Chemistry	Mines and Metallurgy	Dental Hygienists	Pharmacy	Nursing	Education	Total
Kenyon								1		1
Kerkhoven	5									5
Lake Crystal	1	2								3
Lakefield	2		1						1	4
Lake Park			2							2
Lakeville	1									1
Lamberton	1									1
Laporte								1		1
Le Roy			3							3
Le Sueur	2			1						3
Le Sueur Center			1	1						1
Lewiston		1	2							3
Lincoln			1							1
Lindstrom	1									1
Litchfield	5								2	7
Little Falls	2									2
Long Prairie	2							3		5
Luverne	6	2								8
Lyle								1		1
McGregor	1									1
Mable	2		1							3
Madelia	1	1	1							3
Madison	3	2							2	7
Mahnomen								2		2
Mahtomedi					1					1
Mankato	9	1	2	1				1	1	15
Mantorville	1									1
Maple Lake	2									2
Mapleton	1									1
Marietta						1				1
Marshall	2									2
Mazepa				2						2
Medford	1									1
Menahga		1							1	2
Milaca	1								1	2
Milan	1									1
Minneapolis										
Central	172	15	25	2	3	2	1		16	236
East	6			1				1	1	9
Edison	28	6	10			1		1	3	49
John Marshall	46	6	8	1	1	2		3	4	71
North	112	9	13	6		3		2	3	151
Roosevelt	26	4	7	3			1	2	2	45
South	45	5	7	3		3			4	67
University	23	3	6					1	1	34
Washburn	5									5
West	170	14	29	5	5				11	234
Minnesota	1							2		3
Minnesota Lake	1									1
Montevideo	6	2	1					1		10
Montgomery			1			1				2
Monticello	1	1								2
Montrose			1					1		2
Moorhead	2									1
Moose Lake	2		1							3
Mora	1									1
Morgan				1				1		1
Morristown										1
Mound	2									2
Mountain Iron	1			1					1	3
Mountain Lake	1									1
Nashauk								1		1
Nevis								1		1
New Richland	3								1	1
New Ulm	3	4	2		1			2		12
New York Mills	2	1							1	4
Nichols			1							1

TABLE VIII—Continued

	Science, Literature, and the Arts	Agriculture	Engineering	Chemistry	Mines and Metallurgy	Dental Hygienists	Pharmacy	Nursing	Education	Total
Nicollet	2									2
North Branch	1									1
Northfield		1	1							2
North St. Paul	4	1								5
Olivia	2	1	1							4
Ortonville	2		1	1						4
Osakis	4		1							5
Osseo	5									5
Owatonna	7	1	3	1			1	1	1	15
Park Rapids	2			5						7
Paynesville	1								1	2
Pelican Rapids		1								1
Perham	3		1					1		5
Pine City	5		1		1					7
Pine Island			1							1
Pine River			2							2
Pipestone	4									4
Plainview			1							1
Preston		1								1
Princeton	3									3
Rapidan		1	1							2
Raymond			1							1
Red Lake Falls	1									1
Red Wing	3		1					2		6
Redwood	1		1					1		3
Remer	1									1
Renville	1		2							3
Riverton		1								1
Rochester	1		1					1		4
Roseau	2		1					1		4
Ross								1		1
St. Charles	1			1						2
St. Clair				1						1
St. Cloud	16		2	1					3	22
St. James	1							2		3
St. Louis Park	2	2	1							5
St. Paul										
Central	116	8	18	1		1	1	4	8	157
Humboldt	19		2		1			1	2	25
Johnson	11	4	7	1						23
Mechanic Arts	36	5	14	4	3	1		2	4	69
St. Peter			2							2
Sacred Heart	1		1							2
Sandstone	1									1
Sauk Center			1							1
Sauk Rapids	1		1							1
Sebeke	2									2
Shakopee				1						1
Sherburn	1		1							2
Silver Lake		1			1		1			3
Slayton	2				1					3
Soudan									1	1
South St. Paul					1					1
Springfield	1		1							2
Spring Grove	1									1
Spring Valley	3	1	1	1	1					7
Staples	1							1		2
Stewart	1	1			1					3
Stillwater	23		4					2	1	30
Storden	1									1
Swanville	1									1
Tavlers Falls	1									1
Thief River Falls	3		1					1		5
Tracy	1								1	2
Truman	3									3
Two Harbors	2		2					2		6
Tyler	3	1	2							6

TABLE VIII—Continued

	Science, Literature, and the Arts	Agriculture	Engineering	Chemistry	Mines and Metallurgy	Dental Hygienists	Pharmacy	Nursing	Education	Total
Pennsylvania										
New Bloomfield ...	1									1
South Dakota										
Aberdeen	3									3
All Saints' School...								1		1
Arlington	3									3
Belle Fourche			1							1
Blunt	1									1
Britton			1							1
Dell Rapids		1								1
De Smet	1									1
Estelline	1									1
Florence	4									4
Frederick			2							2
Gettysburg	2		1							3
Groton			1							1
Hazel	1									1
Highmore			1							1
Howard		1								1
Huron	1									1
Ipswich	1									1
Java	1									1
Kidder										1
Lake Nordin	1							1		1
Lane		1								1
Langford	1									1
Lead	2									1
Lennox			1							3
Milbank										1
Miller	2						1			3
Mitchell	1				1					2
Parkstone	3		2							5
Pierre			1							1
Plankinton	1									1
Platte								1		1
Rapid City								1		1
Redfield									1	1
Salem	2							1		3
Selby			1							1
Sioux Falls	4		1					1		6
Sisseton	2									2
Veblen	1									1
Watertown	2									1
Webster	3							1	1	4
Wessington			1							3
Woonsocket	1									1
Tennessee										
Copperhill					1					1
Texas										
Fort Worth	1			1						2
Harrisburg	1									1
Pampa		2								2
West Virginia										
St. Peter's	1									1
Totals for U.S. except Minnesota.	165	14	56	2	4	1	2	33	15	292
FOREIGN COUNTRIES:										
Canada	1				1				1	3
China	1									1
Germany	2									2
Norway		1								1
Philippine Islands	2			1						3
Totals	6	1		1	1				1	10
Entered by examination	1		1							2
Grand Totals	1568	199	357	61	35	17	13	146	121	2517

TABLE IX. STUDENTS ADMITTED WITH ADVANCED STANDING

	Science Literature, and the Arts	Engineering & Architecture	Agriculture	Law	Medicine	Nursing	Dentistry	Dental Hygienists	Mines and Metallurgy	Pharmacy	Chemistry	Education	Business Admtn.	Total
MINNESOTA														
Augsburg College	5	2	..	..	..	..	..	..	..	..	..	..	..	7
Carleton College	38	0	3	4	2	..	..	..	..	..	..	..	2	55
Concordia College (Moorhead)	4	1	..	..	..	2	..	..	1	..	..	..	..	8
Concordia College (St. Paul)	1	..	..	..	..	..	..	..	..	..	..	..	..	1
Ely Junior College	2	2	..	..	..	..	..	..	..	..	..	..	..	7
Eveleth Junior College	5	3	..	1	..	2	1	..	..	1	..	..	..	21
Gustavus Adolphus	6	2	1	3	..	1	..	..	..	1	..	..	..	14
Hamline University	19	1	1	1	..	..	..	..	..	..	..	5	1	28
Hibbing Junior College	2	5	12	2	..	1	..	..	..	1	1	7	3	34
Itasca Junior College	1	..	..	1	..	..	..	..	1	..	..	..	..	3
Luther College (St. Paul)	1	..	..	..	..	..	..	..	..	..	..	..	..	1
Macalester College	22	..	3	1	3	..	..	..	..	1	3	5	1	39
North Central College (St. Clair)	1	..	..	..	..	..	..	..	..	..	..	..	..	1
Park Region Lutheran College (Fergus Falls)	..	..	..	1	..	..	..	..	..	..	..	..	..	1
Parker Junior College (Winnebago City)	..	..	1	..	..	..	..	..	..	..	..	..	..	1
Rochester Junior College	16	2	1	..	2	..	..	..	..	3	1	1	..	26
St. Benedict's College (St. Joseph)	1	..	..	..	..	1	..	..	..	..	..	1	..	3
St. Catherine's College	10	..	3	..	..	..	..	1	..	1	..	5	..	20
St. John's University (Collegeville)	2	..	1	2	2	..	..	..	..	..	1	..	..	8
St. Mary's College	1	..	..	..	..	..	1	..	..	..	..	..	..	2
St. Mary's Hall	3	..	..	..	..	..	..	..	..	..	..	..	..	3
St. Olaf College	22	5	3	3	6	..	..	..	..	1	2	8	2	52
St. Paul College of Law	..	..	..	1	..	..	..	..	..	..	..	..	..	1
St. Theresa (Winona)	3	..	1	..	..	..	..	..	..	..	..	2	..	6
St. Thomas College	16	5	1	4	5	..	..	..	..	..	4	..	4	39
State Teachers College (Bemidji)	..	..	..	..	..	2	..	..	..	..	..	3	..	5
State Teachers College (Duluth)	..	..	..	..	..	..	..	..	..	..	..	3	..	3
State Teachers College (Mankato)	1	..	1	..	..	..	..	..	..	..	..	13	..	14
State Teachers College (Moorhead)	..	1	..	..	..	..	..	..	..	..	..	4	..	5
State Teachers College (St. Cloud)	..	..	2	..	..	..	..	..	..	..	..	28	..	30
State Teachers College (Winona)	3	1	2	1	..	..	..	..	..	..	..	3	..	10
Virginia Junior College	3	3	1	1	1	..	..	..	..	..	..	10	..	19
Totals	188	39	37	26	21	9	2	1	2	9	12	108	13	467

TABLE IX—Continued

	Science Literature, and the Arts	Engineering & Architecture	Agriculture	Law	Medicine	Nursing	Dentistry	Dental Hygienists	Mines and Metallurgy	Pharmacy	Chemistry	Education	Business Admin.	Total
Wisconsin Mining School .....	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Wisconsin, University of	6	1	1	...	...	...	...	...	...	...	...	...	...	14
Wyoming, University of .....	...	...	...	...	1	...	...	...	...	...	...	5	...	1
Yale (Connecticut)	3	...	...	2	...	...	...	...	...	...	...	...	...	5
Yankton College (South Dakota)	2	...	1	...	...	...	...	...	...	...	...	...	...	3
Totals	205	43	33	27	15	5	7	...	2	4	5	76	4	426
FOREIGN COUNTRIES:														
Artium Examinations .....	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Calgary College (Canada) .....	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Hawaii, University of	1	...	...	...	...	...	...	...	...	...	...	...	...	1
Hohenheim College of Agriculture (Germany) ..	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Kristiansand (Norway)	1	...	...	...	...	...	...	...	...	...	...	...	...	1
Macdonald Institute (Canada) .....	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Manitoba, University of (Canada)	1	...	...	...	...	...	2	...	...	...	...	...	...	1
Neuching, University of (China) .....	...	1	...	...	...	...	1	...	...	...	...	...	1	4
Oslo, University of (Norway) .....	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Saskatchewan, University of (Canada) .....	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Swedish Matriculation Examinations .....	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Totals	3	2	2	...	...	...	6	...	...	...	...	...	1	14
Grand totals	396	84	72	53	36	14	15	1	4	13	17	184	18	907

TABLE X. GEOGRAPHICAL DISTRIBUTION OF UNIVERSITY STUDENTS OF COLLEGIATE GRADE (OTHER THAN SUMMER SESSION),
1927-28

	S., L., and A.	Eng. and Arch.	Agricul- ture	Law	Medi- cine	Med. Tech- nicians	Nurs- ing	Den- tistry	Dental Hy- gienists	Mines and Met.	Phar- macy	Chem- istry	Edu- cation	Busi- ness Adm.	Gradu- ate	Dupli- cates	Total
MINNESOTA:																	
Aitkin	4	3	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	9
Anoka	15	2	2	1	2	.....	.....	.....	.....	1	.....	.....	2	.....	4	1	28
Becker	12	9	2	1	1	.....	6	1	.....	1	1	1	10	.....	2	3	44
Beltrami	8	1	2	1	2	.....	6	1	.....	.....	1	1	4	1	1	2	27
Benton	.....	2	1	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	2	2	5
Big Stone	7	3	5	1	2	.....	.....	1	.....	3	.....	2	5	1	1	3	28
Blue Earth	35	11	7	5	8	1	4	2	.....	1	.....	4	17	1	4	4	96
Brown	10	7	11	2	3	.....	3	2	.....	2	5	1	12	.....	3	2	59
Carlton	16	8	3	2	4	.....	6	4	.....	.....	.....	1	5	3	1	3	50
Carver	24	8	3	.....	1	.....	3	2	.....	.....	2	.....	8	2	1	4	50
Cass	5	6	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	2	1	.....	16
Chippewa	21	2	8	1	3	.....	3	1	.....	.....	1	.....	5	3	3	3	48
Chisago	18	2	5	.....	.....	.....	2	.....	.....	.....	4	1	4	1	4	2	39
Clay	7	2	2	1	.....	.....	2	.....	1	2	.....	.....	5	2	3	2	25
Clearwater	2	2	3	.....	.....	.....	2	.....	.....	.....	2	.....	1	.....	1	1	12
Cook	6	1	1	1	.....	.....	1	.....	.....	.....	.....	.....	2	.....	1	2	11
Cottonwood	14	5	4	1	1	.....	.....	1	.....	.....	.....	1	2	1	7	4	33
Crow Wing	22	6	9	1	9	.....	7	4	.....	1	.....	.....	10	1	6	5	71
Dakota	11	4	7	1	4	.....	1	1	.....	1	.....	3	9	3	7	4	48
Dodge	5	2	3	3	1	.....	.....	1	.....	.....	1	.....	4	.....	.....	1	19
Douglas	17	3	6	2	2	.....	3	6	.....	.....	1	.....	11	2	5	5	53
Faribault	9	7	6	.....	1	.....	2	2	.....	.....	1	.....	7	1	2	3	35
Fillmore	21	9	6	.....	4	.....	4	2	.....	2	4	2	11	3	6	3	71
Freeborn	26	7	6	1	3	.....	4	1	.....	2	1	.....	6	4	3	4	60
Goodhue	21	8	13	3	3	.....	6	5	.....	2	.....	2	10	1	8	5	77
Grant	11	.....	3	.....	2	.....	2	1	.....	.....	.....	2	4	.....	3	3	25
Hennepin	2348	570	266	106	209	4	178	84	27	36	54	92	720	143	358	254	4941
Houston	6	.....	2	.....	1	.....	4	2	.....	.....	.....	3	1	2	2	1	16
Hubbard	7	.....	4	.....	.....	.....	1	1	.....	1	2	5	2	2	2	2	28
Isanti	17	2	3	1	2	.....	1	.....	.....	.....	.....	.....	2	1	1	2	28
Itasca	6	7	3	2	5	.....	9	3	.....	.....	.....	.....	16	4	4	2	57
Jackson	12	5	1	.....	.....	.....	2	.....	.....	.....	.....	1	2	.....	2	3	22
Kanabec	9	.....	.....	.....	1	.....	1	.....	.....	.....	.....	1	3	1	.....	2	14
Kandivohi	21	0	3	4	1	.....	5	3	.....	.....	.....	.....	8	3	.....	3	54

TABLE X—Continued

	S., L., and A.	Eng. and Arch.	Agric- cul- ture	Law	Medi- cine	Med. Tech- nicians	Nurs- ing	Den- tistry	Dental Hy- gienists	Mines and Met.	Phar- macy	Chem- istry	Edu- cation	Busi- ness Adm.	Gradu- ate	Dupli- cates	Total
Kittson	2	1	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	6	1	11
Koochiching	6	5	1	.....	1	.....	2	.....	.....	1	1	.....	4	1	.....	1	21
Lac qui Parle	13	4	3	1	4	.....	2	1	1	3	.....	6	1	1	2	.....	39
Lake	8	6	3	1	1	.....	3	3	.....	3	1	2	4	2	3	.....	34
Lake of the Woods	1	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	4
Le Sueur	13	6	7	2	3	.....	.....	.....	1	1	1	6	2	.....	4	.....	38
Lincoln	12	5	5	1	1	.....	3	.....	.....	1	1	4	2	2	2	6	31
Lyon	18	3	4	2	2	.....	8	2	.....	1	.....	1	9	5	2	6	51
McLeod	18	5	6	.....	3	.....	5	5	.....	2	3	.....	17	1	7	2	70
Mahnomen	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
Marshall	10	1	1	.....	1	.....	3	.....	.....	.....	.....	.....	2	.....	.....	1	17
Martin	23	7	8	2	9	.....	12	1	.....	1	.....	2	6	3	5	4	75
Meeker	21	4	6	1	4	.....	2	.....	.....	.....	.....	7	1	4	6	.....	44
Mille Lacs	11	1	6	.....	.....	.....	2	1	.....	.....	.....	1	8	.....	2	1	31
Morrison	23	1	1	1	4	.....	1	4	.....	.....	.....	1	10	1	4	4	47
Mower	14	13	7	.....	4	1	6	2	.....	.....	.....	4	9	4	6	7	63
Murray	7	.....	.....	3	.....	.....	.....	1	.....	1	1	.....	2	.....	1	.....	16
Nicollet	5	5	1	.....	2	.....	.....	1	.....	.....	.....	1	1	1	4	2	19
Nobles	13	5	.....	.....	3	.....	.....	1	.....	.....	.....	.....	5	.....	1	.....	28
Norman	2	5	2	.....	2	.....	1	.....	.....	.....	.....	.....	2	1	.....	1	14
Olmsted	30	5	3	3	12	1	4	4	.....	.....	3	3	8	1	20	7	90
Otter Tail	43	7	11	5	4	1	3	2	.....	1	.....	2	12	5	4	3	97
Pennington	10	3	5	.....	.....	.....	1	.....	.....	.....	.....	.....	3	1	.....	3	20
Pine	14	6	2	1	2	.....	4	.....	.....	1	.....	.....	7	.....	3	1	39
Pipestone	9	5	1	3	1	.....	.....	1	.....	.....	.....	3	3	1	.....	1	26
Polk	19	5	6	3	3	.....	3	2	.....	.....	.....	1	6	3	2	7	46
Pope	5	4	5	.....	5	.....	1	.....	1	.....	2	.....	4	1	1	.....	29
Ramsey	793	211	121	53	115	1	33	38	13	11	21	47	203	54	181	105	1790
Red Lake	2	.....	1	.....	2	.....	3	1	.....	1	.....	.....	8	.....	.....	.....	11
Redwood	10	3	3	2	4	.....	8	.....	.....	.....	1	.....	8	3	2	5	34
Renville	21	4	11	.....	7	.....	8	2	.....	2	1	1	8	1	2	4	64
Rice	28	.....	7	4	8	.....	6	1	1	.....	1	1	6	1	13	6	72
Rock	11	.....	1	.....	.....	.....	7	.....	.....	.....	.....	.....	4	.....	.....	.....	17
Roseau	5	8	1	.....	.....	.....	7	1	.....	.....	.....	.....	5	1	.....	1	27
St. Louis	164	81	44	25	40	2	34	12	2	8	7	12	123	22	25	42	559
Scott	10	2	10	1	1	.....	2	5	.....	1	.....	2	5	1	.....	3	37
Sherburne	6	2	5	.....	.....	.....	3	.....	.....	.....	.....	.....	1	2	1	1	19
Sibley	15	5	.....	.....	3	.....	8	3	.....	1	2	.....	6	2	.....	1	44

TABLE X—Continued

	S., L., and A.	Eng. and Arch.	Agricu- ture	Law	Medi- cine	Med. Tech- nicians	Nurs- ing	Den- tistry	Dental Hy- gienists	Mines and Met.	Pharm- acy	Chem- istry	Edu- cation	Busi- ness Adm.	Gradu- ate	Duplic- ates	Total
Stearns	46	11	6	4	10	....	8	1	....	....	1	2	20	1	11	3	118
Steele	20	10	10	1	4	....	2	1	....	1	1	2	4	1	2	4	55
Stevens	7	1	6	....	....	....	1	....	....	....	....	2	2	....	....	1	16
Swift	25	2	3	....	....	....	....	3	....	1	....	2	9	....	1	2	44
Todd	22	8	1	....	1	....	6	....	....	....	....	3	5	....	2	3	48
Traverse	5	2	4	1	1	....	2	....	....	....	1	....	1	....	1	....	14
Wabasha	5	3	2	....	5	....	....	3	....	....	1	2	5	3	....	....	29
Wadena	10	....	1	....	....	....	2	....	....	....	....	3	3	....	2	1	17
Waseca	14	4	4	....	4	1	....	1	....	1	....	6	2	1	2	....	38
Washington	39	18	10	2	7	....	8	1	....	3	....	2	7	6	3	6	100
Watonwan	8	5	7	2	3	....	7	2	....	1	....	....	5	4	3	7	40
Wilkin	3	5	1	....	....	....	1	1	....	....	....	....	2	....	....	....	13
Winona	33	20	8	4	4	....	2	3	....	1	....	5	11	3	7	9	92
Wright	31	7	9	2	1	....	4	1	....	....	2	2	17	6	3	9	76
Yellow Medicine	9	1	5	2	5	....	6	1	....	....	2	2	7	1	....	3	38
Totals	4469	1239	776	272	574	12	497	243	47	96	141	227	1528	340	785	631	10615
UNITED STATES:																	
Alabama	1	....	....	....	2	....	....	....	....	....	....	....	....	....	7	....	10
Arkansas	1	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....	4
Arizona .....	....	1	....	....	....	....	....	....	....	....	....	1	....	....	1	....	3
California	2	....	1	....	2	....	1	....	....	....	....	1	....	11	1	....	17
Colorado	3	....	....	1	....	....	1	....	....	....	....	1	....	9	....	....	15
Connecticut	1	....	....	....	2	....	....	1	....	....	....	....	....	2	....	....	6
District of Columbia .....	....	....	....	....	1	....	....	....	....	....	....	....	....	7	....	....	8
Florida	1	....	....	....	....	....	....	1	....	....	....	1	....	1	1	....	3
Georgia .....	....	2	....	....	....	....	1	....	....	....	....	....	....	1	....	....	8
Idaho	1	2	....	1	1	....	1	....	....	....	....	....	....	1	....	....	10
Illinois	14	3	7	....	3	....	2	....	....	1	....	2	4	1	35	3	69
Indiana	6	1	1	....	....	....	....	....	....	....	....	....	....	....	9	....	17
Iowa	96	17	8	7	8	....	21	1	....	2	2	3	....	10	39	21	193
Kansas	4	2	....	....	3	....	2	....	....	....	....	....	....	....	13	....	24
Kentucky	2	....	....	....	....	....	....	....	....	....	....	....	....	....	5	....	7
Louisiana .....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	2	....	3
Maine .....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1
Maryland	1	....	3	....	....	....	1	....	....	....	....	1	....	....	2	3	5
Massachusetts .....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	11	....	13

TABLE X—Continued

	S., L., and A.	Eng. and Arch.	Agri- cul- ture	Law	Medi- cine	Med. Tech- nicians	Nurs- ing	Denti- stry	Dental Hy- gienists	Mines and Met.	Phar- macy	Chem- istry	Edu- cation	Busi- ness Adm.	Gradu- ate	Dupli- cates	Total
Michigan	18	9	4	.....	4	.....	3	1	.....	.....	1	.....	10	2	21	3	70
Mississippi .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Missouri	6	4	.....	.....	2	.....	.....	.....	.....	1	1	.....	3	.....	14	1	30
Montana	37	10	3	.....	12	.....	7	1	1	.....	.....	.....	9	1	19	4	96
Nebraska	11	5	1	.....	4	1	1	.....	.....	.....	.....	1	1	.....	13	2	36
New Jersey	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	3
New Mexico	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	2	.....	5
New York	5	1	1	.....	2	.....	.....	1	.....	.....	.....	.....	.....	1	19	1	29
North Carolina	1	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	.....	10
North Dakota	84	21	7	7	17	.....	55	7	1	.....	2	2	33	11	28	17	258
Ohio	6	.....	2	.....	2	.....	1	.....	.....	.....	.....	2	1	.....	21	1	34
Oklahoma	8	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	7
Oregon	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9	.....	10
Pennsylvania	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	33	.....	36
Rhode Island .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
South Carolina .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	8	.....	9
South Dakota	98	31	16	4	10	.....	22	3	1	1	.....	2	56	6	28	23	255
Tennessee	2	.....	.....	.....	.....	.....	.....	1	.....	2	.....	.....	.....	1	10	.....	16
Texas	5	3	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12	.....	22
Utah	1	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	1	.....	4	1	8
Vermont .....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Virginia .....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	12	.....	13
Washington	6	2	1	.....	5	.....	1	.....	.....	.....	.....	.....	2	.....	11	.....	28
West Virginia .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	3
Wisconsin	103	36	19	4	19	1	38	8	.....	3	2	6	62	15	41	21	336
Wyoming	1	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	2	.....	5
Totals	528	151	82	24	106	2	157	27	3	10	8	19	188	50	489	105	1739

TABLE X—Continued

	S., L., and A.	Eng. and Arch.	Agri- cul- ture	Law	Medi- cine	Med. Tech- nicians	Nurs- ing	Den- tistry	Dental Hy- gienists	Mines and Met.	Phar- macy	Chem- istry	Edu- cation	Busi- ness Adm.	Gradu- ate	Dupli- cates	Total
FOREIGN COUNTRIES:																	
Australia	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	1	6
Austria .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Brazil .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Bolivia .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Canada	8	3	.....	.....	1	1	.....	5	.....	1	2	3	1	2	63	3	87
China	1	2	2	.....	1	.....	.....	.....	.....	.....	.....	1	.....	2	5	2	12
Cuba .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	1
Denmark .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
England .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	5
Finland .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Germany	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2	1	4
Hawaii .....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
India .....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	2
Ireland .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	3
Italy .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Japan	2	1	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	6
Mexico .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Norway	1	1	2	.....	1	.....	.....	4	.....	.....	.....	.....	.....	.....	2	.....	11
Philippine Islands	14	3	2	.....	1	.....	.....	.....	.....	.....	.....	1	1	.....	13	.....	35
Russia .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Scotland .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	2
South Africa .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	5
Spain .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Sweden .....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	2	.....	4
Switzerland .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Uruguay .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Wales .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	2
Totals	29	12	6	0	8	1	1	11	0	1	2	5	2	7	120	7	198
Grand totals	5026	1402	864	296	688	15	655	281	50	107	151	251	1718	397	1394	743	12552

REPORT OF THE COMPTROLLER

REPORT OF THE COMPTROLLER

To the President of the University:

SIR: I have the honor to submit herewith the annual report of the comptroller of the University of Minnesota for the year ended June 30, 1928.

The income of the University from all sources excluding interdepartmental transfers reached a total of \$9,527,303.83 for the year. The state provided \$3,818,621.55 for operation, \$595,505.79 for buildings, and \$223,775 for special research projects and agriculture extension work, the Permanent University Fund, \$142,513.95, and the swamp lands, \$75,328.10. The University in its operations, including the trust funds, added \$4,377,925.83.¹ Instruction, research, administration, and general required \$5,233,956.01, the physical plant, operation and maintenance, \$646,721.80 and new construction, \$1,532,852.75, while trust fund disbursements, including the purchase of new for matured securities, reached \$642,918.45, and service enterprise operations totaled \$1,736,876.27. Intercollegiate athletics brought in operating revenue of \$386,705.31 and accounted for expenditures of \$249,448.44, which includes reimbursements to the University in the amount of \$70,924.31. Salaries disbursement from all funds for all purposes totaled \$4,770,187.49, supplies \$1,476,125.86, and other expenses \$1,409,419.25.

During the year \$336,000 of the Comprehensive Building Fund certificates were retired and \$125,000 of the Field House bond issue of \$450,000 were called and retired.

At the close of the year the cash balances in the several funds amounted to \$2,297,548.46 of which \$430,000 is held by the Greater University Corporation. Deducting from this amount, however, the necessary reserve for outstanding obligations and the balances of the funds operating on a self-supporting basis there remained a free balance available for general university purposes of \$13,320.14.

Principal additions to plant included completion of the University Field House, the Plant Industry, Law, and Physics buildings. Construction also was started on the Cyrus Northrop Memorial Auditorium.

Respectfully submitted,

W. T. MIDDLEBROOK, *Comptroller*

¹ This amount does not include \$115,500 received from William H. Eustis as additional endowment for the Minnesota Hospital and Home for Crippled Children Fund nor the principal increases in the Permanent University Fund totaling \$236,720.54.

STATEMENT OF REVENUE
July 1, 1927 to June 30, 1928

Source	Item	Subtotal	Total
State Support			
For Operation			
23/100 Mill Tax	\$ 426,121.55		
Maintenance and Equipment Appropriation	3,275,000.00		
Minnesota General Hospital Reimbursement.....	100,000.00		
Grand Rapids Maintenance.....	15,000.00		
Duluth Maintenance	1,500.00		
Grand Rapids Alterations	1,000.00		
	-----	\$3,818,621.55	
For Buildings			
Building Fund Tax.....	\$ 594,505.79		
Grand Rapids Machine Shed.....	1,000.00		
	-----	595,505.79	
For Special Purposes			
Agricultural Extension	\$ 50,000.00		
County Agricultural Agents.....	85,775.00		
Manganiferous and Low Grade Ores Investigation.....	15,000.00		
Direct Process Beneficiation of Low Grade Ores.....	18,000.00		
Low Lime Soils Investigation.....	5,000.00		
Peat Soils Investigation.....	6,000.00		
Sandy Land Experiments.....	7,000.00		
Soils Survey	8,000.00		
Albert Lea Experimental Creamery.....	4,000.00		
Medical Research	25,000.00		
	-----	223,775.00	
		-----	\$4,637,902.34

Federal Aid		
Morrill Act	\$ 25,000.00	
Nelson Act	25,000.00	
Adams Act	15,000.00	
Hatch Act	15,000.00	
Smith-Lever Act	116,539.33	
Supplementary Smith-Lever Act.....	33,780.00	
Smith-Hughes Act	23,314.28	
Purnell Act	40,000.00	
	<hr/>	293,633.61
Permanent University Fund		142,513.95
Swamp Land Income		75,328.10
University Income		
Student Fees (Net).....		1,045,348.83
Sales and Miscellaneous		
Support Fund	\$ 422,612.70	
Agricultural Extension	406.99	
Low Lime Soils Investigation.....	31.20	
Peat Soils Investigation.....	20.23	
Albert Lea Experimental Creamery.....	38.05	
Soils Survey	10.00	
Grand Rapids Maintenance	411.78	
Medical Research	50.00	
	<hr/>	423,670.95
Service Enterprises and Revolving Funds.....		1,784,756.76
Intercollegiate Athletics		386,705.31
Trust Funds		737,443.98
		<hr/>
Total Revenue*		\$9,527,303.83

* Reimbursements by Senate Committee on Intercollegiate Athletics \$64,517.82 are omitted.

STATEMENT OF EXPENDITURES

July 1, 1927 to June 30, 1928

Major Division	Total	Salaries and Wages	Supplies	Expense	Capital
Administration	\$ 184,925.03	\$ 155,269.38	\$ 6,498.27	\$ 18,452.10	\$ 4,705.28
General University	421,782.13	193,061.04	9,594.54	83,456.00	135,670.55
Instruction and Research					
Science, Literature, and the Arts.....	793,897.54	738,192.83	12,937.13	16,232.56	26,535.02
Engineering and Architecture.....	329,122.65	279,426.59	17,400.77	8,095.32	24,199.97
Agriculture, Forestry, and Home Eco- nomics	822,520.24	622,203.46	77,802.67	60,528.36	61,985.75
Agricultural Schools and Experiment Stations	353,910.59	227,834.10	71,029.64	31,965.76	23,081.09
Medicine	309,961.36	270,404.82	19,013.78	9,968.22	10,574.54
Hospital	336,777.85	174,310.68	121,842.22	25,619.99	15,004.96
Education	198,930.01	184,426.83	4,375.04	7,398.90	2,729.24
Business Administration	105,507.96	103,265.50	828.85	662.76	750.85
Chemistry	169,966.16	130,984.07	29,575.37	4,521.67	4,885.05
Dentistry	140,551.09	104,016.75	26,914.34	6,131.50	3,488.50
Graduate School.....	147,545.35	127,634.73	8,174.54	7,277.80	4,458.28
Law	72,225.80	60,461.43	321.91	3,307.84	8,134.62
Mines and Metallurgy.....	139,582.30	108,701.79	16,513.10	9,493.12	4,874.29
Pharmacy	42,712.72	35,821.45	5,438.68	941.29	511.30
Summer Session	124,644.23	116,477.92	547.34	7,572.47	46.50

Unattached Departments	58,694.36	51,359.07	1,550.21	1,712.66	4,072.42
Extension—University	196,076.26	160,286.99	4,173.40	29,398.04	2,217.83
Extension—Agriculture.....	285,522.38	236,829.32	4,233.92	43,351.05	1,108.09
Physical Plant					
Main Campus	1,880,918.84	122,593.58	112,091.55	249,022.63	*1,397,211.08
Agricultural Campus	295,311.27	66,383.76	43,511.07	52,771.01	132,645.43
Crookston	1,397.18	63.63	24.00	221.25	1,088.30
Grand Rapids	1,947.27		23.06	16.26	1,907.95
Totals	\$7,414,430.56	\$4,270,009.72	\$ 594,415.40	\$ 678,118.56	\$1,871,886.88
Dormitories and Dining Halls.....	390,418.29	95,098.79	213,481.39	66,659.75	15,178.36
Stores	335,660.21	388.00	311,368.89	21,588.96	2,314.36
Student Service Enterprises.....	164,995.35	81,614.48	31,477.75	39,246.15	12,656.97
General Service Enterprises.....	681,352.12	248,200.89	248,133.14	83,527.44	101,490.65
Revolving Funds	164,450.39	11,618.08	57,207.06	86,241.27	9,383.98
Intercollegiate Athletics	249,448.44	63,257.53	20,042.23	163,048.04	3,100.64
Trust Funds	642,918.45			270,989.08	371,929.37
Bond Redemptions					
University Building Fund.....	336,000.00				336,000.00
Field House.....	125,000.00				125,000.00
Grand Totals	\$10,504,673.81	\$4,770,187.49	\$1,476,125.86	\$1,409,419.25	\$2,848,941.21

* Includes Field House \$615,729.71 paid from Athletics funds.

DETAIL OF REVENUE
July 1, 1927 to June 30, 1928
STUDENT FEES

	Regular Session	Summer Session
Collegiate		
Colleges and Summer Session		
Science, Literature, and the Arts.....	\$244,251.76	\$ 25,736.80
Engineering and Architecture.....	105,786.10	5,314.00
Agriculture, Forestry, and Home Economics.....	44,615.32	3,068.40
Law	24,816.25	1,332.50
Medicine	89,170.25	15,008.60
Nursing	5,401.50	84.20
Medical Technicians	1,019.75	20.00
Dentistry	47,116.75	4,541.14
Mines and Metallurgy.....	8,349.25	106.90
Pharmacy	14,109.80	353.80
Chemistry	18,598.25	1,740.10
Education	69,523.25	47,558.10
Business Administration	26,442.91	2,444.90
Graduate	8,477.50	21,955.30
Music	35,363.10	2,628.00
Dental Hygienists	3,310.00	300.70
Public Health Nursing.....	1,681.75	1,461.00
Miscellaneous	12,761.65	

Non-Collegiate

Central School of Agriculture.....	2,408.30	
Music—Agriculture	1,782.00	
University High School.....	9,537.00	
Short Courses	1,391.00	
University Summer Elementary School (Winnetka Plan).....		610.00

	\$775,913.44	\$134,264.44
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Extension Division

Evening Classes		\$103,977.11
Short Courses		9,497.00
Correspondence Instruction		21,696.84
Total.....		\$135,170.95

SUMMARY

Regular Session Fees, net.....		\$775,913.44
Summer Session Fees, net.....		134,264.44
Extension Division Fees, net.....		135,170.95
Total.....		\$1,045,348.83

DETAIL OF REVENUE
July 1, 1927 to June 30, 1928
STUDENT ENROLMENT

Collegiate

Colleges and Summer Session

Science, Literature, and the Arts.....	5,026
Engineering and Architecture	1,402
Agriculture, Forestry, and Home Economics.....	864
Law	296
Medicine*	688
Nursing	655
Medical Technicians	15
Dentistry†	331
Mines and Metallurgy.....	107
Pharmacy	151
Chemistry	251
Education	1,718
Business Administration	397
Graduate	1,394
Summer Session	5,444
Total.....	18,739
Less duplicates	2,888
Net total collegiate.....	15,851

Non-Collegiate

Sub-Collegiate

Central School of Agriculture.....	523
Northwest School of Agriculture (Crookston).....	298
West Central School of Agriculture (Morris).....	331
North Central School of Agriculture (Grand Rapids).....	31
University High School.....	270
Total.....	1,453
Less duplicates	2
Net total sub-collegiate.....	1,451

Short Courses

Beekeepers' Short Course.....	10	
Junior Short Course (Morris).....	416	
Farm Women's Week (Morris).....	164	
Home Nursing Short Course.....	253	
Junior Short Course.....	102	
Scout Masters' Short Course.....	47	
Farm Women's Short Course.....	112	
Cow Testers' Short Course (Crookston).....	25	
Creamery Operators' Short Course.....	63	
Advanced Creamery Operators' Short Course.....	29	
Farmers' Short Course (Grand Rapids).....	155	
Fur Breeders' Short Course.....	77	
Ice Cream Makers' Short Course.....	18	
Junior Short Course (Grand Rapids).....	125	
Land Valuation Short Course.....	73	
Total.....	1,669	
Less duplicates	47	
Net total short courses.....		1,622

Extension Division

Extension	6,023	
Correspondence	2,470	
Short Courses	482	
Total.....		8,975
Total non-collegiate		12,048
Less duplicates		2,004
Net total non-collegiate.....		10,044
Total collegiate and non-collegiate.....		25,895

* 149 serving internships.

† Includes 50 dental hygienists.

DETAIL OF REVENUE
July 1, 1927 to June 30, 1928

Sales and Miscellaneous

Administration

Comptroller's Office	\$	25.00	
			\$ 25.00

General University

Freshman Week	\$	6.00	
Miscellaneous Income		9,127.84	
Inter-Campus Trolley		9,814.15	
Museum of Natural History.....		2,954.28	
Library		2,674.22	
Library Bindery		2,210.26	
Overhead—Service Enterprises		12,100.63	
Scientific Apparatus Repair Shop.....		5,355.00	
Auto and Truck Service.....		138.49	
Overhead—Authorizations		24,571.62	
Commencement		22,408.80	
Diplomas		378.70	
Alumni Office		27.81	
			91,857.80

Science, Literature, and the Arts

Administration	\$	288.60	
Zoology		306.31	

Botany	244.00	
English	19.15	
Geography	11.65	
Geology and Mineralogy.....	9.00	
Geology Survey	150.00	
German	25.00	
History	138.00	
Journalism	28.22	
Music	431.68	
Physics	5.00	
Political Science	85.50	
Government Research	260.98	
Psychology	3.00	
Public Speaking	766.35	
Sociology	121.77	
	<hr/>	2,894.21

Engineering and Architecture

Engineering Experiment Station.....	292.95	
Civil	24.50	
Drawing and Descriptive Geometry.....	75.00	
Electrical	621.46	
Experimental Laboratories	90.63	
Mechanical	1,198.35	
Power Plant Laboratory	2,095.41	
	<hr/>	4,398.30

DETAIL OF REVENUE
July 1, 1927 to June 30, 1928

Sales and Miscellaneous

Agriculture, Forestry, and Home Economics

General	\$ 2,159.60
Library	200.61
Post Office	379.50
Publications	2,556.23
School of Agriculture	195.00
Short Courses	2,710.92
Experiment Station	111.53
Engineering	1,280.71
Agronomy, Farm Management, and Plant Genetics.....	1,061.23
Animal Husbandry	37,485.02
Biochemistry	95.70
Dairy Husbandry	8,624.98
Entomology and Economic Zoology.....	232.50
Forestry—Cloquet	7,979.88
Forestry—Itasca	182.00
Home Economics	520.74
Horticulture	26.08
Physical Training	270.85
Plant Pathology and Botany.....	25.21
Poultry Husbandry	3,378.63
Soils	23.80
Veterinary Medicine	1,052.68

\$ 70,553.40

Agricultural Schools and Experiment Stations

Crookston	\$ 25,186.74	
Morris	29,089.36	
Grand Rapids	11,571.13	
Duluth	7,239.18	
Waseca	7,697.86	
Zumbra Heights	3,347.04	
	<hr/>	84,131.31

Medicine

Administration	\$ 24.80	
Anatomy	170.66	
Bacteriology	207.66	
Medicine	290.67	
Pathology	928.46	
Pharmacology	156.00	
Physiology	1,669.10	
	<hr/>	3,447.35

Minnesota General Hospital

Pay Bed	\$ 55,072.05	
X-Ray	5,622.40	
Out-Patient	18,846.85	
	<hr/>	79,541.30

DETAIL OF REVENUE
July 1, 1927 to June 30, 1928

Sales and Miscellaneous

Education

Administration	\$ 155.96	
Art	8.25	
General Education	11.00	
General Education—Bureau of Recommendations.....	2,724.60	
Home Economics	63.89	
Trade and Industrial.....	31.00	
Educational Research	183.09	
		3,177.79
University High School		109.81*
Chemistry		1,865.47
Dentistry		52,855.05
Graduate		115.75
Law		97.66
Mines and Metallurgy.....		76.03
Mines Experiment Station.....		3,933.31
Pharmacy		2,286.09

Summer Session		
Miscellaneous	\$	113.25
Laboratory Fee		3,665.80
Recreation Fee		4,791.45
Distribution of Incidental Fee for 1926-27.....		8,040.00*
		<hr/>
		530.50
Physical Education for Men		1,832.82
Physical Education for Women		273.45
Military Department		135.00
General Extension Division		
Administration	\$	91.53
Evening Classes—Materials		2,253.00
Lyceum		13,264.95
Radio Broadcasting		360.00
		<hr/>
		15,969.48

* Credit.

DETAIL OF REVENUE
July 1, 1927 to June 30, 1928

Sales and Miscellaneous

Physical Plant

MAIN CAMPUS

Telephones	\$ 306.67
Heating Plant	475.06

BUILDINGS—MAIN CAMPUS

Miscellaneous	1,482.49
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BUILDINGS—FARM CAMPUS

Miscellaneous	428.72
Farm Maintenance	32.50

TOTAL PHYSICAL PLANT.....	2,725.44
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TOTAL SALES AND MISCELLANEOUS.....	\$422,612.70
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NEW LOANS MADE
July 1, 1927 to June 30, 1928, Inclusive

	No.	Aggregate Amount	Average Amount	Loans Of				Balance June 30, 1928
				Over \$200	\$100	\$100	Under \$100	
Mary Dwight Akers Loan Fund.....	11	\$ 475.00	\$43.20				11	\$3,525.00
Argosy Club Loan Fund.....	7	220.00	31.43				7	5.00
Bend Loan Fund	3	135.00	45.00				3	86.50
Cosmopolitan Club Loan Fund	3	200.00	66.67		1		2	466.20
Dad's Day Loan Fund	6	212.00	35.34				6	92.80
Dorr Loan Fund	15	755.00	50.33				15	870.86
Elliot Trust	11	1,680.00	152.73	2	6	2	1	1,368.04
Engineers' Bookstore Loan Fund	7	307.00	43.86				7	18.28
General Student Loan Fund	10	362.00	36.20				10	139.32
Gilfillan Trust Fund	278	13,631.45	49.03		3	11	264	1,585.36
Johnson Foundation Loan Fund for Girls.....	15	535.00	35.66			1	14	40.94
Law Alumni Loan Fund	7	625.00	89.28	1	1	1	4	59.01
Lind Fund for Aid of Deserving Crippled Students.....	4	72.00	18.00				4	700.50
Lindquist Loan Fund	4	172.00	43.00				4	184.46
Ludden Estate Loan Fund	39	1,959.00	50.23		1	4	34	427.90
Ludden Real Estate Loan Fund.....	258	11,228.00	43.50		1	5	252	978.76
Ludden Trust Fund	54	3,298.00	61.07		1	6	47	1,162.99
Merchants National Bank of St. Paul Loan Fund.....	4	154.00	38.50				4	62.94
Minnesota State Organization for Public Health Nursing Loan Fund	3	70.00	23.33				3	5.47
Juniata Shepperd Loan Fund	2	57.00	28.50				2	2.34
Women's Auxiliary of Minneapolis District Dental Society Loan Fund	1	50.00	50.00				1	51.97
Total 1927-28	742	\$36,197.45	\$49.28	3	14	30	695	\$11,834.73
Total 1926-27	754	37,526.75	49.77	5	23	28	698	4,558.02
Total 1925-26	614	33,010.90	53.76	4	15	51	544	5,737.30

COMPLETE REPORT OF COMPTROLLER

The complete *Comptroller's Report* is published and available for general distribution as Volume XXXI, No. 57, of the University of Minnesota Bulletin Series.

BUILDINGS AND GROUNDS

LAND AND BUILDINGS

LAND

During the year, additions to the main campus were made through the purchase of the following properties:

The Samuel T. Harven property at 516 Beacon Street, consisting of a 33 x 165 foot lot and house.

The Frank A. Nelson property at 500 Walnut Street, consisting of a 71 x 165 foot lot and house.

The Mary T. Scriver property at 603 East River Road, consisting of a lot 97 x 165 feet.

The Anthony Zeleny property at 603 Fulton Street, consisting of a lot 98 x 165 feet.

The C. J. Swendsen property at 621 Fulton Street, consisting of a lot 66 x 165 feet.

The Frederick W. Wittick property, consisting of a lot 70 x 165 feet.

LAND IMPROVEMENTS

Many improvements were made on the main campus during the past year. One of the outstanding of these was the grading, sodding, planting, and construction of walks for patients on the south side of Elliot Memorial Hospital. This was made possible through the kindness of the Citizens' Aid Society which furnished approximately three fourths of the funds.

Grading around the new Physics Building, and new Law Building, and the new Field House was started and is well under way. Funds were also set aside for grading around the new Auditorium.

Twenty-four large elm trees were transplanted, most of them being located on the Mall. A considerable amount of miscellaneous shrubbery was set out in such a manner as to add to the beauty of the campus.

A new sidewalk was laid along Seventeenth Avenue from the southeast corner of the Administration Building to Washington Avenue. The sidewalk leading from the northeast corner of the Minnesota Union between Pillsbury Hall and the Mechanical Engineering Building to Seventeenth Avenue was relaid. Funds were provided for sidewalks on the Mall.

New curbing was installed along the road which runs between the Administration and Mechanical Engineering buildings and also that which runs between the Mechanical Engineering and Pillsbury Hall.

On the farm campus, considerable grading and seeding was done around the new Plant Industry Building. The erection of this new building necessitated a considerable amount of new sidewalks, steps, and curbing, together with relocation of water mains. Construction of new sidewalks was started on both sides of Shady Lane from the drive which runs in front of the dormitories to Buford Avenue, and also from the northwest corner of the Administration Building to the east side of the Botany Building. An eight-foot walk was also laid from the intersection of Buford Avenue and Shady Lane to car line stop. The work of installing new curbs and gutters on both sides of Buford Avenue and on the road past the Administration and Engineering buildings is well under way.

All of the grading, seeding, and planting, together with the new sidewalks and curbing on both campuses has been done in accordance with the plans drawn by the landscape architects for the University.

BUILDINGS AND TUNNELS

During the year 1927-28, a number of buildings were completed and construction was begun on a number of others.

On the main campus, the new Physics Building and the new Field House were completed. The new Law Building was practically completed. The excavation and foundation work for the Northrop Memorial Auditorium was completed and the superstructure begun.

On the farm campus, the following buildings have been completed—Plant Industry, new sheep shed, three new poultry houses, an addition to the brooder house, and a new silo.

At the Northwest School and Experiment Station at Crookston, the new smoke stack was completed. The new machinery shed at Grand Rapids is well under way.

A large tunnel was constructed between the north tower of the Stadium and the Field House. This tunnel is used not only for steam mains but also as a passage way for athletes.

A new shaft connecting the deep tunnel with the new auditorium has been completed. The large steam mains which carry the supply for the new Auditorium are in this shaft.

Money has also been set aside for a tunnel from the Chemistry to the Botany Building.

On account of the increased amount of heating load due to the erection of new buildings, the present smokestack at the power plant is overloaded and funds have been set aside for an additional stack.

BUILDING IMPROVEMENTS AND ALTERATIONS

Besides the customary amount of necessary maintenance work which includes interior decorating, outside painting, miscellaneous roof and gutter repairs, steam lines, electrical work, etc., the following major alterations deserve special mention:

Due to the moving of the Law School into its new building, the Old Law Building will become available for other purposes and funds have been set aside completely to remodel the interior of this building. The south half of the ground floor is to be arranged for the manual training and physics departments of the University High School. The north half of the ground floor will provide adequate toilet rooms. The first and second floors of the north half of the building will house the Institute of Child Welfare. There will also be four large classrooms for general university purposes.

The Old Physics Building became available when the Physics Department occupied their new home. The large lecture room in this building is to be available for general university purposes. All other rooms on the second floor and the two north rooms on the ground floor are to be remodeled and will house the Department of Art Education. The first floor and four rooms on the ground floor are to be arranged for the Department of Sociology and Student Publications will occupy most of the south half of the ground floor.

On account of the construction of the new Auditorium, the old Mechanical Engineering forge shop and foundry were torn down and the space which was between the Mechanical Engineering and the Old Electrical Engineering buildings has been completely built in and now houses the foundry and forge shop. The

Old Electrical Engineering Building has been rearranged to provide drafting rooms for the Department of Mechanical Engineering.

In Pillsbury Hall, new maple floors and steel ceilings were installed in most of the offices and classrooms on first and second floors. Changes were made to improve the lighting and heating systems and the walls and ceilings of the entire two floors were painted.

In the Old Library Building, a complete rearrangement of the rooms on the east side of the first floor was made to provide quarters for the Department of Geography.

On the south side of the Mines Experiment Station, a considerable amount of excavation was done and large concrete ore bins were built.

Mention should be made of the improvement in the lighting arrangement used in several of the drawing rooms in the Main Engineering Building, in classrooms and laboratories of the Psychology Department, and in the dissecting rooms in the Anatomy Building.

On the farm campus, the old Farm House has been completely remodeled on the inside. In the past, this building housed the Division of Bee Culture and the farm help. The Beekeeping Division was transferred to the Old Dairy Building and the farm help is no longer housed on the campus. Consequently, the remodeling provides a new home for the Department of Plant Genetics and Agronomy.

With the completion of the new Plant Industry Building, the Department of Biochemistry moved from their old quarters in the Old Biochemistry Building and this building has been thoroughly renovated and rearranged to house the Division of Soils.

In the Music Building, the first floor has been completely remodeled and now houses the bookkeeping and typewriting divisions of the School of Agriculture.

The main entrance to the dining hall and boys' dormitory has been completely remodeled at considerable expense. The new arrangement has done away with a very disagreeable traffic congestion.

Miscellaneous improvements were made in Haecker Hall in order to house the Divisions of Farm Management and Agri-

cultural Economics. Provisions were made to house the photographic laboratory in the Old Dairy Building and some improvements were made in the basement of the Administration Building to take care of Publications. Agricultural Extension was moved from the third floor of Haecker Hall to the first floor in the Administration Building.

Weatherstrips have been provided in the following buildings: Horticulture, Agricultural Engineering, Haecker Hall, Botany, Old Chemistry, and the Livestock Pavilion, which should result in a considerable saving of steam.

Complete or partial installation of thermostatic control has been made in Home Economics, Farm House, Livestock Pavilion, Old Chemistry, and Botany buildings.

REPORTS OF ADMINISTRATIVE OFFICERS

HONOR POINT SYSTEM

Frequent references to the honor point system are made in the following reports of administrative officers. The facts here given are, therefore, of general application.

The purpose of this system is to give greater recognition to the higher orders of scholastic achievement. Two factors are employed: a provision that the higher marks shall count more than the lower and a requirement, for promotion and graduation, of a certain average mark in a student's entire work. This plan enables the student to profit by the higher marks received in those studies for which he has the greater aptitude.

Each credit in a course carries three honor points for a mark of A, two for a mark of B, one for a mark of C, none for a mark of D, and minus one for a mark of F. The requirement of satisfactory work is that the student shall secure an average of one honor point (equivalent to a mark of C) in all the studies carried. (When this system was adopted in the College of Science, Literature, and the Arts, in 1914-15, along with the letter-grading system, it was an exact translation of a rule of many years standing in that college which required for graduation a grade of "good" in half of the student's work.)

The honor point ratio is employed as the simplest expression of relative scholastic standing. The ratio is obtained by dividing the algebraic sum of the honor points secured by the number of credit hours of work carried. Thus if a student carries five three-credit courses and receives three B's, one C, and one F, the sum of his honor points is eighteen and his honor point ratio is 1.20.

THE COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

To the President of the University:

SIR: I have the honor to present the following report on the work of the College of Science, Literature, and the Arts for the year 1927-28.

The following table gives a summary of faculty, students, graduates, and the teaching load for each of the past five years. The figures show the total enrolment for the year and the number of faculty actually teaching in the fall quarter together with the teaching load for that quarter.

	1923-24	1924-25	1925-26	1926-27	1927-28
Faculty	199.8	202.33	207.35	210.14	216.23
Teaching load in student units	3,911	4,063	4,415	4,668	4,675
Enrolment	4,059	4,258	4,609	4,968	.....
Men	2,288	2,455	2,749	2,983	.....
Women	1,771	1,803	1,860	1,985	.....
Graduates	359	376	332	437	384

The year has been characterized by some diminution of the rapid growth that has gone on steadily since 1919 and the attention of the faculty has been turned more to problems of adjustment in curriculum and the guidance of students. There have been improvements in the faculty counselling system, in the methods of handling incoming freshmen, and in the facilities offered to students of superior ability.

Faculty counselling.—The staff for counselling students has consisted of fourteen faculty members, seven of whom have had reduced schedules of teaching so that they could devote one-third time to this work. There has been added to the group this year a trained social case worker who in special cases visits the homes of students and attempts to discover the underlying causes of their scholastic difficulties. The staff has profited further by the appointment of a full time mental hygienist in the Students' Health Service. The counsellors have this year developed, to a fuller extent than before, co-operation with the Y.M.C.A., Y.W.C.A., Women's Self-Government Association, Employment Bureau, and other agencies which may offer opportunities for the solution of student problems. The Y.M.C.A. is experimenting with a socializing program of which the counsellors have availed themselves for the benefit of some of their students.

The counsellors in the past year have had 454 freshmen in their charge and have carried on the cases of many of last year's freshmen who wished further advice or assistance. The number of students applying for counsellors in response to a general invitation sent individually to all freshmen was much larger than in any previous year. It seems probable that a majority of those who had serious need of advice have

been reached this year. These include all grades of students, some of the most distinguished in their class work and a considerable number of those who were on probation. Assignments to counsellors were made by the dean's office.

Classification of freshmen.—During this year the college has inaugurated a plan for the general classification of freshmen before registration with reference to their aptitudes for college work. Although something of this kind has been done for a number of years in freshman English and more recently in mathematics, this is the first attempt to apply in general the principle of educational guidance in advance of registration. The means used for guidance consist of a classification of freshman studies and the college aptitude ratings which have been described in the *Report of the Survey Commission, No. X, 1927*.

In classifying freshman studies the faculty have drawn a distinction between general or survey courses chiefly factual or informational in character and those courses of a more technical nature which are designed as introductions to more advanced courses and as a means of training in method or in the use of tools, etc. The informational courses are open to all freshmen including those who have very low college aptitude ratings and are the only courses open to this latter group. For this group who will remain in residence only for a limited time these studies offer more of definite value than do the more technical courses. At the same time these courses offer students an opportunity to show what they can do. Any student who does satisfactory work in these courses will be admitted to the courses required in any curriculum.

The courses open in 1928-29 to the freshmen of low aptitudes include: Modern World History; Introduction to Economics; Human Geography; lecture courses in botany, geology, and zoology; English; mathematics; and certain courses of a vocational character, such as shopwork and drawing. Courses which are reserved for students of higher aptitude are such as English history, foreign languages, and laboratory courses in the sciences. For the classification of students in English both the college aptitude ratings and the scores made in special English tests are used. In mathematics students are classified by means of special tests employed during the first week of college work.

The object of this plan is to place the curricular requirements and the treatment of students as far as possible on the basis of individual aptitudes and needs. To do this has required the development of rather elaborate machinery.

Through the cordial co-operation of the high schools of the state the college has given its psychological and English tests in May, not only in the Twin City high schools as heretofore, but also in fifteen schools so selected as to serve as centers to which students could be asked to come from surrounding territories. For this testing program the members of the Association of Minnesota Colleges asked to be allowed to join with us and all students who expected to attend any of the colleges were urged to take these tests. Nearly five thousand students took the tests and the results were distributed to all the co-operating colleges in a

mimeographed list. As fast as students applied for admission to this college they were sent letters of advice containing their general aptitude ratings, their classification in English, and any special instructions that seemed necessary. Many students were advised to take the course in How To Study and many of those with low ratings were limited to twelve or thirteen hours instead of a full program. At the moment of writing this report in July, considerably more than half of the students coming from the state have received these letters and many have written special inquiries to which answers have been given.

Care has been taken in this work to maintain the policy of the University to accept all graduates of accredited high schools. Instructions given to students of low aptitudes are that they shall elect studies from the list above mentioned on the ground that these are the studies from which they will derive the greatest benefit. It is expected that some of these persons will decide for themselves not to undertake university work and will enter more suitable employments. It is hoped that worth-while progress will be made in the direction of classifying all freshmen in such ways that we can render them better individual service than ever before. The chief advantage from this preregistration advising will come in the course of years from the effects of the education of the general public and from the establishment among high school students of a practice and custom of self-examination and inquiry as to whether they should go to college, instead of the present taking-it-for-granted attitude. General dissemination of knowledge regarding aptitudes for higher education will lead a large proportion of the capable and superior students to come to college and a smaller proportion of those who are unfitted to this particular kind of work.

The Department of Mathematics this year has classified its students by means of tests given during the first two weeks of the quarter. The Departments of German and of Romance Languages are at work on the problem of placement for the students entering their courses.

Curriculum.—The above plan for the adjustment of the work of freshmen constitutes an important step toward curricular requirements differentiated to meet the needs of individual students. The pursuance of this policy of differential curricula will not mean that each student will have a program of studies all his own and different from those followed by other students, but that what studies are to be required or advised in every case will be determined after careful consideration of the peculiar abilities, circumstances, and aims of the individual student.

As helps toward the development of this policy the faculty two years ago approved in general plans for survey courses and for honors work. Survey courses have been offered in history, English, geography, geology, and zoology and additional courses of this character are offered for 1928-29 in botany and chemistry. Honors work has been conducted the past year in English and is offered for 1928-29 in political science, sociology, anthropology, and zoology.

Respectfully submitted,

J. B. JOHNSTON, *Dean*

THE COLLEGE OF ENGINEERING AND ARCHITECTURE

To the President of the University:

SIR: I have the honor to submit my report for the College of Engineering and Architecture for the year 1927-28.

STUDENTS ATTENDANCE BY QUARTERS FALL QUARTER, 1927-28

	Fresh- men	Sopho- mores	Juniors	Seniors	Un- classified	Total
Agricultural Engineering ...	6	2	..	..	..	8
Architectural Engineering ..	15	31	11	9	..	66
Architecture	98	62	18	16	1	195
Civil Engineering	68	70	42	47	..	227
Electrical Engineering	154	124	82	70	..	430
Engineering Pre-business ...	10	10	..	..	..	20
Interior Decoration .....	..	..	5	4	..	9
Mechanical Engineering	78	74	45	35	..	232
Undetermined	52	..	..	..	..	52
Totals, 1927-28	481	373	203	181	1	1,239
Totals, last year, 1926-27 ...	(460)	(326)	(191)	(190)	(2)	(1,174)

WINTER QUARTER, 1927-28

Agricultural Engineering ...	4	6	..	..	..	10
Architectural Engineering ..	11	23	12	9	..	57
Architecture	98	52	21	15	10	196
Civil Engineering	63	66	47	42	..	218
Electrical Engineering	114	120	89	65	..	388
Engineering Pre-business	8	12	..	..	..	20
Interior Decoration .....	..	..	6	4	..	10
Mechanical Engineering	61	63	46	32	..	202
Undetermined	94	..	..	..	..	94
Totals, 1927-28	453	344	221	167	10	1,195
Totals, last year 1926-27 ...	(403)	(339)	(196)	(181)	(5)	(1,124)

SPRING QUARTER, 1927-28

Agricultural Engineering	5	7	..	..	..	12
Architectural Engineering ..	8	23	14	7	..	52
Architecture	84	39	21	14	8	166
Civil Engineering	46	52	48	36	..	182
Electrical Engineering	96	115	86	66	..	363
Engineering Pre-business ...	8	13	..	..	..	21
Interior Decoration .....	..	..	10	2	..	12
Mechanical Engineering	53	60	44	29	..	186
Undetermined	67	..	..	..	..	67
Totals, 1927-28	367	309	223	154	8	1,061
Totals, last year, 1926-27 ...	(345)	(286)	(198)	(169)	(3)	(1,001)

AMOUNT OF INSTRUCTION, 1927-28

The total enrolment in the college for the year has been 1,402 as compared with 1,306 for last year. The total amount of instruction for the year, including the Summer Session, 1927, has been 49,740 student quarter credits. The corresponding figure for last year was 46,151 student quarter credits.

DEGREES CONFERRED, 1927-28

	Summer 1927	Dec. 1927	March 1928	June 1928	Total
Bachelor of (science in)*					
Architectural engineering ..	1	..	..	9	10
Architecture .....	..	3	..	9	12
Civil engineering	1	6	5	31	43
Electrical engineering	5	1	..	63	69
Interior decoration .....	..	1	..	2	3
Mechanical engineering ...	1	2	..	30	33
Totals, 1927-28	8	13	5	144	170
Totals, last year, 1926-27	(11)	(9)	(14)	(140)	(174)

* The new form of degree, omitting the words "science in," was introduced at the June commencement, 1928.

COURSES AND DEGREES

New form of degrees.—Upon the recommendation of the faculty of the college, the Board of Regents, February 11, 1928, approved the change in the form of the Bachelor's degrees in the College of Engineering and Architecture and the School of Chemistry by omitting the words "science in," so that the degree has the form, bachelor of architecture, for example, instead of bachelor of science in architecture. The new form of degree is engineering the old form, as it was the first one used for the courses in engineering during the first thirty years of the history of engineering at the University of Minnesota. This form of degree is regarded as expressing the professional character of the courses in these colleges better than the more general "bachelor of science."

New courses.—The establishment of new professional courses in landscape architecture and aeronautical engineering was approved by the Board of Regents on February 11 and April 5, respectively. Each of these courses leads to the Bachelor's degree. The freshman year of the course in landscape architecture will be the same as the first year in architecture. Similarly, the first year in aeronautical engineering will be the same as the standard first year of the other engineering courses, such as civil, electrical, and mechanical engineering. For the course in landscape architecture, a close co-operation will exist with the Division of Horticulture of the College of Agriculture, Forestry, and Home Economics.

ENGINEERING EXPERIMENT STATION

Heating and ventilation.—Through the co-operation of the American Society of Heating and Ventilating Engineers, our research program in this field was extended this year. The society furnished \$1,750 per year for the support of this research. This was augmented by Experiment Station funds. Several research projects are in progress.

Research funds to cover investigations in heat insulation have been received from manufacturing companies to the amount of \$3,000. This will provide for an acceleration of the research activities of the Experiment Station in the investigation of the transmission of heat through building materials which has been in progress for several years.

Civil engineering.—Through the establishment of several fellowships in highway and structural engineering, investigations are being carried on in these fields with satisfactory results.

Publications.—During the year, two bulletins of the Engineering Experiment Station have been published, Bulletin No. 5, *Turns and Phases in Squirrel Cage Windings*, by George F. Corcoran and Henry R. Reed, and Bulletin No. 6, *Integral Waterproofing Compounds for Concrete*, by Maurice B. Lagaard.

MOTOR VEHICLE LIGHT TESTING LABORATORY

At the request of the commissioner of highways of the state of Minnesota, and with the approval of the Board of Regents, there was established in the Department of Electrical Engineering a Motor Vehicle Light Testing Laboratory, of which the function would be to serve as the official laboratory for the State Department of Highways, to test and certificate such vehicle lighting equipment and devices as would be submitted for approval for sale in the state of Minnesota. The laboratory will be supported by the fees received. In this connection, it may be recalled that the materials testing laboratories of the Highway Department are located in one of the buildings of this college, under the supervision of our professor of highway engineering who serves also as engineer of tests and inspection for the Highway Department. In further co-operation with this college, the Department of Highways has installed a new 600,000-pound testing machine in the Experimental Engineering Laboratories which will be of service to both parties.

THE MINNESOTA TECHNO-LOG

An event of significance in this college was the approval by the Board of Regents of a petition by the students of the College of Engineering and Architecture, the School of Chemistry, and the School of Mines and Metallurgy, asking that each student in these colleges be made a subscriber to the *Minnesota Techno-Log* by the payment of 40 cents per quarter deducted from the student's deposit fees. This increased subscription will be of great benefit to the *Techno-Log* in enabling its managers

to produce a better publication on a more stabilized basis. The *Techno-Log* is the monthly magazine of the students in Engineering, Architecture, Chemistry, and Mines and Metallurgy. It is published under the direction of a board, consisting of student representatives elected from these colleges, together with faculty members.

Respectfully submitted,

O. M. LELAND, *Dean*

THE SCHOOL OF CHEMISTRY

To the President of the University:

SIR: I have the honor to submit my report for the School of Chemistry for the year 1927-28.

STUDENTS

ATTENDANCE BY QUARTERS, 1927-28

	Freshmen	Sophomores	Juniors	Seniors	Un-classed	Total
FALL						
Chemistry	23	18	11	9	3	64
Chemical engineering	58	44	37	21	..	160
Totals	81	62	48	30	3	224
Total, previous year.	..	..	..	..	..	(205)
WINTER						
Chemistry	14	14	10	11	2	51
Chemical engineering	54	42	41	19	..	156
Totals	68	56	51	30	2	207
Total, previous year.	..	..	..	..	..	(185)
SPRING						
Chemistry	11	11	7	9	2	40
Chemical engineering	52	46	39	19	..	156
Totals	63	57	46	28	2	196
Total, previous year.	..	..	..	..	..	(173)

AMOUNT OF INSTRUCTION, 1927-28

The total amount of instruction for the year, including the previous Summer Session of 1927, has been 27,016 student quarter credits. The corresponding figure for the year 1926-27 was 25,994 student quarter credits. The total enrolment was 251 as compared with 226 of last year.

DEGREES CONFERRED, 1927-28

	July 1927	December 1927	March 1928	June 1928	Total
Bachelor of (science in)*					
Chemistry	2	..	..	7	9
Chemical engineering	1	1	..	11	13
Totals, 1927-28	3	1	..	18	22
Totals, previous year	(3)	(1)	..	(10)	(14)

* The new form of degree, omitting the words "science in," was introduced at the June commencement, 1928.

Respectfully submitted,

O. M. LELAND, *Dean*

THE DEPARTMENT OF AGRICULTURE

To the President of the University:

SIR: I beg leave to submit the following report of the work of the Department of Agriculture for the year 1927-28.

During the year important steps were taken in reorganizing certain division of the department. Farm Management and Agricultural Economics were combined in one division. Agronomy and Plant Genetics were organized as a division and placed under the direction of Professor H. K. Hayes. Professor Andrew Boss was relieved of divisional headship duties. This arrangement will make it possible for him, as vice-director, to give more time to the administrative work of the Experiment Station. He will give closer attention than formerly to the organization of the research projects of the station, both at University Farm and at the branch stations, with a view to encouraging more accurate procedure, greater productiveness, and more effective co-operative relationships between divisions and members of staff. He will also have opportunity to stimulate the growing sentiment that research projects in the station as stated in general terms should be organized around projects rather than particular men and divisions.

Other administrative changes that should be mentioned are first, the placing of the payroll and cashier's offices at University Farm under the direction of the comptroller of the University under about the same conditions as the registrar's office at that place is under the direction of the registrar of the University; second, the organization of the mimeographing service under the control of the manager of the Printing Department of the University.

Marked changes were made in the allotment of space during the year. The Division of Biochemistry moved into the new Plant Industry Building, which is regarded as ranking with the very best buildings in the country for instruction, both undergraduate and graduate, and for research in biochemistry. The Division of Soils, formerly housed in three different buildings, was moved into the Old Chemistry Building. The lower floor of the Music Building, formerly occupied by Soils, was fitted up for the typewriting, penmanship, and bookkeeping classes of the school. The new Division of Farm Management and Agricultural Economics was placed on the third floor of Haecker Hall; the new Division of Agronomy and Plant Genetics was established in the Farm House, which has been remodeled so that it is satisfactory as an office building for this division. But with the exception of one classroom and one research laboratory, classrooms and laboratories have to be provided for elsewhere. The Division of Beekeeping, which is to be part of the Division of Economic Entomology and Zoology, was moved from the Farm House to the Old Dairy Hall, and the photographic gallery, with enlarged facilities suitable for serving the entire University, was also moved to the Old Dairy Hall. The Division of Extension was transferred from the third floor of Haecker Hall to

the first floor of the Administration Building, and the vice-director of the Experiment Station was given office space on the second floor of this building. Space was provided in the basement of the Administration Building for the mimeographing and bulletin service. All of these changes of location naturally involved many readjustments, but on the whole they resulted in advantage to all the parties concerned.

During the year several members of staff were on sabbatical leave under conditions that should greatly stimulate productive scholarship. Early in the year Dr. Royal N. Chapman returned after having spent a full year in study and travel. He studied at the Rothamstead Experiment Station with Dr. A. D. Imms, and at the European Parasite Laboratory at Hyires, France, with Dr. W. R. Thompson, and he visited virtually all the centers of Europe where significant entomological researches are being conducted. Other members of staff who made equally significant contacts abroad in their respective fields were Professors R. B. Harvey and J. G. Leach of the Division of Plant Pathology and Economic Botany, and J. J. Willaman of Biochemistry.

The honor bestowed on Dr. E. C. Stakman through the award in Denmark of the Emil Christian Hansen gold medal and prize for his outstanding researches in the black stem rust of wheat is, indeed, gratifying to the whole Department of Agriculture, as it signifies that Dr. Stakman has a world-wide standing as an eminent scientist in the field of plant pathology.

In some divisions, the year under review has been a period of trial with respect to holding men. It is quite beyond reason for any division to expect permanently to hold all of its good men, but frequent losses result in a turnover in personnel which cripples all lines of work and jeopardizes certain researches in the Experiment Station. Reference is made to such researches as plant breeding, plant pathology, and others which require a continuity of attack over a period of years. Too many institutions and organizations are demanding highly trained men in fields covered by graduate study in agriculture and apparently too few centers are training such men. The United States Department of Agriculture has attracted several of the younger members of the Farm Management and Agricultural Economics staff into its ranks at salaries quite beyond anything the University seems able to pay, and yet the United States Department of Agriculture complains against a constant loss of men to private organizations in need of men with economic training in agriculture. In spite of earnest effort on the part of the University to make equitable adjustments, the matter of salaries is one of the most difficult problems the Department of Agriculture faces at present.

THE COLLEGE

The registration in agriculture for the last three years has been lower than that of any one year since 1913 with the exception of the war year 1918-19. It has slowly increased in the last three years. It is interesting to note that the curve of registrations for agriculture for the last

fifteen years in the college courses and in the School of Agriculture correspond in a very significant manner. High points were reached between the years 1919 and 1921, since which time both have had large decreases reaching low points from 1924 to 1926. Both have been almost stationary with slight increases in the last two years. This seems to indicate that the chief factor has been the economic condition of agriculture. The depression of 1920 to 1921 was reflected sharply in the registrations in agriculture in all of the schools of agriculture in the state. The decrease in the college was also marked but more gradual.

It must be kept in mind that the schools of agriculture offer a type of training for the modern practice of farming and probably draw students who, in the absence of such schools, would be forced to go to colleges of agriculture. This has brought about, of necessity, a greater stress in the college on the training of specialists for various fields. Furthermore, the effectiveness of the college training cannot be judged alone by the registration in agriculture in the college, since it is also reflected in the approximately 150 students majoring in some special field of agriculture in the Graduate School.

Forestry has had a steady increase since the low point reached in 1918-19, when the registration was only 18, and has reached 207 in the year 1927-28. In Home Economics the increase in the last five years has also been consistent although not very large. The registration of 434 in the year 1927-28 is the largest registration ever recorded in the group. This increase in registration is especially interesting in view of the fact that the registrations are increasing faster in the upper two years than in the lower two years. This is because of the registration of transfer students from other colleges and from junior colleges. We consider this a very desirable development since it gives opportunity for intensive training in the field of home economics to a larger number of students who have already been tried out and usually found successful in the first two years of college elsewhere.

The contacts of agriculture, forestry, and home economics with the various industries that have to do with these fields of work are becoming more and more responsive to the advantages of special training in these fields as offered by the College of Agriculture, Forestry, and Home Economics. Employment in these industries of graduates from this college will bring about a better understanding of the problems of agriculture, forestry, and home economics in such industries.

SCHOOLS

THE CENTRAL SCHOOL

During 1927-28 there were 529 students enrolled in the School of Agriculture; 26 students enrolled for postgraduate work; and 104 in the graduating class. The number taking the fourth year work with a view to entering the college is increasing. In fact, the schools are becoming an important source of strong agriculturally minded students for the college.

NORTHWEST SCHOOL

The enrolment in the regular school courses during 1927-28 totaled 298. Of this number 207 were men and 91 women. In addition to the regular three- and four-year students, 142 boys and 112 girls (total 254, attended the Boys' and Girls' Short Course, 112 women registered for the Women's Short Course, and 25 men enrolled for the Cow Testers' Short Course. Though no enrolment record was kept of the Northwest School's Farmers' Week, the attendance at both men's and women's meetings surpassed all previous records.

WEST CENTRAL SCHOOL

Satisfactory progress was made in all branches of the program of work at the West Central School. The enrolment in the regular school course was 334, and, including the short courses, the total enrolment for the year was 966. The short courses held during the year were the annual Boys' and Girls' Short Course in April; the short course for farm women in June; and a Soil and Farm Management Course for land owners, conducted for the first time this year, was also held during the month of June. This course is believed to fill a distinct need in the agricultural program of western Minnesota and will be repeated next year. Special days of educational importance held at the school during the year were the Experiment Station Visitors' Day on July 15, the annual Parents and Visitors Day on November 12, the annual Sheep Feeders' Day on January 30, and the Student Homecoming Day on June 20. All of these special days were largely attended.

NORTH CENTRAL SCHOOL

Only boys were admitted to the school. The enrolment during the year was 31 which was almost double that of last year.

THE EXPERIMENT STATION

The work of the Experiment Station for the year is best represented by the publications produced. These consist of ten bulletins published in the Experiment Station Series and six in the Technical Series of experiment station publications. Annual reports have been published covering the work of the Central Station, the Northwest Experiment Station, and the Northeast Experiment Station. In addition to the above, 73 articles have been accepted for publication in the Scientific Journal Series and ten in the Miscellaneous Series.

EXTENSION SERVICE

The administrative organization of the Agricultural Extension Division has operated in 1927-28 similarly to preceding years. Following the reorganization of the clerical work of the office in 1926-27, there has come some centralization of the administrative duties in connection with the supervision of the work of extension agents in the counties, and improved administrative policies have been adopted looking toward closer relationship of the supervisors of the home, club, and county agent lines of work.

The relations of the Agricultural Extension Service with the Experiment Station, the Agricultural College, the schools of agriculture, the Smith-Hughes high schools of the state, the State Department of Agriculture, and the State Farm Bureau have been particularly close and satisfactory.

During the year the Agricultural Extension Service had on the state staff 22 men and 8 women employed full time and 10 men and 1 woman employed on a part time basis, 65 county agricultural agents, 5 county home demonstration agents, 2 full time county club agents, 17 part time club agents, and an office force of 14 workers, making a total of 144 employees.

The total fund available for the maintenance of the agricultural extension work for the year was \$476,736. Of this sum the direct appropriation from the state was \$135,775 or 29 per cent; from the Federal Department of Agriculture, \$164,679 or 34 per cent; the county appropriations for the maintenance of county workers totaled \$141,282 or 30 per cent; and the county farm bureaus contributed \$35,000 or 7 per cent.

SUMMARY OF ACCOMPLISHMENTS

The record of service performed by the county agents in the counties year by year increases in quantity and in quality. The total number of contacts of all kinds relative to extension service in 1924-25 totaled 950,000. The next year this was increased to approximately 1,000,000, the following year to 1,250,000 and in 1927-28 to 1,339,701. On the day basis this means approximately 52 contacts per working day through the year as an average of the 63 co-operating counties. A common measure of accomplishment has been the number of improved practices adopted on farms and farm homes as a result of extension work. The number of farms reporting changed practices in the principal projects totaled 70,570. Inasmuch as the work is not organized in approximately one fourth of the area of the state, the number of farms reporting such changed practices totaled very close to one half of the farms in the counties co-operating in the Extension Service.

The record of service of the home demonstration agents together with the service contributed by the state specialists, indicates that 55 counties of the 63 organized for extension work received assistance in the home project work through the year. The total number of homes reporting the adoption of improved practices through specialists was approximately 7,400, with a much larger number being reached by the local leaders as they met the farm women in their various communities.

The junior extension work made a very satisfactory record for 1927-28. There was an 8 per cent increase in the total enrolment of club members, the total reaching 28,637, with 71 per cent finishing the complete year's work or a total of 20,479. The average enrolment per county co-operating was 350 with seven counties having more than 600 club members, ten counties averaging around 500, and forty-three counties ranging from 200 to 350 enrolled. There were but two full time county club leaders in the state, with 17 counties employing part time club leaders through the busy summer months. Approximately 55 per cent of those finishing the club

project work were girls with the emphasis on sewing, canning, bread baking, room furnishing, and home beautification. In the boys' work the largest number finishing was in the dairy calf project followed by poultry, garden, pig clubs, and baby beef feeding.

SHORT COURSES

The short courses for the year and the number registered were as follows:

Veterinary Short Course	190
Forestry, Woodcraft, and Scouting	47
Advanced Creamery Operators'	29
Ice Cream Makers'	18
Creamery Operators'	63
Farmers' and Homemakers'	1878
Horticulture	352
Home Nursing	102
Editors'	125
Beekeepers'	10
Boys' and Girls'	800
Fur Farming	113
Land Valuation	74

The numbers registered given above are of those actually recorded in the registrar's office. In most cases, this is the actual number in attendance but some short courses, due to their character and to the fact that no fees are charged, usually have many more persons in attendance for shorter or longer portions of the short course than the number registered shows. While the variation in conditions frequently makes wide variations in attendance, yet on the whole, the interest and enthusiasm in these short courses seems unflagging.

There are many requests for establishing additional short courses but it has been the plan to defer starting new ones until there is assurance that the numbers willing to attend and the service that can be performed by the institution are sufficiently promising to warrant the expenditure of money and effort.

In addition to the administration of these short courses the office in the Division of Short Courses has had general charge of other similar events at University Farm, such as excursions, conferences, and visits of special groups interested either in a general comprehension of the activities of the institution or of obtaining more specific knowledge of some definite field of the University Department of Agriculture activities. The office has become a clearing house for arranging dates and programs for these various visiting groups. The number of such persons visiting University Farm is definitely increasing and doubtless shows an increasing interest on the part of the public in the activities represented by this department of the institution. This increased interest and the increased attendance upon the visits of these groups have given occasion for generous expressions of appreciation of the work of the University in this field on the part of our visitors.

Respectfully submitted,

W. C. COFFEY, *Dean*

THE LAW SCHOOL

To the President of the University:

SIR: I submit herewith the report for the Law School for the academic year 1926-27.

Admission to the bar.—The requirements for admission to the bar were increased in several jurisdictions. New York and Wyoming joined the group of states requiring two years of college work or an equivalent. Nine states now have this requirement. The Minnesota Bar Association, at its last meeting, passed a resolution in favor of its adoption. The resolution has the approval of all the law schools in Minnesota, and will shortly be presented to the Supreme Court which controls admission in this state.

Examinations are generally required of all candidates for admission to the bar, but in a few states graduates of the state university law school are admitted without examination. Texas has, with great liberality, accorded this privilege to all schools approved by the Council of Legal Education of the American Bar Association—60 of the 178 law schools in the United States.

Admission to law schools.—Five state university law schools and ten other university law schools are now requiring a degree for admission. Ten of the fifteen continue the combined course of six years in arts and law, and admit students who have completed the third year in arts in their own university, but require a degree of students coming directly from other institutions. Iowa joined this group last year. Wisconsin was already in it.

Our school should shortly make some change in its requirements. We now require two years of college work and three years of law study. The movement everywhere has been in the direction of more college work. No "day" law school requires more than three years of law study. Five years of study after high school could not be better apportioned, but there is considerable doubt that additional time should be given wholly to work in liberal arts. Our present law curriculum is as extensive as the time permits, but it is restricted to training for practice. No courses are offered in any of our law schools with the primary purpose of studying legal institutions in a critical and comparative way. Although our law graduates will be the judges and legislators of the future, no courses are provided to train them specially for these functions. It is important to determine whether some of the additional time should not be given to such courses. Our faculty has this matter under consideration and will present a report upon it within the next year.

Law School registration.—The Law School registration for the United States continues to increase. Significant numbers reported by the Carnegie Foundation are: 1919-20, 24,503; 1925-26, 44,269; November, 1926, 45,301. The attendance in Minnesota law schools is decreasing. It reached a maximum in 1921-22 of over 1,400 students, and was 934 last

year. The total registration in Canadian law schools in 1926 was 847.

Registration in the University Law School was 291, an increase of 2 over the previous year. Attendance appears to be stabilized, varying for the last eight years between 276 and 304. It will probably increase if college work is required for admission to the bar. The students are making better preparation; 70 per cent of the last entering class had three or more years of college work, against 43 per cent in the previous year, and 17 per cent seven years ago.

Faculty.—There were no resignations of full time members of the faculty since my last report. Edwin H. Chapman, instructor in practice, resigned. John F. Bonner and David E. Bronson were appointed instructors in practice. Homer B. Dibell and Bert Fesler continued their valuable services, rendered without compensation.

Law library.—The total number of volumes in the law library is now 46,213. There were 1,802 volumes purchased during the year. They included session laws of various states and some rare volumes of foreign law. Binding cost \$1,518.85, continuations \$4,405.88, and other additions \$4,587.39. The total amount available was \$11,565.16, of which part was carried over to meet obligations incurred but not matured.

Minnesota Law Review.—The *Minnesota Law Review* continues to prosper. The mailing list increased 160, to a total of 1,975. The State Bar Association members, to whom the *Review* is furnished by the association, made up 1,396 of the total. The *Review* has largely contributed to the growth of the association, the membership having doubled in five years. The year was financially successful.

Respectfully submitted,

EVERETT FRASER, *Dean*

THE MEDICAL SCHOOL

To the President of the University:

SIR: The Medical School has had a prosperous year. Again the number of students has taxed our facilities and staff. We are now graduating about one hundred twenty-five each year from the medical course. Fifteen years ago the graduating class numbered forty-five.

ATTENDANCE

By regents' action the number of regular freshman medical students is restricted to one hundred. These are chosen from three hundred or more applicants early in July of each year. However there is always a considerable number of worthy applicants who have small deficiencies and who cannot be regular freshmen under the rules of the school. To hold these back a full year would often work an injustice and serve no good purpose. They are therefore accommodated as unclassified students and given a special program. By attending the subsequent summer quarter they become regular sophomores and save a year's time. The sophomore class therefore numbers one hundred forty or more.

The school and the large body of irregular students are under obligation to Dr. C. J. V. Pettibone, secretary of the Students' Work Committee, for the excellent handling of the group of irregular students, a difficult and time consuming task.

When we come to the junior and senior years we try to hold to one hundred twenty-eight or sixteen sections of eight students in each c'ass, as the number who can be accommodated by present hospital facilities. Our seniors work at the University Hospital, Minneapolis General Hospital, Glen Lake Sanatorium, and next year we shall send them for obstetrics to the Ancker Hospital (hitherto used only for juniors). We owe much to these institutions and are greatly indebted to Dr. List, Dr. Mariette, and Dr. Carter, superintendents respectively of the affiliated hospitals named above, and to their managing boards.

It will be seen that we are taking care of well over five hundred undergraduate medical students—nearly the largest number in any medical school in the country. Besides this the Medical School in its larger sense as an administrative unit educates about four hundred nurses, trains a considerable number of technicians, social workers, dietitians, and embalmers, conducts (with the Extension Division) numerous short courses for physicians in practice, and finally, through its departments contributes to the education of dentists, physical education and home economics students, graduate students, and other university groups. The registration statistics of the Medical School, which will be found in the registrar's report, indicate therefore only partially the numerous activities of this branch of the University.

INTERN YEAR

The intern year as a requirement for the M.D. degree was first instituted by the University of Minnesota. The plan has been in operation over ten years now and has worked well. Our men get excellent internships all over the country. The Internship Committee has done important work in investigating the educational opportunities of hospitals and in placing our students. Dr. Litzenberg has been chairman from the inauguration of the required internship. Our debt to him is very large.

FACULTY

The faculty has been hard working and harmonious. Under the new and small Administrative Committee the details of management have been taken care of with a minimum of time and effort. No important faculty changes have been made. Promotions will be found listed in the president's report. The most important teaching change of the year was the organization of obstetrics and gynecology at the Minneapolis General Hospital on a university basis under Dr. Adair. This is a step in the direction of two university clinics in each major clinical subject. We now have two such clinics at the General, the other being medicine under Dr. Fabr. The policy is to organize and support these General Hospital clinics on the same basis and standard as those at the University Hospital.

Our faculty is increasingly called upon for addresses before scientific and medical gatherings. Notable trips during 1927-28 outside the country were those of Dr. Schlutz to the Argentine (as guest of the medical society there) and other South American countries, and to Havana; and of Dr. Berglund to Sweden.

RELATIONS WITH ALUMNI AND PROFESSION

A matter for congratulation during the year is the closer alliance with the alumni, brought about under the presidency of Dr. O. S. Wyatt of the Medical Alumni Association. The alumni banquet held June 13 during the meeting in Minneapolis of the American Medical Association was most enthusiastic. Over seven hundred graduates were present. This is reported to have been the largest gathering of Minnesota alumni ever got together, even exceeding any meeting of the General Alumni.

Under Dr. Wyatt's leadership plans are in making for an annual medical homecoming, with lectures and clinics as well as social features to bring back and interest our graduates. Dr. Wyatt's slogan is the "Alumni University." The Alumni Advisory Committee keeps in touch with the educational policy of the school and co-operates with the dean.

The school acknowledges its obligation to Dr. Wyatt for his devotion and intelligent work with the alumni, to Dr. N. O. Pearce for his service as chairman of the Extension Committee which conducts in co-operation with the state association increasingly valuable short courses for physicians at different centers, and to Dr. W. J. O'Brien for his important work for the doctors of the state. At the present time relations with the alumni

and the organized profession are good. There are still individual physicians who think there is ground for complaint—that the University Hospital and Dispensary take as charity patients those who are able to pay for services.

The first obligation of any hospital is to render service to the sick. The superintendent of the University Hospital and those working with him desire to work with the physicians of the state to the end that good medical service may be rendered to all citizens. Efforts to prevent abuses are constantly made. But no system of financial inquiry is perfect. There are always border line cases on which honest difference of opinion exists. It is believed that better acquaintance and frank co-operation between the hospital and the profession will permit the hospital to be broadly useful and minimize conflict of interest between private and public medical agencies.

It is to be recalled that the University Hospital has a double function. It cares for patients and thus serves the state. It educates doctors and nurses, which also is a duty to the state. In a broad sense each generation of physicians trains the next generation. A comprehensive view of this matter on the part of the whole profession in the spirit of the Hippocratic oath—"To consider dear to me as my parents him who taught me this art, . . . to impart to my sons . . . and the disciples who have enrolled themselves . . . the precepts and the instruction"—will always contribute to harmonious action between the medical school and the profession itself. In this connection it is surprising to remark how many sons of our alumni and of the other doctors of the state are now enrolled in our classes.

HOSPITAL EXPANSION

During the year the plans for the Eustis Children's Pavilion, the Out-Patient Building, and the Students' Health Building have been completed. Construction will begin in July.

The support of these units is a matter of concern. The Eustis will be partially supported by endowment; the Students' Health Service will be supported by fees. So far as the rest is concerned the chief source of revenue must be the law covering county-state indigent patients. This law is excellent, but it is not yet in perfect operation. The state's half is supposed to be in the general university appropriation, but the exact amount has not been defined. The counties' half was appropriated at \$100,000 for each year of the present biennium, but this is less than the counties will actually pay into the state treasury.

We favor the separation of both these items from the general university appropriations. This is justified on the ground that the hospital is a service enterprise, taking care of incapacitated, indigent citizens. The hospital should grow to the extent that the counties (which are the ultimate source of all the money) may desire to make use of its facilities. There is always a long waiting list which indicates such a desire on the part of counties. We think that separate appropriations should be made for

the estimated amount of the counties' payments and for an equal amount to meet the state's half. Toward the latter we believe \$100,000 per annum may be assumed to be already in the university appropriation. This should be segregated and given to the hospital by direct appropriation.

In addition to these special appropriations the hospital should receive a reasonable amount from university support on account of its educational functions. It is commonly agreed that the hospital can use its earnings from the small number of pay patients, Health Service patients, dispensary fees, etc. On the basis outlined the support and growth of the hospital can be assured.

THE MINNEAPOLIS GENERAL HOSPITAL

The plan for the removal of the Minneapolis General Hospital to the neighborhood of the campus and its establishment on land to be purchased by a gift from the General Education Board has been definitely abandoned. At the same time relations with the hospital have become increasingly intimate and cordial. The Welfare Board of the city takes a broad view of the relations of their institution to the education of doctors and nurses.

Mr. William F. Kunze of that board has proposed that the University take over the active management of the General Hospital at a nominal rental; that the University take care of the city's patients on a per diem basis; and that the University erect on the campus new hospital facilities as such may be needed to meet the growth of the city. In the course of years this plan would result in the concentration of the care of the poor of Minneapolis in the University Hospital on the same basis that the care of the poor of the state outside the large cities is accomplished. For the city the plan has the great advantage of avoiding a bond issue for a new hospital. For the University the plan envisages enlarged and controlled clinical facilities. It appears that this splendid ideal would appeal to philanthropic citizens, and that gradually the University would receive the necessary money for new units for its hospital just as the Elliot, Christian, Todd, and Eustis bequests have come in the past.

Mr. Kunze's plan has received a good deal of informal discussion. So far as known there are no formidable arguments against it. It is manifestly to the public interest both from the standpoint of the city and the state. It would contribute to the placing of the Medical School in the very front rank of such institutions. It is hoped it may be brought to conclusion in the coming year.

TUITION FEES

By vote of the Board of Regents Medical School fees have been raised from sixty dollars to seventy-five dollars per quarter. This is justified by the argument that prospective professional men should pay a larger share of the expense of their education. The increased receipts thus provided will strengthen the school in various places, an important one

being obstetrics in which we shall now be enabled to provide supervised teaching at the Ancker Hospital.

The reports of the superintendent of the University Hospital and the director of the School of Nursing are appended.

Respectfully submitted,

E. P. LYON, *Dean*

SCHOOL OF NURSING

The following report for the year July 1, 1927 to June 30, 1928 is submitted for the School of Nursing:

The statistical report for regular students is to be found in the registrar's report so is not given in detail here.

The report for students in the five-year course and for students affiliating from other schools of nursing in the state is as follows:

FIVE-YEAR COURSE IN ARTS AND NURSING

	1927	1928
In College of Science, Literature, and the Arts, and College of Education	38	48
In School of Nursing	32	44
Total registration in five-year course	70	92
Students receiving B.S. degree in combined course since June 1927-10.		

AFFILIATING STUDENTS (FROM OTHER SCHOOLS OF NURSING)

	1927	1928
Students in school on last report	80	75
New students since last report	42	53
Total registration	122	128
Students finishing course	42	67
Students cancelling	5	7
Present total	75	54

In order to make room for the regular students in the School of Nursing, the number of affiliating students to be admitted is steadily being reduced.

This year, for the first time, regular courses are being offered during the Summer Session in Administration in Schools of Nursing, and Ward Teaching and Supervision. Several outstanding people in the nursing field have been brought here to conduct these courses.

With the growth of the school, the need of a nurses' building is increasingly felt. The scattered housing of students at the University Hospital offers many problems and difficulties of administration, and the distance from the hospital is a real hardship for students, especially late at night and during the bad weather.

Respectfully submitted,
BARBARA A. THOMPSON, *Acting Director*

UNIVERSITY HOSPITALS

Attached is statistical report for the year 1927-28. We had an increase of 8,383 days over last year. The per capita cost was cut about forty cents a day.

During the year we have finished the plans, and are ready to start the addition including the Eustis Hospital, Out-Patient Department, and University Health Service, providing a total, including previous facilities, of 440 beds. There is an increase in the demand for beds in the hospital on the part of the counties, and there is no question but we will be able to make use of all beds provided a sufficient appropriation is made under the county-state act.

Work in remodeling the service building is progressing and should be finished by fall. This provides a laundry to serve the whole campus, new kitchens, dining rooms, new children's ward, and will furnish additional hospital space when the internes move into the new building.

The report of the Nursing Department is included in the report of the School of Nursing. During the year the National Committee appointed to study nursing education made its first report. It is of especial interest to the university hospitals, and it seems that we should make a careful study of our central school in connection with the findings of this report.

I again wish to call attention to the need for a nurses' home and hope we will use every possible means to bring about the building of such a home during the coming year. It is very unsatisfactory to have the nurses scattered as they are and the cost is excessive.

We should also renew activity in order to bring about the building of a psychopathic department of our hospital which was authorized by the legislature four years ago. This would serve as an admission unit to the various state hospitals and would add much needed teaching facilities for the Medical School.

We have arranged with the Home Economics Department to send their students to the University Hospital for training in dietetics. We are also paying part of the salary for a special worker in connection with the Department of Sociology to teach medical social work, and steps are being taken to bring about a more satisfactory arrangement between the Dental School and the Dental Department of the hospital.

The X-Ray Department is doing splendid work under the direction of Dr. Rigley. Dr. Stenstrom is making important studies in connection with X-ray, radium, and physical therapy. Foundations should be encouraged to provide an endowment fund for the Cancer Institute. Our physical plant makes it possible for us to take a very important part in the study of cancer, but we are handicapped for lack of funds.

The Out-Patient Department is carrying on very satisfactory work. The number of admissions has been slightly cut because of the careful investigation of applicants. We are endeavoring to carry on the work of the hospital in a way which is absolutely fair to the medical profession. The new Out-Patient Department should mean a great deal to the Medical

School, as the most important training is given in connection with ambulatory patients.

During the year the superintendent has visited many counties of the state in order to become acquainted with the medical profession. It is his purpose to visit all counties.

I wish to thank the heads of departments, employees, as well as the administration of the Medical School and University, for help and co-operation during the past year.

Respectfully submitted,

PAUL H. FESLER, *Superintendent*

(Statistical)

IN-PATIENT DEPARTMENT

	1926-27	1927-28
Patients in hospital at the beginning of the year....	202	246
Patients admitted during the year		
Private patients	55	105
Pay patients (including oto-laryngology).....	1,415	1,103
Free patients	778	690
General Hospital (county) patients.....	2,173	2,208
Totals	4,421	4,106
Patients treated during the year		
Private patients	54	104
Pay patients (including oto-laryngology).....	1,461	1,086
Free patients	736	747
General Hospital (county) patients.....	2,346	2,437
Totals	4,597	4,374
Total days' hospital care		
Private patients	655	1,003
Pay patients (including oto-laryngology).....	12,409	11,608
Free patients	9,905	9,881
General Hospital (county) patients.....	56,011	64,871
Totals	78,980	87,363
Average days per patient	17.18	21.03
Highest daily census	281	273
Daily average number of patients	216.36	239.34

OUT-PATIENT DEPARTMENT SUMMARIES

	1926-27	1927-28
New patients treated		
Day clinics	14,819	13,825
Night clinics	248	215
Totals	15,067	14,040

THE PRESIDENT'S REPORT

Total patients' visits made			
Day clinics	53,974	51,272	
Night clinics	6,920	7,391	
	<hr/>	<hr/>	
Totals	60,894	58,663	
Average visits per day			
Day clinics	304	168	
Night clinics	99	76	
Daily average: day clinics, 178; night clinics, 70.			
	<hr/>	<hr/>	
Total average per day, including day and night clinics	201	194	
Drug prescriptions filled	21,582	19,637	
Optical prescriptions			
Gratis	15	7	
Paid	760	706	
	<hr/>	<hr/>	
Totals	775	713	
X-ray requests			
Gratis	314	489	
Paid	2,787	2,153	
	<hr/>	<hr/>	
Totals	3,101	2,642	

COST OF OPERATION

	1926-27	1927-28
Total cost of operation		
In- and Out-Patient depart- ments	\$304,364.14	\$304,977.85
Clinical salaries	31,377.00	31,800.00
	<hr/>	<hr/>
Totals	\$335,741.14	\$336,777.85
Less Out-Patient Department	\$45,016.79	\$41,782.81
Social Service Dept....	12,545.27	12,169.84
Capital expense items...	19,261.91	15,004.96
Salaries chargeable to non-hospital depts....	1,800.00	1,800.00
	<hr/>	<hr/>
	78,623.97	70,757.61
	<hr/>	<hr/>
Less Clinical salaries hospital	\$257,117.17	\$266,020.24
	18,277.00	18,300.00
	<hr/>	<hr/>
Actual cost of operation	\$238,840.17	\$247,720.24
Plus Salaries charged to Out- Patient Department but belonging to hospital (pharmacy)	1,050.00	1,050.00
	<hr/>	<hr/>
Total In-Patient Dept...	\$239,890.17	\$248,770.24
Patient days	78,980	87,363

PER CAPITA COSTS

Per capita costs based upon total expense for year.....	\$3.85
Per capita costs excluding dispensary, social service, and capital expense.....	3.04
Per capita costs less above and clinical salaries.....	2.66
Per capita cost dispensary (including social service).....	.89

THE UNIVERSITY HEALTH SERVICE

To the President of the University:

SIR: I have the honor to submit herewith the following report of the activities of the Students' Health Service for the year 1927-28.

General statement.—The Students' Health Service of the University of Minnesota has just completed its tenth year of activity. During this period the department has developed from a small service which was caring for emergencies and students acutely ill, and with a staff of 1 full time physician and 4 or 5 part time physicians to a department whose chief activities are preventive and educational in character and whose staff consists of 7 physicians devoting full time to the Students' Health Service and Department of Preventive Medicine, 22 part time physicians, and 8 dentists. The purpose of the service is to promote the general health and physical welfare of the students by reducing to a minimum their illnesses and physical disabilities, by discovering and assisting them in the correction of physical defects, and by instructing them through practical demonstrations as to what can be accomplished in the field of health conservation and disease prevention.

The Students' Health Service requires of every student who enters the University a complete physical examination; a dental examination is given at the time of matriculation and at such subsequent periods as students may desire; health examinations are provided for all seniors; a certification of physical fitness is required of all students who wish to participate in intercollegiate athletics; preventive vaccinations and inoculations may be obtained at any time; medical consultation and advice is available to students at all hours of the day; a psychiatrist is now devoting his full time to consultation with students about their personal problems and worries; the food handlers in university cafeterias are examined in order to be certain that they are not infected with diseases that may be transmitted to others; the water of the swimming pools is analyzed frequently, and the general sanitation of the campus and rooming houses is supervised.

Health instruction.—Although the medical care of sick students and the correction of certain physical defects is a vitally important part of the Health Service activities, unquestionably the greatest value of the work of this department is educational, in that it teaches students to correct physical defects, to obtain periodic health examinations, to live hygienically, and to seek medical attention promptly when they become ill.

Professional staff.—As the scope and the volume of the work of the Health Service have increased the staff has been enlarged and strengthened until during the past year it has consisted of 29 physicians, 8 dentists, 9 nurses, 1 laboratory and X-ray technician, 1 pharmacist, 3 dental assistants, and 1 business manager. Of the physicians 7 devoted their entire time to the Health Service and the Department of Preventive Medicine and Public

Health, and the other 22, for the most part specialists in various phases of medical practice, devoted part of their time to the Health Service and the rest to private practice. The total hours spent in health service work by these various full time and part time physicians would equal the full time service of approximately 12 physicians. The group of physicians on part time was made up of specialists in internal medicine, surgery, orthopedics, genitourinary diseases, dermatology, diseases of the chest, diseases of the eye, ear, nose, and throat, mental and nervous diseases, physiotherapy, gynecology, and corrective exercises and gymnastics. All of the dentists devoted about half time to the Health Service and about half time to private practice. The rest of the staff is on a full time basis with the University.

Entrance physical examinations.—To every student who enters the University the Health Service gives a complete, thorough physical examination. Subsequent examinations are required of medical students, members of the Reserve Officers Training Corps, and candidates for athletic teams.

Periodic health examinations.—Encouraged by the auspicious beginning made last year, health examinations were continued this year and the service extended to approximately 50 per cent more students than we were able to examine during the year 1926-27. With more adequate quarters it will be possible to extend this valuable service to a still larger proportion of the student body.

Medical service.—The services of the physicians and nurses are available at all times at the several Health Service dispensaries and hospitals. To these institutions any student may come for medical care and advice. The staff also will make calls upon students at their rooms when necessary.

Dispensaries.—Medical out-patient departments exclusively for students are located on the main campus, on the agricultural campus, at Morris, and at Crookston.

Student infirmary.—Infirmarys for the care of students are maintained in close connection with the out-patient dispensaries. This arrangement seems essential for the efficient administration of a students' health service, for when a student who should go to bed is seen in the out-patient department, it should be easy to put him there. Early hospitalization minimizes the danger of communicable diseases spreading throughout the university community and frequently prevents the development in the individual of serious complications from relatively insignificant primary infections. In order that this may always be practiced there is a standing rule of the Health Service that any student with a temperature of 100° F. or more shall be put to bed. If such a student lives in Minneapolis or St. Paul he usually wishes to go home, but if he lives in a rooming house or dormitory he is admitted to the students' infirmary.

Mental hygiene.—It has been possible during the past year to expand most satisfactorily the mental hygiene service which was begun several years ago and in which so much interest has been developed.

Respectfully submitted,

H. S. DIEHL, *Director*

THE COLLEGE OF DENTISTRY

To the President of the University:

SIR: I submit herewith the report of the College of Dentistry for the year 1927-28.

Curriculum.—Under the recently adopted 2-3 plan of dental education all students matriculating since September, 1927, have been required to present a minimum of ninety quarter credits or two years of pre-dental work for admission. This arrangement brings a more mature, better prepared student into the College of Dentistry. The professional curriculum has been modified to complete the course in three years instead of the four years which have been required in the past. As the classes progress in the new course some conclusions will be reached regarding the efficiency of the so-called 2-3 plan of dental education.

Research work.—Active research is being carried on by a number of the faculty and progress is being made on several problems as follows. Those which have been published during the year are:

An Investigation of Dental Pathology and Its Relation to the Loss of Human Teeth, by Dr. P. J. Brekhus.

The Controlling of Variables in the Casting Process, by Dr. H. A. Maves.

Those which have not been published, but which are being worked on: *Comparative Measurements of Arikara and Hopi Skulls with Special Reference to Dentition and Related Problems*, by Dr. G. A. Montelius.

Total Chloride Content of the Saliva As an Index to Dental Caries, by Dr. H. A. Wahlquist.

Further Work on the Pathology and Classification of Tumors of the Mouth and Jaws, by Dr. C. W. Waldron and Dr. H. G. Worman.

Teaching facilities.—Improved facilities for teaching have been made, especially in Diagnosis and Oral Surgery. Lantern slides, microscopic slides of pathological specimens, and teaching models have been added in all departments of the college work.

Library.—Mention should be made of the excellent facilities for dental students provided by the collection of 50,000 books kept in the biological-dental-medical division of the General University Library. Every creditable dental periodical and published books are available for students' use.

Dental clinic.—A sufficient number of patients have registered in the clinic to meet the teaching needs of the college.

Number of patients registered in 1927-28.....	6,050
Number of visits in 1927-28 (estimate).....	70,000
Number of dental chairs in use.....	130

Dentistry as a health service is being emphasized. Proper diagnosis and treatment of each case, children's dentistry, orthodontia, and preventive dentistry are given careful attention. The fifty-six graduates of June, 1928, who took the State Board Examinations in Minnesota, North Dakota, and Idaho have passed and received licenses to practice.

Extension courses.—Co-operating with the state and local dental associations and with the General Extension Division of the University, five short courses have been conducted during the year. Courses will be offered during the coming year. Practitioners are availing themselves of the opportunity offered them by the College of Dentistry to obtain instruction in the latest methods of clinical dentistry in a more satisfactory manner and at a lower cost than was formerly offered to them by private enterprises. In fact, the university short courses have taken the place of the private short courses of questionable value in this section of the country.

Faculty activities.—Members of the faculty have been unusually active in American Dental Association work, also state and local. Clinics and lectures have been given in a number of states and Canada on oral surgery, crown and bridge work, prosthetic dentistry, and other dental subjects.

School for Dental Hygienists.—Increased enrolment indicates that there is a demand for the graduate dental hygienist. The two-year curriculum has been put on a sound academic basis and aims to prepare graduates for educational work in schools, public institutions, and private offices. Better laboratory and teaching facilities have been provided this year. The eighteen graduates of June, 1928, have successfully passed the State Licensing Board.

Respectfully submitted,

W. F. LASBY, *Acting Dean*

THE SCHOOL OF MINES AND METALLURGY

To the President of the University:

SIR: I herewith submit my report for the university year 1927-28.

Curriculum.—Only a few minor adjustments have been made in the curriculum.

Attendance.—An increase in enrolment was not unexpected. Operators are continually asking us to recommend young graduates for positions. The school is unable to meet these requests. Thoughtful students are beginning to realize this fact and that responsible and good paying positions are open to those who are well trained and willing to serve.

The school ranks very high in the estimation of the mining professions, but it is very difficult to interest in our school prospective students who need financial assistance. Institutions in neighboring states have at their disposal a comparatively large number of scholarships carrying stipends which are of material assistance to those who find it difficult to earn the necessary funds for an expensive technical education. The number of withdrawals from the school for financial reasons again shows an increase, amounting this year to 47 per cent of those who withdrew. As mentioned in my report of one year ago, it was formerly about 15 per cent.

SCHOOL OF MINES EXPERIMENT STATION

Mr. E. W. Davis, superintendent of the School of Mines Experiment Station, reports as follows:

In addition to the State Service work carried on under Mr. Wade's direction, we have been conducting experiments in connection with metallizing and direct reduction of iron ore in our experimental department, which is under the direction of Mr. Craig. This experimental work was provided for by the last legislature through special funds amounting to \$33,000.00 per year. The technical staff in connection with this investigation consists of Mr. Craig, Mr. Wallfred and Mr. Firth. In addition to these men, fifteen or twenty men are employed consisting of mechanics, operators and common laborers. Progress has been made to a point where we are beginning to make some effort to get this method into commercial operation. The work has taken the direction of reverberatory smelting and we have had reverberatory and open-hearth furnaces operating almost continuously night and day at the Station for the past year. During this time we have made approximately 150,000 pounds of metal from Minnesota ores, which include hematites, magnetites and manganiferous iron ores. We have made considerable progress during the past year, especially along the line of producing metal from the ore. There still remains an exceedingly large amount of research work to be done in connection with the production of metal of the desired chemical analysis. In other words, in the next year we expect to spend much time in connection with the control in the metal of sulphur, phosphorus, carbon, silicon, titanium and manganese.

Activities.—Attention is called to the fact that much of the time of the staff of the Mines Experiment Station, which is normally working on state service work, has been spent in connection with research activities. Also, during the past year, a portion of the laboratory has been used by the Bradley-Fitch Company on a special research problem of "Leaching Cuyuna Range Manganiferous Iron Ores."

Activity	1926-27		1927-28	
	No.	Gross Wt.	No.	Gross Wt.
a. Large scale tests ($\frac{1}{2}$ ton or more).....	14	143 tons	15	281 tons
b. Small scale tests (less than $\frac{1}{2}$ ton).....	11	1,875 lbs.	8	1,085 lbs.
c. Samples submitted for assay and examination	321		233	
d. Samples referred to other departments....	5		7	

Assays.—The total number of assays made in connection with all work in the Mines Experiment Station the past year was 22,201.

Publications.—*Mining Directory of Minnesota for 1928.*

UNITED STATES BUREAU OF MINES

The co-operative agreement between the United States Bureau of Mines, Department of Commerce, and the Mines Experiment Station of the University continued during the year. The Bureau Station is known as the North Central Station of the United States Bureau of Mines and is located on the campus of the University. Mr. T. L. Joseph, supervising engineer of the station reports as follows:

The regular staff of the North Central station of the Bureau of Mines consists of six technical men, two skilled laborers and one clerk. Its activities have centered around problems arising from the domestic manganese situation and general blast furnace studies.

The development of ways and means to use Minnesota manganiferous iron ores in producing ferromanganese, an alloy indispensable in making steel, is important to the country at large as well as to Minnesota for reasons as follows: (1) Ferromanganese, known generally as ferro, and containing 80% metallic manganese, is indispensable in making steel which is of basic importance to our industrial life; (2) domestic deposits of ore which can be used to make ferro without preliminary treatment are small, widely scattered, and in the aggregate not commensurate with our steel industry; (3) any disposition on the part of foreign countries to restrict exportation of manganese ore, upset ocean transportation, or monopolize foreign deposits might place the country in embarrassing circumstances unless some of our low grade deposits can be used as a threat against arbitrary prices; (4) in times of war our national defense would be materially weakened by lack of manganese; (5) large tonnages of Minnesota manganiferous iron ore, readily available by open-pit mining, can be forwarded to Eastern steel centers by lake transportation; (6) due to the iron content of these ores they can be treated in metallurgical furnaces regularly used in producing steel, the manganese by proper modifications being recovered as a by-product. No lapse of time to install new plants or processes would be necessary.

Definite progress was made the past year on a method to make ferromanganese from Minnesota ores, starting with an ore containing about 8% manganese and about 40% iron, a rich manganese slag containing 40 to 50% manganese and suitable amounts of iron, phosphorus, and silica has been produced in small blast furnaces and open-hearth furnaces. Efforts during the past year have been concentrated on obtaining suitable proportions of iron and manganese and small amounts of phosphorus and silica, all of which determine the quality of the slag for use in making ferro.

As is often the case in high temperature metallurgical processes refractories place definite limitations on the operation. Refractory linings made either of chrome brick or magnesite brick have proven satisfactory because lining corrosion is small with little contamination of the slag with refractory oxides.

Control of iron and phosphorus has been accomplished in numerous small-scale tests by adding coke to the furnace prior to tapping. In fact it has been possible in small-scale tests to produce a product which meets all the requirements of ferro grade ore.

Future work will be devoted to increasing recoveries and speed of operation, factors affecting the commercial application of the process.

Blast Furnace Studies: Pig iron, worth about three-quarters of a billion dollars, is produced annually in this country and yet many data, fundamental to the operation, are entirely lacking. For example, from 1,600 to 1,800 tons of iron ore, 500 to 600 tons of limestone, and 600 to 800 tons of coke are moved during twenty-four hours through a vertical shaft counter-current of about 100 million cubic feet of gas. Although proper preparation of raw materials before reaching the refining portion of the furnace depends upon efficiency of gas-solid contact, data in literature on the control of gas-solid contact are meager, and experimental work undertaken has been limited in scope and has been applicable only to particular conditions. A fundamental study of the resistance which various sizes of ore, coke, and limestone offer to the flow of gases was completed. All sizes encountered in practice were covered in the investigation. With the data acquired the size distribution can be determined from the gas distribution or vice versa. Exploration of the shafts of seven commercial furnaces by a Bureau investigator has shown uneven gas flow, temperatures, and gas composition.

In 1924 the Bureau advocated sizing of ore to increase gas-solid contact in the shaft. This has led in one plant to a saving of slightly less than one-quarter of a ton of coke per ton of pig iron and an increase of about 100 tons of pig iron per day. This represents a daily saving of about 100 tons of coke and a substantial decrease in "cost above raw materials." Although Mesabi ore is too fine to separate into sizes, the Bureau is studying the possibilities of sintering and sizing, a matter now receiving some consideration by the industry.

Early Strength Cements: By small-scale tests the Bureau has demonstrated that aluminous cements, characterized by quick-setting properties and developed during the World War for gun settings, can be made in the iron blast furnace from bauxite and limestone. Iron in the bauxite can, under proper conditions, be recovered as low sulphur metal or by adding iron ore or scrap to the charge substantial quantities of iron ore can be made with the slag which, upon grinding, constitutes quick-setting cement.

MINNESOTA TAX COMMISSION

Object.—The School of Mines and Metallurgy still continues its service to the State Tax Commission. The ore estimates, as checked and submitted, are used as a basis for the valuation of mineral properties in the state of Minnesota.

Services.—Owing to the fact that our report to the Tax Commission is made biennially, and as the statement for the biennial period 1926-28 is not due until September 1, 1928, no detailed account will appear herewith.

The hearty co-operation of the officials of the various mining companies is evidence of the cordial relations existing. Many expressions of appreciation of this branch of service to the state come to us, both from the Tax Commission and the mining companies, and are a source of considerable gratification.

Respectfully submitted,
W. R. APPEBY, *Dean*

THE COLLEGE OF PHARMACY

To the President of the University:

SIR: I beg leave herewith to submit the College of Pharmacy report for the year 1927-28.

Registration.—The registration reached a total of one hundred fifty. During the year sixteen students withdrew from the college for reasons which have been reported to the registrar and are on record in his office.

Geographical sources of the freshmen.—Compilation may be had from my office.

Scholarship prizes.—The fifth Lehn and Fink Gold Medal for the highest general standing at the end of the four-year course, was awarded to Miss Bessie Weiner of Minneapolis.

Miss Rose Weirnerman of St. Paul won the Minnesota State Pharmaceutical Association annual scholarship prize of \$105 for the payment of next year's tuition. The prize is awarded annually for the highest general average in all subjects of the first and second years.

Changes in curriculum.—The courses having been fairly well standardized for a number of years now, no changes other than minor ones incidental each year to the best kind of work, were made without effect, however, upon the credit value of any course. The making of the former optional four-year course the obligatory minimum course for the lowest degree in pharmacy seemed to require, for the best functioning of the course until it will have been established, giving students who come directly from high school the opportunity of carrying some academic and technical work concurrently during the first two years. Accordingly and with the co-operation of the College of Science, Literature, and the Arts, the college offered for the first time an outline of subjects that students could carry for the first two years of the four-year course without detriment to either the academic or technical content of the course. The courses of these first two years are called "combined courses." One year has now passed and the experience gained points away from entire success and it is likely that it will be much better to require students to complete the academic prerequisites before entering upon the technical work in pharmacy. Another year's experience will suggest the right procedure then.

Pharmaceutical research.—Somewhat more than the usual amount of research was carried on by the faculty. The research which the college is doing received recognition during the year by being included in the publications of the Pharmaceutical Research Council. The most important piece of research started during the year includes joint work by the Departments of Pharmacognosy and Pharmaceutical Chemistry and concerns itself with the effect of propylene upon medicinal plant growth.

The new minimum degree basis.—It is now certain that the four-year minimum degree course will become generally accepted. (All that I said in my last year's report under this subheading could be repeated here.)

Building and equipment needs.—The college did not press its need of larger quarters because it thinks it would be better economy to await further progress in the development of the four-year course. The heavy enrolment of the past few years was due it is believed in an appreciable measure to anticipation of the four-year course. As many as could do so entered the college while they could on the three-year basis.

Medicinal plant garden.—The original site of the medicinal plant garden was vacated last fall to make room for the Northrop Memorial Auditorium and the former botanical grounds and greenhouses on University Avenue were taken over and development of medicinal plant culture there is already well started. By an arrangement approved by the president certain portions of the greenhouses are to be used under an expressed understanding for a short time by Plant Pathology. With the approval of the president and with an appropriation of about \$400 granted by him to the Department of Buildings and Grounds, the department converted portions of the University Avenue greenhouse wings into slat houses for the cultivation of shade-requiring drug plants.

The old medicinal plant garden seems to have grown into the hearts of many persons and many regrets were expressed when it had to be abandoned. It appears that not a few people were in the habit of frequently spending an hour or more in the pleasant atmosphere of the garden. President Folwell and Miss Folwell were among such.

A considerable area of the garden immediately south of the Pharmacy Building had to be surrendered because of the erection of the new Law Building.

The Division of Drug and Poisonous Plants of the Department of Agriculture at Washington, D.C., made another survey of medicinal plant gardens and again placed our garden at the head of the list as they did when the first survey was made.

Pharmaceutical educational exhibit.—The Board of Trustees of the United States Pharmacopoeial Convention requested the college to represent it at the 1928 meeting of the American Medical Association in the Municipal Auditorium in Minneapolis June 11 to 16. With the president's approval an exhibit was prepared and conducted with such success that the college was awarded a special certificate of merit "for the best exhibit in the educational classification, Minneapolis session, 1928." The special certificate was awarded and presented by the American Medical Association Committee on Awards.

It is my understanding that while the college nearest to the American Medical Association's annual meeting has exhibited for many years now this is the first time that the distinction involved in the award has been earned and that it is a distinct honor to be thus recognized by the American Medical Association.

University Free Dispensary.—The co-operation of the free dispensary prescription department with the dispensing department of the college continued cordially and satisfactorily. The dispensary prescription room dispensed a total of over 21,000 prescriptions, a large number of which were dispensed by seniors under competent instruction and direction.

Service to other university departments.—The college continued its usual services of supplying the Hospital, Free Dispensary, Health Service, Dental College, Pharmacology Department, University Farm Veterinary Department, Institute of Child Welfare, and the Crookston and Morris stations with medicinal supplies and preparations of its own manufacture. The demand for this kind of service was somewhat less than in previous years, but the demand for digitalis produced by the college increased somewhat, especially for digitalis lutea.

Respectfully submitted,

FREDERICK J. WULLING, *Dean*

THE COLLEGE OF EDUCATION

To the President of the University:

SIR: I have the honor to report as follows for the College of Education for the year 1927-28:

SPECIALIZED CURRICULA

In recent years there has been a distinct tendency to organize specialized curricula in the College of Education leading to specific types of public school positions. The new bulletin for the year 1928-30 announces such curricula designated for the following types of educational work:

Agricultural Education	Nursery School Education
Art Education	Nursing Education
Clinical Psychology	Occupational Therapy
Commercial Education	Physical Education for Men
Educational and Vocational Guidance	Physical Education for Women
Educational Psychology	Public School Music
Elementary School Principalship	School Health Work
Elementary School Supervision	Social Studies Teaching
Elementary School Teaching	Superintendency of Schools
High School Principalship	Teacher Training in Elementary Education
Home Economics Education	Teaching of Subnormals
Industrial Education	Visiting Teachers' Work
Natural Science Teaching	

Since teachers preparing to teach academic majors are required to meet certain specifications both in regard to major subject and to educational courses, it is obvious that all training for academic teaching falls under the head of specialized curricula. It thus appears that the old type of curriculum in "education in general" has in substance disappeared from the College of Education offering.

PROFESSOR PEIK'S STUDY

It is a pleasure to report that the analysis of the required courses in education undertaken several years ago by Professor Peik has been brought to a conclusion. This study is a comprehensive one involving both a detailed analysis of the professional offerings and an evaluation of all items which enter into the training program. This study, which it is believed is the most detailed and comprehensive study ever made of a college curriculum will be of inestimable use to the faculty in the improvement of our requirements in the training of educational workers.

STUDENT PUBLICATIONS

In the spring of 1927 the students of the College of Education adopted a constitution to provide for a Board of Publications. This board is composed of two members of the college faculty and eight students. It is responsible for appointing the business manager and managing editor

of the student publication, the *Minnesota Mentor*. Under the direction of these two officials the *Mentor* was issued three times, once each quarter during the year. It has been well received by both students and faculty, and bids fair to become an important agency in the building up of a professional spirit among College of Education students.

THE COFFMAN FOUNDATION

For the first time in its history, the Coffman Foundation has been able to provide a scholarship from its income. Such a scholarship in the amount of \$100 was provided for the year 1928-29 to be awarded to an outstanding member of the senior class who desired to pursue graduate work in education. The award for the year 1928-29 was made to John M. Jacobsen.

BUREAU OF RECOMMENDATIONS

The College of Education is a professional school. The training of students is directed toward skill in some form of educational work. Because of this the activities of the Bureau of Recommendations in assisting graduates to secure satisfactory placement is a matter of major importance. Placement of young teachers has become more difficult in recent years because of the larger number graduating not merely from the University of Minnesota, but from other colleges in this and other states. It appears also that the years of employment of teachers are increasing, so that desirable vacancies occur less frequently than was true some years ago. Notwithstanding these handicaps placements by our Bureau of Recommendations have been more satisfactory than was anticipated in the early months of the year. A total of 630 persons have secured positions while registered in the bureau. In a small number of cases the bureau was not active, inasmuch as the position was secured by personal application, but the major portion of placements is to be credited to the work of the bureau. Relatively few prepared teachers are still without positions, and these, mainly in a limited number of fields of training.

Registration in the bureau is voluntary and requires a payment of a three-dollar fee. During the year 1927-28, 894 registered in the bureau. Of this number 504 had received the degree from the University of Minnesota between July 1, 1927 and June 30, 1928. The additional 390 were teachers of experience, seeking through registration in the bureau to advance the character of their employment. From this total registration the University received \$2,682 in fees.

UNIVERSITY HIGH SCHOOL

By action of the Board of Regents during the year the College of Education was authorized to add two years, grades seven and eight, to the program of the University High School. Under this authorization it is planned to reorganize the high school into a junior-senior high school. In connection with this authorization the fees of the University High

School were increased to \$15 per quarter, this increase to be operative at the beginning of the year 1928-29 for the two added years and for the entire high school at the opening of the year 1929.

PERSONNEL WORK

In pursuance of reorganization plans arrangements have been made to accept pupils for grades seven and eight in September, 1928. Four additional teachers have been employed, alterations have been made in the buildings, and a new curriculum has been planned. Due to co-operative arrangements with the Institute of Child Welfare it has become possible to engage two psychologists to develop a personnel service for the University High School. The work planned for the year is largely a program of research, but it is expected that a permanent arrangement for the high school will eventuate.

BUILDINGS

The adjustments made during the year do not adequately meet the needs of this college as was set forth in a memorandum prepared at your request of May 9, 1928. The essential items in this memorandum are as follows:

THE ITEMS OF A SATISFACTORY BUILDING PROGRAM

It is the purpose of this memorandum, first of all, to indicate in outline the type of space provisions which are necessary to a proper development of a professional college of education. In our judgment a satisfactory program must have regard to the following three things:

1. *A College of Education Building.*—The primary need of the college is a building in which can be housed all those instructional and research departments and laboratories primarily concerned with the study and teaching of education. The arguments for bringing those departments into close relationship within the same building are fairly obvious, and our faculty are, it is believed, unanimous as to the desirability of this kind of unification of teaching and research departments. In such a building space should be provided for the following:

- a. Administrative offices for the college adequate to care for 3,500 students. Already our enrolment is more than 2,000.
- b. The offices of all the faculty teaching education.
- c. Laboratories for the experimental study of education.
- d. The Bureau of Educational Research, with space provisions for clerical work, research equipment library, and editorial facilities, etc.
- e. Classrooms for all education classes except such as require facilities more economically shared with other university departments.
- f. Space for such student activities as are peculiar to students in education.
- g. The Bureau of Recommendations, with adequate space for the work of the office and provisions for conferences between school superintendents and other employing officials and candidates for positions.

2. *The Junior-Senior High School Building.*—The second need of the College of Education is one which has been long recognized by the

Board of Regents and which has, to some degree, been met over a period of years. Reference is here made to a laboratory school of junior-senior high school level for the purposes of student teaching and for experimental work in matters of curricula, instruction, and administration. The needs of a building for this purpose, and the inadequacies of the present provision are set forth in the attached memorandum from Mr. Boardman, principal of the University High School, under whose direction the present plant is now operated. It may be merely noted here that the university administration has long known that the present high school building does not meet the minimum standards set by the Minnesota State Department of Education for a high school building in this state, or the standards generally enforced for similar buildings throughout the country. Thus falling short of the minimal requirements of a high school building, it is clearly much less adequate for the purposes of a laboratory school in a modern professional college of education.

3. *Experimental Elementary School.*—The third item in a building program is an experimental elementary school comprising grades from the kindergarten to include the sixth. The importance of this building unit was long ago recognized by the Board of Regents by its inclusion in the comprehensive building program in 1919. It is, therefore, not necessary to repeat here the arguments for it.

Respectfully submitted,

M. E. HAGGERTY, *Dean*

THE GRADUATE SCHOOL

To the President of the University:

SIR: I submit herewith the report of the Graduate School for the year 1927-28.

CLASSIFICATION ACCORDING TO DEGREES APPLIED FOR

Master of arts.....	935
Master of science.....	596
Engineering degree	29
Master of laws.....	3
Doctor of philosophy.....	420
No degree desired.....	83
	2,066
Total	2,066

CLASSIFICATION ACCORDING TO RANK

Graduate Students Holding Appointments on University of Minnesota Staff	
Professor	1
Associate professor	1
Assistant professor	17
Instructor	119
Teaching fellow	95
Assistant	105
Mayo Foundation fellow.....	299
Scholar	10
	647
Total	647
Graduate students not holding staff appointments...	1,419
	2,066
Grand total	2,066

GRADUATE STUDENT'S ACCORDING TO MAJOR DEPARTMENT FOR YEAR 1927-28, INCLUDING SUMMER SESSION OF 1927 AND MAYO FOUNDATION FELLOWS

Agricultural Biochemistry	36	Engineering	
Agricultural Economics	28	Chemical	18
Agricultural Education	19	Civil	8
Agronomy and Farm Management..	19	Electrical	14
Anatomy	24	Mechanical	9
Animal Husbandry	6	Structural	3
Anthropology	3	English	176
Architecture	3	Entomology	16
Bacteriology and Immunology....	14	Forestry	12
Biophysics	3	Geography	6
Botany	28	Geology	13
Chemistry	55	German	17
Child Welfare	38	Greek	2
Comparative Literature	7	History	120
Comparative Philology	1	Home Economics	51
Dermatology	8	Horticulture	3
Dairy Husbandry	16	Journalism	3
Economics	51	Latin	15
Education	218	Law	3
Educational Administration	230	Mathematics	32
Educational Psychology	64	Medicine	96

THE PRESIDENT'S REPORT

Nervous and Mental Diseases.....	2	Plant Pathology	26
Neurology	4	Radiology and Roentgenology.....	6
Metallography	2	Preventive Medicine and Public Health	5
Mines	1	Psychology	39
Obstetrics and Gynecology.....	13	Proctology	1
Ophthalmology and Oto-Laryngology	28	Romance Languages	44
Orthopedic Surgery	5	Scandinavian	1
Pathology	20	Sociology	57
Pediatrics	16	Soils	4
Pharmacology	4	Surgery	141
Philosophy	10	Urology	10
Physics	41	Zoology	44
Physiology and Physiologic Chemistry	18		
Plant Breeding	12	Total number of students.....	2,066
Political Science	29		

FOREIGN STUDENTS REGISTERED DURING 1927-28

Armenia	1
Canada	2
China	3
Czecho-Slovakia	1
England	5
Philippine Islands	10
Germany	7
Ireland	1
Italy	9
Mexico	1
Porto Rico	1
Russia	3
South Africa	2
South America	1
Switzerland	1
Wales	1

DEGREES GRANTED

Master of arts.....	94
Master of science.....	52
Doctor of philosophy.....	48
Civil engineer	3

Total number granted..... 197

GRADUATE STUDENTS ACCORDING TO AMOUNT OF WORK REGISTERED FOR—SUMMER 1927 AND YEAR 1927-28

	Men	Women
Registered full time 1927-28.....	314	123
Registered part time 1927-28.....	500	145
Registered full time summer 1927.....	260	159
Registered part time summer 1927.....	126	140
Registered full time Mayo Foundation.....	284	15
Totals	1,484	582
Grand total		2,066

APPROPRIATIONS FOR RESEARCH, 1927-28

Anderson, William, research assistance and supplies in connection with Northwest Regional Survey.....	\$3,350.00
Beyle, H. C., research assistance in connection with study entitled "The Detection of Blocs in the Minnesota Senate".....	100.00

Buck, S. J., research assistance in connection with bibliography of Minnesota newspapers	\$ 200.00
Burr, Geo. O., supplies and research assistance in connection with investigations centering around respiration and growth.....	200.00
Cooper, W. S., studies of sand dunes of the Pacific Coast and their vegetation, and the anatomy and physiology of certain endemic trees of the Monterey region.....	200.00
Emmons, W. H., study of ore deposits and their relation to their parent igneous intrusions, i.e., deposition of the primary ore deposits and primary downward changes in ore deposits.....	400.00
Erikson, H. A., supplies and research assistance in connection with project dealing with nature of gaseous and liquid ions.....	600.00
Folwell, W. W., research assistance in connection with writing of Minnesota history	500.00
Grout, F. F., research assistance in connection with study of rocks of northeastern Minnesota	600.00
Harris, J. A., research assistance and supplies in connection with project dealing with mathematical biology and physicochemical properties of plant tissue fluids	500.00
Heidbreder, Edna, supplies and clerical assistance in connection with project in field of mental hygiene. The special subject-matter is called "inferiority complex"	300.00
Hunter, W. H., research assistance in connection with investigation of the single potentials of various cathodes with various organic depolarizers	300.00
Jenks, A. E., research assistance in connection with study of 57 Finnish men and 52 Finnish women.....	200.00
Lind, S. C., investigation of the relation between photo and alpha ray reaction of hydrogen chlorine, particularly with respect to the temperature coefficient of the reaction and the influence of the chlorine concentration	300.00
Riley, Wm. A., two tables at Woods Hole, Massachusetts.....	150.00
Schwartz, G. M., supplies and assistance in connection with microscopic investigation of iron ore sinters with a view of determining the fundamental changes involved.....	200.00
Stauffer, C. R., research assistance and supplies in connection with new species from the Devonian of southwestern United States and study of local paleozoic fauna.....	400.00
Thiel, G. A., research assistance in connection with project embracing observations and experimental tests bearing upon biochemical activity of micro-organisms as geologic agents.....	200.00
Tilden, J. E., photographic work and drawings in connection with research project	150.00
Van Wagenen, M. J., clerical assistance and supplies in connection with project to show relation between initial ability, reading ability, and general intelligence to both final ability and gains in achievement made by students of animal biology during the two-semester course. Also supplies in connection with project to determine reading ability of native German pupils and high school and college German students in this country.....	550.00

APPROPRIATIONS FOR RESEARCH FROM MEDICAL GRANT,

1927-28

Adair, F. L., causes of foetal and prenatal mortality.....	\$1,000.00
Bell, E. T., problems on nephritis and hypertension (with Doctors Clawson, McCartney, Fahr, Zierold, Camp, et al.).....	1,400.00
Berglund, H., biochemical-medical investigations (with Doctors Medes, Wright, Wahlquist and Watkins).....	2,700.00
Diehl, H. S., study of blood pressure of college students.....	500.00

Greene, R. G., purchase of animals and equipment for study of encephalitis	\$1,000.00
Harris, J. A., and Scammon, R. E., investigations on the new-born infant	500.00
Henrici, A. T., morphology and life cycles of bacteria	400.00
Hirschfelder, A. D., colloidal properties of antiseptics, experimental tumors	1,150.00
Jackson, C. M., physical basis of vital capacity (with Dr. Lees)	750.00
Jackson, C. M., maintenance of rat colony for experiments (with Dr. Burr, et al.)	2,200.00
McClendon, J. F., colloidal properties of living cells	600.00
McKinley, J. C., and Larson, W. P., immunization against poliomyelitis	5,000.00
Myers, J. A., study of tuberculosis in childhood	500.00
Rasmussen, A. T., investigation of hypophysis and vestibular mechanism	300.00
Rigler, Leo, X-ray studies on the heart	400.00
Scammon, R. E., research on human growth	3,000.00
Schlutz, F. W., problems in pediatrics	1,200.00
Scott, F. H., functions of kidney and cerebral cortex	400.00
Seham, Max, study of congenital asthenia	500.00

LECTURESHIP WITH THE MAYO FOUNDATION

Lecture given by Professor W. D. MacMillan, of the University of Chicago, on "The Evolution and Dissolution of Matter," in 133 Physics Building, Friday, May 18, 1928.

A separate report for the Mayo Foundation is appended hereto.

Respectfully submitted,

GUY STANTON FORD, *Dean*

FIFTH REPORT OF THE DIRECTOR OF THE MAYO FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH

Herewith is presented a brief summary of the finances and work in medical education and research of the Mayo Foundation from July 1, 1927 to June 30, 1928.

Financial.—On July 1, 1927, the balance in the foundation fund was \$23,687.52. During the year there has been added \$288,218.70, gross income from the fund which includes sales of securities. The total expenses for the year, including investment costs, were \$743,230.54, of which \$306,188.64 was paid from the foundation fund and \$437,041.90 from the Mayo Clinic. The balance in the foundation fund on June 30, 1928, was \$5,717.58. The total amount budgeted from the Mayo Foundation fund for the year was \$111,140.

Faculty.—The number of members of the faculty in the Mayo Foundation is shown in the following table:

	Associate		Assistant		Total
	Professors	Professors	Professors	Instructors	
Number on duty July 1, 1927...	22	26	27	46	121
Promotions during the year....	2	2	6	..	10
New appointments .....	..	..	1	15	16
Number on duty July 1, 1928...	24	26	32	55	137

In addition during a part of the year Professor Gunnar Ahlgren of the University of Lund was a special lecturer in the foundation.

Applications for fellowships.—During the year inquiries regarding graduate work were received from 1,314 individuals. Some of these were ineligible and advised to go elsewhere for training. Three hundred and eighty-six completed formal applications for fellowships during the year. Sixty-one of the 386 applicants for fellowships were nominated for service. Two of these could not come and asked to have their applications withdrawn. Ninety applications are still on file to be considered for later service.

Fellows.—An analysis of the fields in which fellows in the foundation are majoring is shown in the following tabulation:

Fields	Fellows in Foundation July 1, 1927	Fellows Who Left During the Year or Were Transferred to Other Fields	Fellows Who Came During the Year or Were Transferred from Other Fields	Fellows in Foundation June 30, 1928
Medicine	75	22	23	76
Neurology	5	2	1	4
Pediatrics	9	4	3	8
Dermatology	9	2	1	8
Medical specialties	98	30	28	96
Surgery	103	23	42	122
Urology	9	2	4	11
Orthopedics	5	..	1	6
Oto-laryngology	10	..	1	11
Ophthalmology	5	3	2	4
Surgical specialties ...	132	28	50	154
Obstetrics	3	1	2	4
Proctology .....	..	..	3	3
Dental surgery	7	1	2	8
Radiology	4	1	1	4
Other clinical specialties	14	3	8	19
Pathology	7	2	5	10
Physiologic chemistry ..	4	1	1	4
Anatomy	1	1	..	..
Bacteriology	1	1	3	3
Biophysics	2	1	3	4
Physiology .....	..	..	1	1
Home economics .....	..	..	1	1
Laboratory fields	15	6	14	23
Totals	259	67	100	292

The reasons for sixty-seven fellows leaving their fellowships during the year is indicated as follows:

Transferred to other fields.....	8
On leave of absence and returned during the year.....	2
Still on leave of absence.....	11
Left after three years or more of service with graduate degree.....	12
Left after three years or more of service without graduate degree.....	8
Left after less than three years of service (four were fellows of other institutions)	26

Students from other organizations.—Besides the fellows indicated in the preceding table, seven officers of the United States Army, thirteen fel-

lows of the Rockefeller Foundation, or whom the Rockefeller Foundation is sponsoring, one fellow of the American Scandinavian Foundation, and two volunteers were on duty for short periods in the Mayo Foundation, although not registered in the Graduate School.

Graduates.—Twenty-five graduate degrees were obtained by fellows during the year. The fields in which the degrees were obtained are as follows:

	Master's
Medicine	8
Dermatology	2
Surgery	9
Urology	2
Oto-laryngology	1
Ophthalmology	1
Pathology	1
Chemistry	1

Lectures.—Besides the lectures by members of the staff on three evenings each week from October 1 until June 6, twenty-one lecturers gave a total of twenty-six lectures. Several of these were arranged in co-operation with the local chapter of Sigma Xi. The list follows:

MAYO FOUNDATION LECTURES DURING 1927-28

Dr. H. A. Harris, London, Cessation of growth in the long bones in health and disease. Colonel Roger Brooke, U. S. Army, Tropical climatology and hygiene. Colonel Roger Brooke, U. S. Army, Recent additions to our knowledge of malaria. Colonel Roger Brooke, U. S. Army, Dysentery and sprue. Professor I. Snapper, Amsterdam, Nonexcretory functions of the kidney. Sir John Bland-Sutton, London, Foods and physic. Dr. Paul Strausmann, Berlin, Some modern gynecological operations. Dr. Sigmund Frankel, Vienna, The theory of synthetic remedies and endocrines. Major J. F. Coupal, U. S. Army, The history of pathology. Professor C. W. M. Poynter, U. of Nebraska, Absorption from the peritoneal cavity. Dr. Gunnar Ahlgren, University of Lund, Problems of intermediary metabolism. Dr. H. G. Bugbee, New York, Annual Lecture in Urology, The rôle of the kidney function in urologic surgery. Dr. A. I. Ludlow, Seoul, Korea, Amoebic abscess of the liver. Dr. A. I. Ludlow, Seoul, Korea, A comparative study of cholelithiasis in the Orient. Dr. M. G. Seelig, St. Louis, Mo., The course of medical history epitomized. Dr. Franz X. Mayr, Carlsbad, Intestinal toxemia, symptoms, diagnosis and treatment. Dr. George H. Semken, New York City, Cancer of the lips. Dr. George H. Semken, New York City, Cancer of the jaws and oral cavity. Dr. Julius Bauer, Vienna, Individual constitution in clinical pathology. Dr. Julius Bauer, Vienna, Pituitary-nervous dyscrasias. Dean Irving S. Cutter, Chicago, Some side-lights on the etiology of puerperal fever. Dr. Arthur Steindler, Iowa City, Possibilities of reconstruction of the upper extremities. Dr. James Moores Ball, St. Louis, Resurrection days. Dr. George M. Curtis, Chicago, The action of specific diuretics. Dr. Morris Fishbein, Chicago, Frauds and quackery in medicine. Dr. Walter M. Simpson, Dayton, Tuleremia.

Publications.—The following tabulation is an analysis of the publications of the fellows during the year. The detailed statement of the publications of members of the faculty appears elsewhere in the report.

ANALYSIS OF THE PUBLICATIONS BY FELLOWS IN THE MAYO FOUNDATION DURING THE UNIVERSITY YEAR, 1927-28

	Contributors (Duplicates omitted)	Contributions
Medicine	23	29
Neurology	1	1
Dermatology	2	2
Surgery	19	24
Urology	4	3
Orthopedic surgery	2	3
Oto-laryngology	1	1
Ophthalmology	2	2
Obstetrics	1	1
Dental surgery	1	2
Radiology	3	4
Pathology	3	3
Chemistry	2	3
Physics	1	1
Totals	64	79

The publications embody the completed research work of the year. The subjects are much too numerous and touch too diverse fields to permit of ready analysis. The papers are all republished either in whole or in part in the annual volume, *Collected Papers of the Mayo Clinic and the Mayo Foundation*.

Respectfully submitted,
LOUIS B. WILSON, *Director*

THE SCHOOL OF BUSINESS ADMINISTRATION

To the President of the University:

SIR: The following report of the School of Business Administration for the year 1927-28 is respectfully submitted.

STUDENTS

There was a substantial increase in enrolment as shown by the following tabulation:

Fall 1927		Winter 1928		Spring 1928	
Seniors	112	Seniors	138	Seniors	151
Juniors	157	Juniors	149	Juniors	156
Specials	10	Specials	14	Specials	12
Total		Total		Total	
Men	243	Men	262	Men	277
Women	36	Women	39	Women	42

A total of 133 degrees was conferred during the year as compared with 112 during the year 1926-27.

The total class enrolments including the elections in economics courses by students in the Colleges of Science, Literature, and the Arts, Engineering and Architecture, and Education are shown in the following table. This table also shows the number of student credit hours taught.

	Fall		Winter		Spring	
	Course Enrol- ment	Student Credit Hours	Course Enrol- ment	Student Credit Hours	Course Enrol- ment	Student Credit Hours
1928	3,124	12,046	3,090	11,636	2,845	10,816
1927	2,737	10,269	2,612	9,983	2,554	10,068

CO-OPERATIVE WORK

The experiment in co-operative work mentioned in the last annual report was continued during the year. Laboratory training in the fields of accounting, banking, marketing, and advertising, was obtained on the co-operative basis for thirty-five students.

CURRICULUM

One important change was made in the course requirements for graduation. This consists in the establishment of what is termed a "core group" of courses required of all students. The purpose of this requirement is to prevent students from becoming too highly specialized in their undergraduate program. The core group covers 52 credits out of the 90 credits required for graduation. The subject-matter is so arranged as to insure a broad general training in the various phases of business administration and

economics. Specialization in the various course sequences is permitted only to the extent of the 38 credits not assigned to the core group. It is hoped that this adjustment in the curriculum will result in a much better balanced program. A detailed description of the course will be found in the new bulletin of the School of Business Administration, Part I.

SCHOLARSHIPS

The scholarship presented by the Advertising Club of Minneapolis was awarded this year to Mr. Clayton Thompson.

The Staring Realtor Scholarship was awarded to Mr. Kenneth Setre.

RESEARCH

The Committee on Business Research has continued its investigation in retail store costs. In addition to those mentioned in preceding reports a study of costs has been started in co-operation with the Minnesota Society of Morticians. Studies of this character have not been extended to any considerable degree because of the lack of funds for conducting the work effectively.

Several independent research projects have been undertaken by members of the staff in connection with the Northwest regional survey. Mr. Butterbaugh has recently completed a study and prepared a report on the Railroad Rate Structures of the Northwest. Studies are in progress by Professor Vaile on the problems of commercial marketing in the Northwest and by Professor Stead on occupational opportunities in the Northwest. Professor Mudgett is directing a study on an index of production for the Northwest.

Professor Alvin H. Hansen was awarded one of the Guggenheim Fellowships for foreign study for the year 1928-29. He will make a study of the economic readjustment in Germany during the period 1920-27, with special reference to the problem of employment.

Respectfully submitted,

R. A. STEVENSON, *Dean*

THE DEAN OF WOMEN

To the President of the University:

SIR: The dean of women herewith submits the following report for the year 1927-28.

The distribution of women students, as to residence, (figures based on the census cards supplied by the registrar's office, and by private information obtained by this office) during the regular session of 1927-28, is as follows:

At home, or with relatives and friends.....	3,815
In approved houses.....	430
In dormitories	180
In co-operative cottages.....	70
In home management houses (group changes each quarter)	16
Nurses, in homes and hospitals.....	400
In sorority houses.....	220
Working for room and board.....	75
Total	5,206

Delinquents.—The dean of women has worked in co-operation with Dean Nicholson, Dean Shumway, Dean Freeman, and Dean Haggerty. She has served on the Student's Work Committee of the College of Science, Literature, and the Arts, the College of Education, and the College of Agriculture, Forestry, and Home Economics, on all cases of women students on probation because of poor scholastic work. She has also served on the general disciplinary committee of the University in hearing cases which have been referred to this committee. She has dealt with all individual cases of delinquency of women students from other causes coming to the attention of university officials. While there has been rather more of these cases during this past academic year than during the preceding one, still the number is small in comparison with the size of the student body, and in consideration of the location of the University in the midst of two large cities.

Domestic employment.—All domestic work for students, that is, the care of children or general housework, is handled by this office. Permanent work has been found for about seventy-five students, and occasional work for about forty. Only girls having had experience in domestic work, and who are strong physically, should attempt to work for room and board. Otherwise, such work is done at too great expense to health and scholarship. It is hardly advisable for students working for room and board to carry a full academic program.

HOUSING

Sanford Hall.—The year just past has been a rather quiet one at Sanford Hall. A new social director was placed in charge, and it seemed

wisest for her to proceed rather carefully in order to become familiar with the situation and acquainted with the girls.

The policy of the house discipline at Sanford Hall has been to treat the girls as adults, not children. This policy has resulted in having the halls reasonably quiet during study hours. We feel, however, that there is much room for improvement and next year more time will be given to improving this phase of life at Sanford Hall.

It has seemed to the director in her work this year that Sanford should be very desirable from the standpoint of the girls themselves and their parents. For some reason it does not seem to have the popularity it deserves.

Co-operative Cottages.—Loring Cottage, 201 State Street, houses sixteen girls, and it has been filled all year.

Northrop Cottage at 501 Washington Avenue, has also been filled to capacity the past year, housing eighteen girls.

A new Winchell Cottage was opened this year at 519 Beacon Street. This houses thirteen students. All four of the Winchells, housing sixty-nine students, have been filled all year.

Home Economics Dormitory.—As in the past, this building has been used for the housing of university students taking work in home economics.

Rooming and boarding houses.—All houses where students live are inspected and graded according to the desirability by the director of the Housing Bureau, Mrs. Catharine McBeath, and her assistant, Mrs. Ethelyn Harrison. We are constantly raising the standard of our rooming and boarding houses. Only houses that can be graded A and B are listed in our approved directory. The monthly meetings of the householder's organization, composed of the women in charge of rooming and boarding houses, have continued throughout the year. Attendance at these meetings is compulsory for all women wishing to keep their names on the approved list.

SUMMER SCHOOL

No printed lists of rooming houses were sent out. Arrangements for rooms were again made through the Housing Bureau. This has proved to be very satisfactory. Shevlin Hall was opened for the social activities of women. Sanford Hall was open for both sessions. All of the cottages were open for the first term of the Summer Session, and all but one Winchell Cottage were open for the second term.

WOMEN'S ORGANIZATIONS

Women's Self-Government Association.—The Women's Self-Government Association carried on a splendid program throughout the year under the presidency of Miss Grace Gardner. The work with the freshmen was under the charge of Miss Louise McIntyre, who did a fine piece of organization and who reached a greater number of freshmen than has been possible before. She is making suggestions for improving the work for the coming year, and we hope that these will make the work even more effective.

The Young Women's Christian Association.—The activities of the Young Women's Christian Association were very much the same as last year's activities, but supplemented by the constructive leadership of the two secretaries, Miss Lois Wildy and Miss Marie Shaver. Among the things these women brought to the association are sound judgment, a sympathy for the college girl's desires, and help in realizing the purpose of the association.

Women's Athletic Association.—The activities of this association the past year were much the same as last year, but seemed to be carried through with more spontaneity and enthusiasm under the able leadership of the president, Margaret Murray, and a fine executive board of eleven members, representing the headship of the various sports and committees. The board meetings were held weekly in the Women's Athletic Association room in the Women's Gymnasium, and were usually attended by the faculty adviser, Miss Helen Hazelton.

In all cases where policy was involved concerning the association and its activities the decisions were rendered by a joint committee of faculty and students with the students in the majority. Each year the majority of the students show common sense and sound judgment in their thinking and they have an enthusiasm and zeal for work which is illuminating.

From the department point of view, there is a constant attempt to present the idea of a broad all-inclusive program where every girl will find an activity that will give her satisfaction. Much educating needs to be done along this line, for, by nature, the Women's Athletic Association tends to limit itself to the high skilled group. Also it must be made easy for every girl to participate—convenient hours, convenient play space, convenient equipment, and teams to join. (Minnesota needs more play space badly.)

Sororities.—There are at the present time twenty national sororities on the campus, and one local sorority unrestricted as to membership by race or creed. There is one national sorority for Jewish women, newly installed, which has for its membership the old local organization of Scroll and Key. There are two other local Jewish sororities which hope to become members of national Jewish sororities some time in the near future. There is one national sorority for colored women.

The sororities have not yet come to the point of accepting deferred rushing, but we hope that consistent work at this will produce some results in the near future.

The eligibility of all pledges for initiation has been certified by Panhellenic through this office.

This year it has been consistently true that no sorority fell below the "C" average.

Shevlin Hall.—Shevlin Hall is in constant use, especially by the various organized groups of women. It serves a very real need on the campus. Its social rooms are hardly large enough for the number of group activities that have to be conducted in them, and the tendency is at present for

the women students to take their larger functions over to the Minnesota Union.

The cafeteria since its reorganization has been increasingly popular, and the women are bringing their functions more and more here for service. Mrs. Barley has proved a highly efficient manager.

Chaperonage.—The chaperonage of all campus parties is under the supervision of the dean of women. The effort to confine parties to Friday and Saturday evening has been increasingly successful. The meeting of the rooming house chaperons and those of the sorority house chaperons have enabled the dean of women and the head of the Housing Bureau to keep in close touch with this phase of chaperonage.

Loan funds.—The following loan funds are administered through the office of the dean of women:

Faculty Women's Club loan fund
The Jessie Ladd loan fund
The St. Paul Alumnae Club loan fund
The Minneapolis College Club loan fund
The Pathfinders Club loan fund

From the Faculty Women's Club loan fund, April, 1927, to April, 1928, 25 students borrowed a total of \$2,245; 51 students paid back a total of \$2,174.56. We also have the interest from \$2,000 invested in bonds to add to the loan fund.

Small amounts have been given out as short time loans from the two Alumnae Club loan funds, the College Club, and the Pathfinder Club—a total of \$1,470.50 in loans given out, and \$1,444 in loans repaid.

Interest on the Edward M. and Effie R. Johnson Foundation gift of \$5,000 is used for loans to women students. These loans are administered through the office of the dean of women. Fifteen students have received the sum of \$535.

Scholarships.—Thirty-seven scholarships, totaling \$4,020, have been awarded to women through this office:

Mrs. Elbert L. Carpenter Scholarship.....	\$ 100.00
Mrs. George C. Christian Scholarship.....	100.00
Mrs. George P. Douglas Scholarship.....	100.00
George H. Partridge Scholarships.....	500.00
P. E. O. Scholarship.....	100.00
Nina Morais Cohen Scholarship.....	120.00
St. Paul College Club Scholarships.....	1,050.00
Women's Self-Government Association Scholarships.....	1,700.00
Faculty Women's Club—Student Section.....	150.00
College Women's Club of Minneapolis.....	100.00

Respectfully submitted,

ANNE DUDLEY BLITZ, *Dean*

THE DEAN OF STUDENT AFFAIRS

To the President of the University:

SIR: I herewith submit my report, as dean of student affairs, for the year 1927-28.

The year has been a successful one. There has been continued definite progress in the building up of the student activities along constructive lines, giving to them added values as citizen training courses.

Foreign students of the University.—Dr. A. E. Koenig has continued his service to this office and to the University this past year serving as a special adviser to foreign students. I take pleasure in expressing to Dr. Koenig, through this report, my appreciation of the valuable service rendered by him. A summary of his report to me shows that 63 conference sessions were held during the year which were attended by 271 students—212 men and 59 women. These students came in for almost every type of advice and conference, sometimes for a friendly visit which often helped them to relieve a tension under which they had been working.

Student organization finances.—The work of advising student organizations in the matter of their finances, with close supervision in the case of those organizations which represent the student community, has been continued this past year under the direction of Mr. H. G. Fraime. There has been a decided improvement in the matter of finances. The three major publications, the *Minnesota Daily*, the *Gopher*, and *Ski-U-Mah*, are clear of all indebtedness and each has a fair reserve started. Of the minor publications—those established within colleges—the situation is not so good. One or two of them are clear of indebtedness, but with nothing in reserve. Most of them are struggling to keep from getting too deeply in debt.

Of the dramatic groups, two of them are clear of indebtedness at this time—the Minnesota Masquers and the Arabs. The others are struggling with old indebtedness. There has been a decided improvement in the spirit and morale of dramatic groups this year.

Class organizations such as the Freshman Party, the Sophomore Frolic, the Junior Ball, and the Senior Prom, have all been under supervision and guidance. They have paid all bills, leaving small balances.

There have been fewer complaints than usual, this year, from outsiders relating to unpaid accounts against student groups.

Student councils.—The All-University Student Council has maintained its standard of constructive thought and work. Of the college councils, Law and Agriculture have functioned efficiently.

Publications.—The all-university publications, the *Minnesota Daily*, the *Ski-U-Mah*, and the *Gopher*, have had a good year—for the first two publications, the most successful in their history. *Ski-U-Mah* will be able to start building a reserve fund as a result of the past year's business. The *Gopher* will pay all bills with a small balance to its credit. Of the college publications, all of them, with the exception of the *Law Review*, are having a struggle for existence. None of them, so far, are quite breaking even.

Fraternities.—The scholastic average for social fraternities and sororities for the past year is slightly lower than for the previous year. In the report on the men's group it is interesting to note the progress of Phi Delta Theta. It has maintained an excellent standing for the past six years, usually ranking about fourth. This past year its average, which gives it first place, is the highest average attained by any of the social group during the fifteen years covered by the records. Of two fraternities, which have been constantly below for some time, one succeeded this past year in attaining a "C" average. In the case of the other, the entire situation is being taken up with their national officers.

None of the sororities, social or professional, are below the "C" average. Four of the professional fraternities are below. On the whole, the fraternity situation in the University is showing gradual improvement. A scholastic comparison of fraternities and sororities for 1927-28 follows:

SCHOLASTIC COMPARISON

ACADEMIC FRATERNITIES, 1927-28

Phi Delta Theta.....	1.533	Phi Kappa Psi.....	1.018
Kappa Alpha Psi.....	1.291	Chi Psi.....	1.009
Theta Chi.....	1.282	Zeta Psi.....	1.0086
Kappa Sigma.....	1.175	Sigma Alpha Epsilon.....	1.008
*Beta Sigma Epsilon.....	1.170	Theta Delta Chi.....	1.005
Alpha Tau Omega.....	1.156	Pi Kappa Alpha.....	1.000
Theta Xi.....	1.146	Sigma Nu.....	.981
Sigma Alpha Mu.....	1.1399	Delta Upsilon.....	.964
Delta Chi.....	1.1395	Sigma Phi Epsilon.....	.961
Phi Gamma Delta.....	1.136	Phi Kappa Sigma.....	.960
Lambda Chi Alpha.....	1.118	Chi Phi (Chi Delta Xi).....	.956
Theta Kappa Nu.....	1.107	Delta Kappa Epsilon.....	.950
Beta Theta Pi.....	1.106	Alpha Sigma Phi.....	.936
Phi Epsilon Pi.....	1.064	*Chi Sigma Phi.....	.922
Sigma Chi.....	1.060	Psi Upsilon.....	.880
Delta Tau Delta.....	1.049	Omega Psi Phi.....	.816
Tau Kappa Epsilon.....	1.048	Alpha Delta Phi.....	.791
Phi Beta Delta.....	1.037	Fraternity average.....	1.051
Acacia.....	1.034	General average of all students	1.190
*Tau Delta Phi.....	1.02484		
Phi Sigma Kappa.....	1.02483	*Beta Sigma Epsilon—Fall record;	
Alpha Phi Alpha.....	1.023	Tau Delta Phi—Winter and spring rec-	
		ord; Chi Sigma Phi—Fall record.	

ACADEMIC SORORITIES, 1927-28

Alpha Kappa Alpha.....	1.494	Alpha Xi Delta.....	1.321
Zeta Tau Alpha.....	1.482	Delta Zeta.....	1.314
Alpha Sigma.....	1.433	Sigma Kappa.....	1.275
Pi Beta Phi.....	1.428	Delta Gamma.....	1.268
Alpha Gamma Delta.....	1.427	Alpha Delta Pi.....	1.247
Kappa Delta.....	1.355	Chi Omega.....	1.201
Phi Mu.....	1.350	Beta Phi Alpha.....	1.188
Phi Omega Pi.....	1.343	Alpha Phi.....	1.148
Kappa Kappa Gamma.....	1.341	Kappa Alpha Theta.....	1.144
Delta Delta Delta.....	1.339	Alpha Chi Omega.....	1.095
Alpha Omicron Pi.....	1.336	Sorority average.....	1.311
Gamma Phi Beta.....	1.334	General average of all students	1.190

THE PRESIDENT'S REPORT

PROFESSIONAL FRATERNITIES, 1927-28

<i>Agriculture and Forestry</i>		<i>Law</i>	
Alpha Gamma Rho.....	1.356	Phi Delta Phi.....	1.413
Tau Phi Delta.....	1.332	Gamma Eta Gamma.....	1.221
<i>Business</i>		Phi Alpha Delta.....	1.203
Alpha Kappa Psi.....	1.250	Delta Theta Phi.....	1.049
Delta Sigma Pi.....	1.102	<i>Medicine</i>	
<i>Chemistry</i>		Phi Delta Epsilon.....	1.558
Alpha Chi Sigma.....	1.468	Nu Sigma Nu.....	1.533
<i>Dentistry</i>		Phi Beta Pi.....	1.489
Delta Sigma Delta.....	1.546	Alpha Kappa Kappa.....	1.456
Xi Psi Phi.....	1.145	Omega Upsilon Phi.....	1.391
Psi Omega.....	1.007	Phi Chi.....	1.384
Alpha Omega.....	.900	Phi Rho Sigma.....	1.222
<i>Engineering</i>		<i>Mines</i>	
Sigma Alpha Sigma.....	1.475	Sigma Gamma Epsilon.....	1.750
Triangle.....	1.329	Sigma Rho.....	1.545
Scarab.....	1.283	<i>Music</i>	
Theta Tau.....	1.141	Phi Mu Alpha.....	1.400
Kappa Eta Kappa.....	1.122	<i>Pharmacy</i>	
Alpha Rho Chi.....	.969	Phi Delta Chi.....	.981
<i>Journalism</i>		Alpha Beta Phi.....	.955
Sigma Delta Chi.....	1.211	Average.....	1.287

PROFESSIONAL SORORITIES, 1927-28

<i>Architecture</i>		<i>Law</i>	
Alpha Alpha Gamma.....	1.498	Kappa Beta Pi.....	1.975
<i>Chemistry</i>		<i>Medicine</i>	
Pi Delta Nu.....	1.813	Alpha Epsilon Iota.....	1.562
<i>Forensic</i>		Alpha Delta Tau.....	1.415
Kappa Rho.....	1.776	<i>Music</i>	
Zeta Alpha Psi.....	1.392	Sigma Alpha Iota.....	1.900
<i>Journalism</i>		<i>Dental Nursing</i>	
Theta Sigma Phi.....	1.729	Alpha Kappa Gamma.....	1.342
Average.....	1.609	<i>Pharmacy</i>	
		Kappa Epsilon.....	1.303

CLUBS, 1927-28

Cosmopolitan Club.....	1.610
Beta Iota Alpha.....	1.550
Scroll and Key.....	1.439
Scabbard and Blade.....	1.271
De Molay.....	1.039
Philippinesotans.....	.624
Average.....	1.255

GIRLS' CO-OPERATIVE COTTAGES, 1927-28

Loring Cottage	1.603
Charlotte Winchell Cottage.....	1.591
Winchell Cottage No. 3.....	1.491
Winchell Cottage No. 2.....	1.468
Northrop Cottage	1.443
Winchell Cottage No. 1.....	1.330
Sanford Hall	1.277
Average	1.457

MEN'S CO-OPERATIVE COTTAGES, 1927-28

Cottage No. 4.....	1.607
Cottage No. 2.....	1.087
Cottage No. 1.....	1.043
Cottage No. 5.....	.727
Cottage No. 3.....	.674
Average	1.027

NON-SORORITY, 1927-28

Women

Science, Literature, and the Arts.....	1.207
Agriculture, Forestry, and Home Economics.....	1.25
Business	1.490
Chemistry .....	.737
Dentistry	1.357
Education	1.414
Engineering and Architecture.....	.969
Law .....	.444
Medicine	1.259
Nursing	1.290
Dental Hygienists .....	.930
Nursing, Public Health.....	1.578
Pharmacy	1.403

NON-FRATERNITY, 1927-28

Men

Science, Literature, and the Arts.....	1.505
Agriculture, Forestry, and Home Economics.....	1.288
Business	1.283
Chemistry .....	.980
Dentistry	1.234
Education	1.310
Engineering and Architecture.....	.957
Law	1.217
Medicine	1.338
Mines	1.273
Pharmacy	1.270

Student loans.—The comptroller has made a full report covering loans from funds in the hands of the University. There will be a material difference in the totals reported by him and totals which might be issued from this office. His report covers loans to students of the School of Agriculture, loans from the Law School fund, and from the School of Mines and Metallurgy. A report from this office would not cover the above, but would

SPECIAL STUDENT LOAN FUNDS

July 1, 1927, to June 30, 1928

College	To Be Repaid In					Unclassed	Graduate	Total
	1927	1928	1929	1930	1931			
Agriculture, Forestry, and Home Economics..	.....	\$285.00	\$205.00	\$260.00	.....	.....	.....	\$750.00
Science, Literature, and the Arts.....	\$70.00	230.00	354.00	567.50	\$115.50	.....	.....	1,337.00
Business	60.00	225.00	60.00	.....	.....	.....	.....	345.00
Chemistry .....	.....	.....	.....	45.00	.....	.....	.....	45.00
Dentistry	212.50	130.00	65.00	.....	.....	.....	.....	407.50
Education .....	.....	49.00	310.00	.....	.....	\$25.00	.....	384.00
Engineering and Architecture.....	65.00	305.00	197.00	409.00	60.00	.....	.....	1,036.00
Extension .....	.....	.....	.....	.....	.....	.....	.....	58.00
Law .....	.....	125.00	185.00	20.00	.....	.....	.....	330.00
Medicine	50.00	215.00	.....	695.00	70.00	.....	.....	1,030.00
Nursing .....	.....	20.00	35.00	.....	.....	.....	.....	55.00
Pharmacy .....	.....	.....	35.00	.....	.....	.....	.....	35.00
Total	\$457.50	\$1,584.00	\$1,446.00	\$1,996.50	\$245.50	\$25.00	.....	\$5,812.50
In addition to above, following amounts loaned: Ely Rotary Club.....	.....	.....	.....	.....	.....	.....	.....	75.00
Eveleth Rotary Club.....	.....	.....	.....	.....	.....	.....	.....	50.00
Grand total .....	.....	.....	.....	.....	.....	.....	.....	\$5,937.50

include loans made from special funds in the offices of the dean of women and the dean of student affairs.

A report on these special loans shows:

(1) From the dean of women's office, 1927-28	
Faculty Women's Club fund.....	\$2,550.00
Jessie Ladd fund.....	85.00
St. Paul Alumnae fund.....	708.50
Minneapolis College Club fund.....	70.00
Pathfinders' Club fund.....	337.00
D. A. R. fund.....	450.00
Total	\$4,200.50
(2) From special funds in the office of dean of student affairs	
Charles Goodnow Masonic fund, Rotary fund, Midland fund, Eveleth and Ely funds:	
See tabulation on page 236.	

The demands on our student loan funds are increasing. Increase in student fees will enlarge the demands. The time is now coming when it will be necessary to make at least some loans of fair size, to fall due three years after graduation, thus enabling the student to place himself on a productive basis before repayment demands become due.

We are trying out this plan at the present time, experimentally. The Charles Goodnow fund is carrying one man on this basis—a \$1,200 drawing account advancing \$50 per month. The Rotary fund is carrying one man for \$1,000. The Knights Templar fund is carrying one man for \$1,200. The university fund is carrying one man for all tuition for two years.

FATHERS' AND MOTHERS' DAYS

Dad's Day was held October 29 this year, for the fourth time. The forenoon was given over to registering, seeing the campus, and visiting with sons and daughters. For the afternoon, provision was made for those who might wish to attend the football game, also for those who might wish to visit points of interest to them, about the campus. The day closed with the dinner at which there were between five and six hundred, representing fifty-three counties of this state. There were ten outside states represented by thirty-four fathers. Dean Anne Dudley Blitz welcomed the fathers and spoke for a few moments on the great need for parents to keep in closer touch with the life and activities of their sons and daughters. Dr. Baker, of Fergus Falls, an alumnus and father of three students, responded to the welcome for the fathers. Dr. Baker made a very helpful and interesting talk, expressing the viewpoint of parents. The student loan fund, established by the fathers the previous year, of some \$112, was increased this year by a further subscription of \$180. This fund is known as "Dad's Student Loan Fund."

Saturday, May 12, 1928, was set apart as the fourth annual Mother's Day. As in the case of Dad's Day, a personal invitation to attend went from the president to the mother of every student. How many mothers actually attended during the day it is impossible to say. As is true for both Dad's and Mother's Day, many come to the campus, spend the day visiting, but fail to register or attend the dinner in the evening. At the dinner 977

mothers were present, of these 147 attended for the first time, the balance of the mothers were there for the second, third, and fourth times. They covered 106 towns of the state, outside of Minneapolis and St. Paul. From outside of Minnesota, there were 15 from Wisconsin, representing ten towns in that state. From North Dakota there were 5 from five towns. From Michigan there were 3 from three towns. From Iowa there were 2 from two towns. From Illinois there were 2 from two towns. From Saskatchewan, Canada, there was one.

During the forenoon the mothers visited their sons and daughters, seeing their living quarters and visiting their classes, taking lunch with them. In the afternoon the Masquers, one of the dramatic clubs, put on a play for the mothers. The Little Theater was entirely too small to care for them. The overflow was entertained by the University Band with a special concert. Tea was served at four-thirty at the Agricultural College campus, at the Minnesota Union, and at Shevlin Hall. The dinner was served at six-thirty in the Minnesota Union ballroom. Dean Blitz presided at the dinner and welcomed the guests. She spoke briefly on students' extra-curricular activities, showing how the University is guiding and directing these activities so that they possess a constructive value in the citizenship training of the student. Mrs. Merrill of St. Paul, the mother of two students, responded to the welcome for the mothers. Mrs. Merrill made a very gracious talk expressing the spirit of friendship and appreciation of the mothers and a desire on their part to be of more help and to know the University better.

As usual, the program was closed by the president's informal talk to the mothers. The question and problem brought to them at this time was that of the changing moral standards, the difficulties these changes brought with them, and the need for close co-operation between the University and mothers in making the correct new adjustment. The fathers and mothers are intensely interested in this informal presentation of university problems and feel, after these meetings, that they have been brought into active contact with some of the questions which have a direct bearing on the welfare and development of their son or daughter.

At each of these meetings there are a number of deans and administrative officers present and the acquaintanceship made at this time means much to both parents and the University in understanding and good will.

BAND APPRECIATION DAY

On May 5 a program of special events was promoted by a group of alumni and students, with the special co-operation of the University Band, for the purpose of raising money with which the band might make a concert tour of Europe. Considerable public interest was aroused, but when the proceeds were found to be far under the figure required for a trip to Europe by the band, the money was placed in the hands of the dean of student affairs to be held pending the time when some proper disposal of it might be decided upon.

Respectfully submitted,

EDWARD E. NICHOLSON, *Dean*

THE GENERAL EXTENSION DIVISION

To the President of the University:

SIR: Herewith I transmit to you the report of the General Extension Division for the academic year beginning July 1, 1927, and ending June 30, 1928.

The idea underlying university extension is very simple. It is to the effect that man's intellectual progress, his mental growth, his development of individuality, the enrichment of his personality, should not cease nor measurably diminish with the close of his formal school career. It is necessary that men study for vocational training and for vocational guidance—but it is also necessary that men study for the purpose of enlarging their horizon, for obtaining a better perspective on human existence, and for growing to the limit of their natural endowment. The idea is becoming prevalent that men and women should be studying something worth while every year from the time they finish their formal schooling until the close of life. It was largely for the benefit of this group that university extension was organized. But there is another group also to be considered. A state university's obligation to the state is not fully discharged when it merely provides educational facilities for those students who resort to the campus. The state should provide higher education for all those who are capable of receiving it, even if they must acquire it amid the engrossing business of earning a living. When qualified students have not time or means to go to the university, then the university must go to them and fit its program to their necessities. This is university extension.

The General Extension Division of the University of Minnesota functions in two ways. These two methods may be called respectively formal education and informal education or educational service. Under the first division instruction is given in university subjects through organized classes conducted in the late afternoon and evening hours in Minneapolis, St. Paul, Duluth, and several other cities of the state. This is for the benefit of those who must use the daytime hours for earning their living. For those individuals scattered over the state who cannot resort to where classes are held, correspondence courses are provided. In this manner university instruction is conveyed by mail. There are also unit short courses provided over highly specialized fields for doctors, dentists, merchants, scout masters, electricians, embalmers, and others.

Under informal instruction or educational service may be found such activities as the University Lyceum, through which programs of music, entertainment, popular lectures, and dramatic readings are furnished the communities of the state; Visual Instruction, through which educational films and slides are provided; and the Drama Service, which provides reading copies of popular plays for amateur production. Another active and popular bureau in university extension is the Municipal Reference Bureau, which provides information to municipal officers on the various phases of their activities.

It is through these means that the University attempts to vindicate its claim that it has a state-wide campus.

EXTENSION CLASSES

During this year extension classes were conducted in Minneapolis, St. Paul, Duluth, Chisholm, Eveleth, Hibbing, Red Wing, Rochester, South St. Paul, Virginia, Two Harbors, and Superior, Wisconsin. The total number of such classes was 619 as compared with 561 the year before. The total number of student semester registrations for the year was 10,775, a net gain of 1,092 over the preceding year. The total number of individuals registered was 6,125, a gain of 637 over the preceding year. The fees collected for classes amounted to \$108,328, a net gain of \$11,762 over the preceding year.

SHORT COURSES

During the year 23 short courses were conducted in various subjects, the courses lasting from three days to twenty-four weeks. Nine hundred people registered in these courses.

CORRESPONDENCE STUDY DEPARTMENT

During the past year the major interest of the Correspondence Study Department has been in the improvement of service. A rather systematic attempt has been made to revise courses so far as possible to bring them in line with corresponding residence courses, and in other ways to improve their quality. As one means of improving quality a scheme of lesson set-up has been evolved in which new types of question material have been planned, and special effort has been made to include in each lesson some material replacing the lecture characteristic of class teaching. Practically all of the revised courses have been modeled on this new scheme, and they seem to be productive of better results.

The department is more and more becoming a service school for teachers, and for regular students who are forced for various reasons to withdraw temporarily from resident study.

It still seems that the problem remaining to be solved by the department is that of extending its service more widely as a part of the general adult education movement. Some progress has been made in this direction. Courses in business subjects, for instance, have shown a tendency toward an increasingly large number of registrations, but there is, at least in theory, a field of cultural education, non-vocational in character which should be more widely served by correspondence study, just as by other forms of extension instruction. The problem of accomplishing this is not unique in correspondence teaching, for it is also a need of other types of instruction. The adequate means for solving the problem do not as yet present themselves.

UNIVERSITY RADIO PROGRAMS

An analysis of the program material broadcast during the year 1927-28 shows the following:

Type of Material	Number of Lectures,		
	Plays, etc.	Hours	Min.
Educational information	153 lectures	38	15
Languages (3)	78 lectures	24	30
Agricultural information	81 lectures	20	15
Dramatics	14 plays	12	
Household service	10 lectures	1	40
Campus news (from <i>Minnesota Daily</i>).....	16 reviews	2	40
Music	107 periods	61	30
Basket-ball	3 games	6	
Debates	4	7	
Oratorical contest	1	2	30
Political convention	1	3	30
Master farmer banquet	1	3	
Convocations	1	1	
Engineer's Day program	1	1	
Boy Scouts' program	1	0	45
Total hours on air		185	35

A still further analysis of the program material shows that the University broadcast

Informative material	322 lectures	84 hrs. 40 min. or 46.0%
Music	107 periods	61 hrs. 30 min. or 33.0%
Entertainment	14 plays—16 reviews of campus news	14 hrs. 40 min. or 7.5%
Special campus features ..	13 features	24 hrs. 45 min. or 13.5%
		185 hrs. 35 min. 100.0%

Remarks.—Of this material, 180 hours, 5 minutes were broadcast over WLB, University of Minnesota station, and 5 hours, 30 minutes were broadcast over WCCO, Gold Medal Flour Station.

Approximately 700 people took part in these programs.

A comparison of this year's programs over last year shows that last year the University was on the air 74 hours against this year's 185.5 hours.

The faculty and students have been very generous in donating their time and learning to the betterment of material broadcast by WLB.

Most of the broadcasting was done in the early evening hours which were deemed the best for educational broadcasting.

MINNESOTA STATE HIGH SCHOOL MUSIC CONTEST

The Fourth High School Music Contest conducted jointly by the General Extension Division and the Minnesota Public School Music League was held in May, 1928, and again demonstrated the permanency of its appeal to the schools of the state, exhibited much vitality, and made a healthy growth. During the four years that this contest has been operative,

it has grown from 9 districts to 14, from 91 participating schools to 157, from 63 cities represented to 140, from 3,500 participating pupils to approximately 9,000. These figures refer to the total of the district contests. In the final contest, held at the University, the number of pupils increased from 1,000 to 2,000, the number of classes or events from 25 to 37, and the number of schools represented from 30 to 68.

MUNICIPAL REFERENCE BUREAU

Information service.—Inquiries upon problems of government requiring the preparation of special reports numbered 1,061 during the past year. This is a slight decrease from the preceding year, but the inquiry service seems to be stabilized at 1,000 or more. The growth of the inquiry service is suggested by the following table which covers a seven-year period:

Year	No. Answered
1921-22	173
1922-23	271
1923-24	356
1924-25	415
1925-26	724
1926-27	1,167
1927-28	1,061

The inquiries answered during 1927-28 are classified by subject as follows:

Accounting	50	Public safety	32
Contracts, petitions, etc.	25	Public utilities	87
Elections	70	Public welfare	46
General municipal government ...	90	Public works	78
Health and sanitation	11	Salaries of municipal officials ...	29
Licensing	35	State and federal government ..	35
Municipal finance	69	Workmen's compensation	10
Municipal powers and liabilities ..	81	Miscellaneous	75
Ordinances and resolutions	199		
Parks and recreation	23	Total	1,061
Planning and zoning	16		

Minnesota Municipalities.—The official organ of the League of Minnesota Municipalities which is edited at the bureau has continued its publication on a monthly basis. The circulation has increased to approximately 4,000.

Publications.—Six publications have been issued during the past year in co-operation with the League of Minnesota Municipalities. These include:

- No. 20. Salaries of City Officials in Minnesota. 4 pages.
- No. 21. The League of Minnesota Municipalities. 16 pages.
- No. 22. Salaries of Village Officials in Minnesota. 8 pages.
- No. 23. Telephone Rates in Minnesota. 12 pages.
- No. 24. Tax Rates, Assessed Valuations and Public Indebtedness in Minnesota for 1928. 33 pages.
- No. 25. Fire Department Statistics in Minnesota for 1928. 16 pages.

Publications which are practically ready for the press and which will be published during the summer include a proposed system of accounts for small villages and a set of fire prevention ordinances.

Special services.—Under the direction of Mr. John P. Dalzell, the staff of the bureau and league has completely revised the ordinances for the villages of Shelly, Porter, Osakis, and Rosemount and for the city of Rushford. Additional revisions are now in progress for the villages of Sherburne and Mora. This work has been performed at the official request of the municipal councils.

Legislative service.—At the request of the Committee on Revision of the Village Law of the League of Minnesota Municipalities, the acting chief of the bureau has been engaged in preparing a suggested revision on this subject. This matter will be completed during the summer and will form the basis for the committee's discussion and for the drafting of a final report for presentation to the legislature at its 1929 meeting. It will be the object of the report to provide a uniform system of organization and operation for all of the 540 villages in Minnesota which are now governed under three different types of organization.

At the request of the Committee on Municipal Budgets and Accounts of the League of Minnesota Municipalities, the staff of the bureau has prepared a suggested act providing for the establishment of a budget system in all of the municipalities of the state and for the keeping of uniform accounts and the making of uniform reports. This bill was presented at the convention of the league and was discussed and referred to the Legislative Conference to be held in January, 1929.

CERTIFICATES

It has been found that there is steady pressure on the University to studies leading to certificates has been effective in inducing students to pursue coherent and consistent courses of study over a period of years. It is believed that this scheme holds more educational promise than does the practice of selecting studies at random.

STUDY GROUPS

It has been found that there is steady pressure on the University to supply club women and other organized groups with outlines, syllabi, and programs for sequential study in a more or less informal way. An agreement has been reached among the membership of the National University Extension Association, the National Organization of Parent-Teacher Associations, and the American Library Association to co-operate in furnishing guidance in these reading courses. Plans are now being worked out in the division by which those who pursue these reading courses will be awarded certificates on the completion of such courses, with satisfactory evidence of having read them carefully. The reading courses furnished by the Federal Bureau of Education and those gotten out by the American Library Association under the title "Reading with a Purpose" will be featured in the program.

Respectfully submitted,
RICHARD R. PRICE, *Director*

THE SUMMER SESSION

To the President of the University:

SIR: I submit herewith the report of the Summer Session of 1928.

Attendance.—The following table shows the attendance at the sessions of 1927 and 1928. There was a gain in total registrations in 1928 of 536 students, or 9.3 per cent.

COMPARATIVE ATTENDANCE

	1927	1928	Gain	Per Cent	Loss	Per Cent
First term registrations.....	4,136	4,630	494	11.2	...	...
Second term registrations.....	1,599	1,641	42	2.6	...	...
Total registrations	5,735	6,271	536	9.3	...	...
Attending both terms	988	1,031	43	4.3	...	...
New students second term....	611	610	...	...	1	...
Total different students	4,747	5,240	493	10.3	...	...
Nurses in hospital service....	321	425	104	32.4	...	...
Internes in hospital service...	91	105	14	15.3	...	...
Members Mayo Foundation...	285	271	...	...	14	4.9
Total students served.....	5,444	6,041	597	10.9	...	...

PREVIOUSLY MATRICULATED STUDENTS

	Number				Per Cent of Total Registration				
	1925	1926	1927	1928	1925	1926	1927	1928	Average
First term	2,071	2,116	1,581	1,860	57.7	53.	38.2	40.1	47.2
Second term	956	941	905	924	68.	67.	56.6	56.3	61.9
Both terms	3,027	3,057	2,486	2,784	60.6	56.5	43.3	44.3	51.1

REGISTERED FOR SOME DELINQUENCIES

	Number			Per Cent of Total Registration			Per Cent of Total Registration Previously Matricu- lated Students				Av. Four Years
							Av. Four Years			1926		1927	1928
	1926	1927	1928	1926	1927	1928	1926	1927	1928	1926	1927	1928
First term.....	159	205	272	4.0	4.1	5.0	5.3	7.5	13.	14.5	11.5
Second term...	138	152	166	9.9	9.5	10.1	10.2	14.6	16.8	17.9	13.9
Both terms ...	297	357	438	5.5	6.2	6.9	6.6	9.7	14.3	15.7	13.1

REGISTRATIONS IN THE GRADUATE SCHOOL

(With percentages of total registration)

	1925	Per Cent	1926	Per Cent	1927	Per Cent	1928	Per Cent
First term	593	16.5	685	17.2	712	17.2	839	18.1
Second term	151	10.7	148	10.6	220	13.7	211	12.8
Both terms.....	744	14.9	833	15.4	932	16.2	1,050	16.7

Geographical distribution.—Summer session students were in attendance from 44 states in the Union, from the District of Columbia, and from 17 foreign countries.

Four-quarter basis.—It is gratifying to note that certain departments of the College of Science, Literature, and the Arts operated this summer on the four-quarter basis. It is hoped that other colleges will join the Medical School, the College of Engineering and Architecture, and the School of Chemistry in regarding the Summer Session as an integral part of the university year.

Special features.—The National Education Association held its annual meeting in Minneapolis from July 2 to 6, 1928. Because of the presence of large numbers of teachers in our city it seemed advisable to enlarge the program of the Summer Session by the addition of special features.

Demonstration school, Winnetka plan.—Superintendent Carleton Washburne and a group of Winnetka teachers, during the first term of the Summer Session, demonstrated methods of instruction developed at Winnetka, Illinois. Ninety-two registered students attended the demonstration school.

Institute on Higher Education.—The University of Minnesota conducted the second Institute on Higher Education from July 9 to 20, 1928. Perhaps on account of competing institutes of similar character elsewhere, the institute this year was not as great a success as had been anticipated. The Institute on Professional Problems of Teachers, and the Institute on School Library Administration were only fairly well attended.

Recreation.—The recreation program was carried out as usual. This included, in addition to physical activities, lectures, musical recitals, performances of drama, recitals of dramatic literature, performances of motion pictures, social gatherings, and excursions in and about the Twin Cities.

Respectfully submitted,

HARLOW C. RICHARDSON, *Associate
Director of Summer Session*

DEPARTMENT OF PHYSICAL EDUCATION AND ATHLETICS

To the President of the University:

SIR: I submit herewith a report for the Department of Physical Education and Athletics for the academic year 1927-28.

Efforts have been made to limit this report as far as possible to objective material with a minimum of interpretation. Reports of individual staff members which formed the basis of this material are on file in this office for examination should more detailed information be desired. The activities of the University Recreation Field elsewhere reported are not included here.

Medical and physical examinations for all entering men were again conducted jointly with the University Health Service. During Freshman Week, 2,113 were examined; 667 petitions for exemption from or postponement of military drill were made on account of physical disability—480 of these were granted.

Personal hygiene, required of all freshmen in the Colleges of Science, Literature, and the Arts, Education, Dentistry, and School of Medicine, was again taught with a total of 1,049 students registered.

STATISTICAL TABLE OF REQUIRED PHYSICAL EDUCATION GIVING
DATA ON REGISTRATION, SEASONAL DISTRIBUTION OF STUDENTS
IN PROGRAM OF ACTIVITIES, AND SUMMARY OF GRADES

	Registered	Regular Work	Football	Baseball	Track	Basket-Ball	Wrestling	Hockey	Adv. Swimming	Elem. Swimming	Fresh. Swimming	Tennis	Gymnastics	Cross Country	Passed	Failed	Incomplete	Cancelled
Fall	1393	999	87	...	...	14	...	...	105	226	29	2	10	25	1058	125	32	178
Winter ...	1085	826	9	5	31	14	7	12	97	131	19	2	...	...	787	146	9	143
Spring ...	842	521	33	39	29	15	3	...	70	89	13	22	8	...	655	82	11	94

Significant points not brought out in the table might be enumerated as follows:

1. Of 294 students who were unable to pass the swimming requirement on entering the University and were therefore registered in elementary swimming, only three failed to pass the required test by the end of the regular college year.

2. In the spring quarter all classes were transferred to the Field House and Stadium.

3. With the shifting of classes to the Stadium and Field House, it was possible to give all students in required physical education an introduction to the fundamentals of handball, squash racquets, volley ball, and diamond ball.

4. This new arrangement made more efficient work possible. The Field House and Stadium are always available. There will be no dismissal

ing of classes or cessation of regular work due to convocations, recitals, military work, or inclement weather. The handball and squash racquets courts and indoor track facilities in the Stadium and the basket-ball, baseball, volley ball, soccer, football, and kitten ball possibilities in the Field House make possible a program which will be carried on regardless of outside conditions and which will be developmental, recreative, and educational.

Intramural athletics show a continued healthy development. The partial availability of the Field House during the winter and spring quarters has relieved congestion in the Armory and provided available new facilities for intramural activities. The new University Recreation Field was partially used for winter sports activities in the form of skiing, tobogganing, and skating with equipment purchased from intramural funds and gives promise for the development of an attractive outdoor program in another year. The Senate Committee on Intercollegiate Athletics made the Minneapolis Arena available for ten all-university nights of skating activities open to all athletic season ticket holders without extra charge. The statistical table presented below epitomizes intramural athletic activities.

INTRAMURAL PARTICIPATION RECORD

Sports	Leagues and Tournaments	Unorganized Recreation	Sport Carnivals	No. of Games and Contests	Grand Total	
					Each Sport	Less Duplication
Touch football...	393	75	...	175	...	400
Tennis	716	1220	...	625	...	...
Swimming	46	...	...	6	...	...
Basket-ball	827	320	...	281	...	...
Indoor track ...	96	...	...	6	...	...
Relays	60	...	...	4	...	...
Volley ball	125	25	...	92	150	150
Boxing .....	...	137	...	...	...	...
Wrestling	48	71	...	24	...	...
Skating .....	...	655	...	...	...	...
Skiing .....	...	255	...	...	...	...
Hockey	227	...	...	79	...	...
Handball	172	60	...	154	...	...
Squash	62	37	...	89	...	...
Bowling	156	20	...	125	176	176
Rifle shooting...	1358*	...	...	10	2223*	2223
Mass games ...	...	...	387	...	...	...
Baseball	288	36	...	74	...	...
Soft baseball ...	896	128	...	181	...	...
Track	117	...	...	9	...	...
Golf	325	1500	...	10	...	...
Horseshoes	174	...	...	203	...	...
Sigma Delta Psi	85	...	...	11	...	...
Outside trk. meets ...	...	...	831	5	...	...
Grand totals	9148	4539	1218	2163	.....	.....

* The participation figures where two departments have co-operated in promoting an activity—both Intramural and the R.O.T.C. should receive credit. Any starred activity is only included once in the "Grand Total for Each Sport" column.

Engaged in intramural athletics, 1683 fraternity men (no duplications).

THE PRESIDENT'S REPORT

Orthopedic physical education classes were conducted each day throughout the fall, winter, and spring quarters. In addition two hours daily were set aside for consultation and advice with individual students on personal physical education problems and programs.

The year 1927-28 in intercollegiate athletics is marked by the following unusual events:

1. The completion of the new Field House with its splendid facilities for a wide program of physical education activities and financed from the receipts of intercollegiate athletics.

2. The development of exceptionally high grade teams in football and hockey and very good teams in swimming and cross country.

3. The financing of "A Personnel Study of Freshman Football Candidates." This study is highly objective in character. The committee is also financing another study on "College Athletics and Scholarship" to be made by the Committee on Educational Research in co-operation with the Carnegie Foundation for the Advancement of Teaching. This study is well under way and should be completed in the near future.

Other significant achievements in intercollegiate athletics during the year are summarized in the following table:

STATISTICAL TABLE OF INTERCOLLEGIATE ATHLETICS, 1927-28

Activity and Head Coach	Total Number Games	Number Conference Games	Number Non-Conference Games	Total No. Received Athletic Instruction Including Freshmen	Number Varsity Candidates	Number Freshman Candidates	Number with Intercollegiate Competition	Number "M's" Awarded	Number Numerals Awarded
Baseball	16	11	5	191	96	95	17	11	14
Basket-ball	16	12	4	222	72	150	10	9	15
Cross country	3	2	1	89	31	58	14	4	7
Football	8	4	4	243	68	175	26	23	24
Gymnastics	2	2	0	35	10	25	6	2	0
Golf	3	1	2	10	10	0	4	2	0
Hockey	15	8	7	98	52	46	14	14	14
Swimming	8	4	4	96	22	74	11	9	15
Tennis	6	6	0	60	35	25	10	3	0
Track	5	5	0	230	120	110	33	13	21
Wrestling	5	5	0	175	97	78	8	6	10
Totals	87	60	27	1449	613	836	153	96	120

The tabulated and charted information which follows gives detailed information covering the past two years as to gross and net receipts from all sources.

COMPARATIVE REPORT OF GROSS RECEIPTS FROM ALL QUARTERS

Item	Attendance (Home)	Receipts (Home)	Receipts (Away)	Gross 1927-28	Gross 1926-27
Football	284,040	\$265,449.50	\$153,855.31	\$419,304.81	\$349,497.23
			178.00*		
Basket-ball	44,843	12,872.00		12,872.00	6,157.00
Hockey	15,519	1,293.25		1,293.25	902.00
Wrestling and gym- nastics	2,204	40.50		40.40	375.00†
Swimming	666	30.50		30.50	200.00†
Baseball	8,480	143.00	891.06†	1,034.06	1,028.19
Track	4,823	182.00	184.03†	366.03	420.01
Tennis			40.00†	40.00	40.00
Student books		42,482.00		42,482.00	41,371.50
Fees		2,773.01		2,773.01	2,476.48
Interscholastic Swim- ming Meet		65.00		65.00	59.00
Interest (daily)				18.61	16.16
Gridgraph		168.00		168.00	124.00
Railroad refunds..				45.76	94.57
Official refunds				300.00	150.00
Readjustments				435.81	
Field House rental				600.00	
Sundry				199.60	124.49
Program contracts..				7,729.75	5,855.78
Interest on certifi- cates of deposit..				8,443.61	4,272.82
Totals	360,575	\$325,498.76	\$155,108.40	\$498,242.30	\$413,585.12
Other (Walter Camp, etc.)					716.90

* Complimentary tickets to games away.

† Guarantee received.

The teacher training courses in physical education for men showed a small increase in registration in the fall quarter.

Respectfully submitted,

F. W. LUEHRING, *Director*

THE DEPARTMENT OF PHYSICAL EDUCATION FOR WOMEN

To the President of the University:

SIR: I beg to submit my report on the work of the Department of Physical Education for Women for the year 1927-28.

Physical examinations.—Physical examinations were given during Freshman Week in the fall to all the newly entering students and to the University High School students. We examined during this week 1,222 students.

The freshman required course.—The organization of this course as a fundamental orientation or exploratory course in physical education for the newly entering students was continued as in previous years.

Sophomore required course.—Two courses have been added to the sophomore courses in physical education, i.e., beginning and advanced golf and horseback riding.

Orthopedic gymnastics.—As a result of the findings of the physical examinations given to the newly entering students at the beginning of each quarter, many students are placed in the orthopedic division of Physical Education. These students are given individual attention and are classified into four general groups: (1) faulty body statics, both in posture and in lateral curvature of the spine, (2) pathological conditions, (3) remedial conditions which are largely functional, (4) temporary disabilities. The students have responded splendidly to the work in this course and the results in improvement, especially in posture, have been gratifying.

This division also takes care of the "follow-up" work which consists of individual conferences with those students who have minor functional disorders or more serious organic defects which need to be more fully investigated. Conferences were held with 374 students this year. The orthopedic division is constantly expanding and is seriously handicapped in its work by lack of space.

Professional training course.—A change was made this year in the high school practice teaching to conform with the plan followed by other departments. Our former practice of having the seniors start in immediately with the form of teaching which involves the substitute for the regular teacher was changed to having them observe and make reports on their observations for two weeks before actual teaching.

The practice teaching in hygiene was very satisfactory. Projects for correlating the teaching of health with motor activities were carried on by our seniors at the Motley School and at the Parochial School. The group at the Parochial School worked in the problem of nutrition and was successful in getting definite results in knowledge, habits, and actual improvement in health.

The Women's Athletic Association.—The Women's Athletic Association has had an unusually successful year under the leadership of its

capable president, Margaret Murray, and a progressive governing board. Their efforts were centered on the idea of providing a broad and varied program of activities in which all women students might participate with interest and satisfaction.

Women's intramural program.—This year a great deal of time and effort has been given to developing a broad and varied program of recreational sports in which all women of the University might participate with interest and satisfaction. The following activities were offered: golf, horseshoe pitching, bowling, basket-ball, swimming, baseball, tennis, track, and horseback riding.

Dance program.—For the first time in two years we resumed the practice of holding an annual dance program out of doors on the knoll. It was given up for the past two years in order to participate in the all-university productions of *Aida* and *Carmen*.

The dance program was held in the evening of June 1. It was based on a series of sketches from *Sherwood*, by Alfred Noyes, and the music was from Reginald De Koven's opera *Robinhood*. The program was planned largely by the junior students in the class of pageantry.

Intramural Sports Committee.—The chairmanship of the Committee on Intramural Sports was held by the acting director of this department during the year, and the secretaryship was held by Mr. W. R. Smith, of the Department of Athletics. The committee held a meeting each quarter to discuss and to act on matters of material interest to the men and women students of the University.

Golf Committee.—As acting director of this department I have met with the Golf Committee during the past year.

Summer school.—We made no changes in the courses offered during the Summer Session this year. The program was carried by five full time instructors and two half time instructors. Two additional sections of golf were added to accommodate those who wished to take the course.

Extension Division.—Two evening classes in swimming were held Mondays and Wednesdays throughout the year. The enrolment during the first semester was 90 and during the second semester, 62.

Respectfully submitted,

MAY S. KISSOCK, *Acting Director*

DEPARTMENT OF MILITARY SCIENCE AND TACTICS

To the President of the University:

SIR: I have the honor to submit the following report of the Department of Military Science and Tactics for the year 1927-28:

The report of the annual inspection conducted on May 14, 15, and 16 is very gratifying in that it finds the work of the year very satisfactory. The inspection was conducted by the corps area commander. From our standpoint it was the most satisfactory inspection we have had during the time I have been in charge of the department.

During the year, practically all the matters that were taken up by you as the chairman of the Committee on Military Affairs of the National Association of State Universities have been satisfactorily adjusted by the War Department. I make especial mention of the matter of commutation for advanced course uniforms. You will recall that a year ago, by act of Congress, the amount was reduced from \$30 to \$14.30. For the coming year, the full \$30 has been restored and those students who entered the advanced courses last year and had to pay in part for their uniforms will be reimbursed for the amount paid.

I take this occasion to express my appreciation to the administrative officers and college faculties for the fine spirit of co-operation they have shown throughout the year.

Respectfully submitted,
BERNARD LENTZ, *Major*

THE GEOLOGICAL SURVEY

To the President of the University:

SIR: I herewith submit a report on the activities of the Minnesota Geological Survey during the period from July 1, 1927, to July 1, 1928.

The survey was allotted the sum of \$16,000 for the biennium beginning July 1, 1927. While a portion of this was set aside for publication of maps and reports, work has been pushed forward in accordance with plans outlined in earlier reports to the president of the University and as published in his previous annual reports. On July 1, 1928, there were in progress, or completed but still unpublished, the following investigations:

1. Dr. F. F. Grout completed the field work on the Rove slate and the mapping of the formations along the international boundary. Dr. G. M. Schwartz was engaged on the same field problem and they were assisted by Mr. Francis Wells and Mr. William Pettijohn. This is one of the most important pieces of work attempted by the survey in recent years and covers an area of which the geology had been but partially known. The report is now in preparation and will soon be published as a bulletin.

2. Dr. George A. Thiel continued his investigations of the marl resources of the state. In these deposits there is an asset of great potential value for mineral feed, fertilizer, and probably for the manufacture of Portland cement.

3. The investigation of underground waters and subsurface geology of northwestern Minnesota is now nearly complete. Dr. I. S. Allison spent most of the summer of 1927 writing the final report and preparing the maps. In addition, advice has been given to a large number of well-drillers, land owners, and municipalities regarding local problems of geology and water resources. The city of Worthington, Minnesota, received particular assistance of this sort, entirely without cost to the city. Dr. Allison has been working in co-operation with the Minnesota Well-Drillers Association in order to place the resources and information of the survey at the disposal of drillers and in turn to receive from the drillers further information regarding the subsurface conditions throughout the state. Dr. Allison accepted the association's invitation to address the well-drillers at their annual convention in February, 1928.

4. The limestone deposits of southeastern Minnesota were studied in further detail by Dr. C. R. Stauffer. Some of the samples that had been obtained during the previous year showed an extremely low magnesium content and it was the purpose of the field season of 1927 to determine whether this high grade limestone was of sufficient extent and depth to justify its exploitation for Portland cement manufacture. Some years ago this survey called attention to the unusually pure limestone deposits of Devonian age outcropping at Le Roy, Minnesota; but the thickness of this deposit is not sufficiently great to attract industries using

limestone on a large scale. During 1927, therefore, attention was directed to the older limestones in the state, most of which belong to the Ordovician. Numerous samples were taken over a wide area. Those from the Prosser limestone, or lower part of the Galena, show a magnesium content ranging from .79 to 2.82 per cent, or averaging about 1.50 per cent over a rather large area. This is well within the range allowed for Portland cement purposes, and this limestone is regarded very highly by the survey. Moreover, in some regions, such as Chatfield, the stripping is light and the shale, necessary for the proper mix, occurs in the same bluff. The thickness of this high grade limestone averages nearly fifty feet and it is distributed over sufficient acreage to be attractive to the cement industry. It is, in fact, one of our most promising natural resources at the present time.

In addition to the special investigations briefly outlined above, the survey has answered numerous inquiries that have come to the office daily. These requests for information cover a wide variety of subjects ranging from identification of water, oil, and gas resources to the ores, fluxes, building and ornamental stones. In many cases samples are sent out for testing by those interested and thus the survey is attempting to bring to the state new industries that could be profitably located within its borders. This service is rendered without charge to all applying and has been constantly increasing in recent years.

Respectfully submitted,

W. H. EMMONS, *Director*

THE MUSEUM OF NATURAL HISTORY

To the President of the University:

SIR: I have the honor to submit the following report of the condition and activities of the Museum of Natural History for the year ending June 30, 1928.

MUSEUM

During the past year the museum has actively maintained the same lines of work as in recent years with the addition of one important new outside contact, preparation for which has been in progress for some time. This is the loaning of small portable groups to the public schools which brings the museum to a large number of pupils who might not otherwise have the chance to inspect the exhibits. Only a comparatively small beginning was made as but 15 groups were put in circulation this year, but it is the initiation of a long-planned project which it is hoped will expand to considerable proportions in the years to come. The co-operation of the Minneapolis Board of Education was all that could be desired. The museum loaned the groups and the reflectors and the board equipped 15 buildings with hanging devices and electrical connections patterned after those in the museum which insured the exhibits being safely and effectively displayed. Late in October one of the large school trucks called for the cases which were inclosed separately in substantial shipping containers. They were delivered, one to each of the 15 schools chosen and every 2 weeks thereafter the entire series was moved ahead one building, so that at the end of 30 weeks each school had had the entire 15 exhibits. This was done so carefully and methodically by the two men in charge of the truck that no injury of any consequence was done to the cases or their contents and the whole plan worked smoothly and satisfactorily. Miss Jennie Hall, supervisor of nature study in the public schools, entered cordially and enthusiastically into the scheme and planned and superintended the working out of the details in the schools.

Numerous comments were made even by the children on the electric lighting of the groups which, so far as we know, has never been attempted in any other city where this method of visual education is being carried on.

Printed descriptive text accompanied each group which was designed for adults and older children. Some at least of the teachers cleverly rearranged this matter in simpler form and prepared questions suited to the age of the pupils which brought out more clearly the salient points in the text. Samples kindly sent to us may serve as guides in the future preparation of labels for young children. Aside from the instruction in nature study, many of these exhibits are so artistically worked out that they possess all the esthetic and cultural qualities of a fine picture.

The cases were returned to the museum in June in generally good condition. It is expected that a larger number will be put in circulation

next winter as many of the teachers not included this time are hoping to receive them hereafter.

Exhibits.—The large group, known as the Pipestone Prairie Group, described in previous reports was completed and opened to the public in October. It has received high praise from competent judges and is generally considered to be the most attractive, instructive, and technically perfect group in the museum. It is the gift of Mr. James Ford Bell. It was constructed by Mr. W. J. Breckenridge, the present museum preparator, although considerable of the material was collected in North Dakota by Mr. and Mrs. Jenness Richardson before they severed their connection with the museum. The setting and general scheme of the group as a prairie association of plants and animals with the famous Red Pipestone Quarries as a background was an idea of the director. The foreground arrangement or model was largely designed by Mr. Richardson but underwent various minor modifications by Mr. Breckenridge in the course of construction. The background was painted by Mr. R. Bruce Horsfall of Washington. This exhibit was written up very fully by Mr. Thomas E. Steward in an illustrated article in *Minnesota Chats* for December, 1927. This article attracted much attention to the group.

Study collections.—Two hundred seventy-seven bird skins and 34 mammal skins have been added to the study collections during the year. A number of other specimens secured are retained especially for group work and not included here. These collections are in frequent use for study and reference by students both within and without the University.

Accessions to museum.—The list prepared for the regents and filed in the president's office shows in detail the accessions that have been made to the museum during the past year and the sources from which they have been received.

An item of exceptional interest and value is a set of the double folio edition of Audubon's *Birds of America*. This was presented to the museum by the heirs of Mr. William Overton Winston with the following letter of transmittal:

Minneapolis, Minnesota.
January Twentieth, 1928.

Zoological Museum,
University of Minnesota,
Minneapolis, Minnesota.

DEAR SIRS:

Because of the special interest of William Overton Winston in the Zoological Museum of the University of Minnesota, as well as because of his life-long friendship for its Director, Dr. Thomas S. Roberts, we, the family of Mr. Winston, in his memory, present to the Zoological Museum of the University of Minnesota, this set of the Double Elephant Folio Edition of the works of John James Audubon, with the request that it be retained in the museum as a special exhibit.

Very sincerely yours,

Francisca S. Winston,
Charles S. Whitaker,
Donald Winston,
William O. Winston, Jr.,
Frederick S. Winston.

The four volumes are complete in every detail, in perfect condition, and are contained in a specially constructed mahogany cabinet built with a tilting top for convenience in viewing the ponderous books. For the present the cabinet containing the books has been installed in a railed-off area in a room on the second floor of the Zoology Building, where it is safe and where the volumes can be easily and conveniently shown to visitors. The University as well as the museum is very grateful to the Winston family for this generous and rare gift.

Complete lecture schedule.—The illustrated lectures and museum tours for groups of children from the public schools have continued as heretofore.

FIELD WORK

From September 28 to October 10 Mr. Beckenridge was at Ten Mile Lake in Otter Tail County with the main purpose of collecting ducks for museum groups. From October 4 to 10 the director and Mr. Kilgore joined him and a good series of specimens was secured, including a number of other species besides ducks. It was through the courtesy and co-operation of J. F. Bell, F. M. Crosby, C. C. Bovey, W. H. Bovey, and C. D. Velie, members of a gun club leasing grounds at Prohosky's Camp that the privilege of occupying quarters and shooting at this favored spot was granted.

Mr. Breckenridge was on the Minnesota north shore of Lake Superior from May 14 to 21 with the purpose of locating if possible nesting places of the duck hawk, getting information about the fast disappearing Canada grouse, and making a study of bird conditions along the shore at that time of the year.

From June 6 to 30, inclusive, the director, Mr. Kilgore, and Mr. Breckenridge made an extensive trip by automobile to the northern part of the state in the interests of the museum. The itinerary, with numerous side trips, covered nearly 2,400 miles, entirely within the boundaries of Minnesota. Most of the time was spent in the Red River Valley collecting specimens and gathering information in regard to the present day wild life conditions.

Respectfully submitted,

THOMAS S. ROBERTS, *Director*

THE UNIVERSITY LIBRARY

To the President of the University:

SIR: Herewith is submitted a summary report of the library activities of the University for the academic year ending June 30, 1928.

There are no strikingly novel things to record either in accessions or procedure. The work in all departments is steadily increasing. It is only a question of a short time until there must either be a corresponding increase in the staff or failure to meet even the legitimate demands made on the library. In proportion as the University Library becomes what it is so often asserted to be, "the heart of the university," it must be possible to meet increased opportunities for usefulness with a staff adequate in number and training for the service it attempts to give.

For the past few years there has been a very gratifying growth in the books belonging to the library and its branches. The publication of the *Union List of Serials* shows that, in respect to this important type of material, the library already ranks well among the university libraries of the country, despite its late start and its limited funds through the greater part of its history. The high efficiency of the collection is due in very large part to the special knowledge and the interest of the members of the faculty who assist in selecting the books. In scarcely less measure the standard of staff service is maintained at its present level through the interest and friendly attitude of the faculty and students. Criticism of our practice is not wanting, but it is, for the most part, constructive and intelligent.

There has been a steady increase in the acquisition of important items and this year shows more important sets added than in any other year on record. On the other hand, there have not been as many unusually expensive sets added, largely because a considerable proportion of those desired are already in the library. Probably the most notable additions in any single field have been in Italian medicine, surgery, and anthropology. We have also added a considerable number of books published prior to 1700.

As a practical means of avoiding unduly expensive duplication through co-operation, an informal agreement has been made with the University of Michigan, by which Michigan will emphasize as much as possible the purchase of French serials, while Minnesota will attempt, as far as funds permit, to purchase serials relating to the Scandinavian countries and the Baltic regions. This is logical, not only in view of the large number of residents of Minnesota who are of Scandinavian descent, but because of the excellent beginning which has already been made in collecting publications relating to this region. We are perhaps weakest in Icelandic and Finnish publications. A group of Finnish residents, of Virginia, Minnesota, has given us a small representative collection of modern Finnish books, and several prominent Minnesotans of Icelandic descent have expressed an interest in the Icelandic material we have already secured.

Concrete evidence of the increase in value of the library, as well as in its size is reflected in the increasing number of interlibrary loans.

At their meeting of January 6, the regents, at the suggestion of Dr. W. W. Folwell, established a Department of Archives to be maintained in the University Library under the general direction of the university librarian. Some material, manuscript and printed, has already been received from several schools, colleges, and administrative departments, but the possibilities of collecting and preserving the scattered though voluminous items of historic value relating to the University are still greater than the actual accomplishment.

Perhaps the most important single event affecting the library during the year was the establishment at the regents' meeting of April 5, 1928, of a Division of Library Instruction, under the directorship of the university librarian. The purpose of the division is to organize and promote facilities for training in library methods and to offer programs in library training to colleges and other instructional units desiring them. Programs of a full year (the fourth year of the undergraduate course) and leading to the degree bachelor of science, will be offered next September, under the direction of the Division of Library Instruction, in the College of Science, Literature, and the Arts and the College of Education. The establishment of the division is the result of an apparently widespread and persistent demand, throughout the state and the neighboring states from which the University draws many of its students, for such training.

In the courses in library training given during the Summer Session of 1928 there was a total enrolment of 202 different students. The establishment of a regular course with which these summer courses can be correlated should mean a decided advance as well in the opportunities for library training which may hereafter be given in the Summer Session.

If modern methods of education persist and develop, the need of competent library service will increase far above any general recognition of its present necessity. Training in bibliographic knowledge will doubtless so be recognized as a desirable part of the equipment of faculty members, especially those concerned with honor courses and other individualized methods of instruction.

Respectfully submitted,

FRANK K. WALTER, *Librarian.*

THE INTERFRATERNITY COUNCIL

To the President of the University:

SIR: I herewith submit my report as president of the Interfraternity Council for the year ending June 30, 1928.

Scholarship.—The average scholastic standing of the fraternity men (in the council) was 1.091. That of all the men in the University was 1.179.

Changes in rushing rules.—Sections 1 (e), 2 (a) and 2 (e) of Article III were changed to read as follows:

Section 1 (e) The office of the President of this Council shall act as the agency through which the fraternities shall obtain dates prior to 5:20 P. M., of the last day of the quarter, covering the first four (4) days of the rush period.

Section 2 (a) Pledging shall be on the eighth day after six o'clock P. M., of the second quarter counting the first day of classes as day No. 1. (This means the second quarter of the students' residence.)

Section 2 (e) No fraternity shall be permitted to have more than three dates with any one student during the first four days of rushing.

Changes in membership.—Chi Sigma Phi—a local fraternity—disbanded at the beginning of the academic year. Chi Delta Xi was granted a charter in Chi Phi, a national fraternity, and has been duly installed. Consequently, there are now no local academic fraternities in the council.

Respectfully submitted,

W. F. HOLMAN, *President*

FIELD SECRETARY AND GENERAL ALUMNI ASSOCIATION

To the President of the University:

SIR: I submit herewith the combined reports of field secretary and secretary of the General Alumni Association in view of the fact that the functions of both overlap to a large extent.

Alumni Board.—The directors of the General Alumni Association for the current year were Edgar F. Zelle, president; Caroline Crosby, vice-president; Thomas F. Wallace, treasurer; Clara H. Koenig, LeRoy A. Page, representatives of the College of Science, Literature, and the Arts; Fred A. Otto, Jay C. Vincent, Engineering and Architecture; Monica Jones Aamodt, Frank W. Peck, Agriculture, Forestry, and Home Economics; C. F. E. Peterson, Tracy J. Peycke, Law; N. O. Pearce, H. E. Michelson, Medicine; Torger A. Hoverstad, School of Agriculture; Frederick V. Davidson, Joseph Shellman, Dentistry; Charles V. Netz, Pharmacy; R. J. Mayo, Education; Frank J. Tupa, Business Administration; John C. Benson, Raymond P. Chase, Irene R. Edmonds, Earle R. Hare, Daniel S. Helmick, William H. Oppenheimer, Benjamin W. Palmer, Orren E. Sanford, Leroy Sanford, and Robert M. Thompson, directors-at-large; Dr. William F. Braasch, first district. Regular meetings are held on the first Tuesday in October, March, and May, and the second Tuesday in January. Full reports of these meetings are printed in the *Weekly* following. New members elected at large on the June ballot are Raymond P. Chase, Spencer Cleland, Robert E. Ford, Arthur B. Fruen, and Dr. O. S. Wyatt, replacing John C. Benson, Raymond P. Chase, Earle R. Hare, Benjamin W. Palmer, and Robert M. Thompson.

Committees.—The constitution provides that there shall be annual reports printed in the *Alumni Weekly* covering the activities of the Advisory Editorial Committee and the Committees on Investments and Athletics. These reports were printed in full in the *Weekly* of June 2 and adopted by vote at the alumni meeting June 11. The association is under obligation to the members of these as well as of the other committees of the board who have given voluntarily of their time and energy in the interests of the alumni organization.

Alumni Weekly.—At the close of the fiscal year, July 1, 1927, the deficit of the Alumni Association was reduced from \$5,1185.81 to \$3,621.76. In other words, the books for the year showed a profit of \$1,564.05. At the meeting of May 8, 1928, the financial statement showed continued improvement. Every effort is being made to wipe out the deficit as quickly as possible. This purpose has necessitated sacrificing somewhat the news material of the *Weekly* to advertising. Our readers have sensed this and some objections have been voiced. The Advisory Editorial Committee, being sensitive to this situation, made the following statement in its annual report: "The committee believes that the lack of balance between news

and advertising in some issues of the *Weekly* due to the need of funds to aid in placing the publication on a sound financial basis, reflects a temporary expedient and will be remedied as financial conditions improve."

The American Alumni Council conducts an alumni magazine clinic in which the experts appraise the various alumni publications. These critics said of the *Minnesota Alumni Weekly*:

In many ways here is almost the ideal alumni weekly. It is handsome, progressive, alert, keenly up to date and even ahead of time, has the charm of the unexpected and has personality.

The *Weekly* is first thought of for its typographical graces. The make-up is unique and handsome—a combination not often found. Cuts are used dexterously; the editor is a past master in getting new effects from cuts. He is one of the few who can safely be trusted not to make a mess with old cuts. Type faces and sizes are harmonious, except that the editor has a taste for a rather freakish Italic headline which we confess we do not like, even though the Curtis Publishing Company and others are running to that style. Some of the cap letters have long monkey-like tails running out into the margins. Very effective use is often made of little thumb-like sketches. The editor has a keen eye for page layouts; he juggles his material around in surprising fashion.

Also the wording of the headlines is original and well thought out; they tell the story adequately and interestingly. The articles themselves are closely edited and free of surplus wordage.

Homecoming.—Tradition has decreed that the night before the big home game shall be the time set for the homecoming alumni dinner. These functions are held in the ballroom of the Minnesota Union, the attendance ranging from 300 to 600, depending upon the weather and the attractiveness of the game the following day. No business is transacted at this meeting except in that brief portion set aside for the election of officers of the Academic Alumni Association.

University singers.—The secretary, with the cordial assistance of alumni in Rochester and Mankato, arranged for Mr. Killeen's group of fifty men and women singers to give concerts in these two cities March 20 and 21. The students were housed in the homes of the local residents and every economy practiced in order to finance the venture. The singers traveled by motor busses. Alumni and citizens reacted very favorably toward this venture and were very enthusiastic in their praise of the performance. Dr. W. F. Braasch of Rochester and Mr. A. G. Scheidel of Mankato, local alumni leaders, directed the arrangements. The admission price in each town was 75 cents. Trips of this sort should be encouraged. Citizens of the state in this way get a close-up view of an outstanding group of wholesome, clean-cut, and talented representatives of the student body and form higher opinions of the University after a visit of this kind. Such trips should be subsidized in some way so that popular prices for the concerts may obtain in the communities visited.

American Alumni Council.—This international association of alumni workers held its fifteenth annual convention May 3, 4, and 5 at the University of Minnesota. There were delegates present representing forty-eight alumni associations of colleges and universities in the United States and Canada. It was the good fortune of our association to act as host on this occasion. The meetings were held in the reception room of the

Minnesota Union. President Coffman gave the address of welcome and spoke on the subject, "The American College and Its Alumni." The address was published in the *Weekly* of May 19. The following topics were discussed:

- "The Continuation of Intellectual Relations Between Colleges and Alumni"—Daniel Lindsey Grant, director committee of the University of North Carolina.
- "Committee Work, Its Technique, Successful Methods and Dangers"—S. D. Mead, Secretary of the Merchants' Association of New York.
- "What Does the Subscriber Want in His Magazine?"—Winthrop B. Chamberlain, *The Minneapolis Journal*.
- "Is Alumni Fund Raising a Seasonal Industry? How and When Three Successful Alumni Fund Secretaries Spend Their Time?"—Gertrude V. Bruyn, Mt. Holyoke College.
- "The Small Endowed Colleges, Including Women's Colleges"—Harriet Sawyer, Vassar.
- "The Large Endowed Universities"—Foster M. Coffin, Cornell.
- "State Universities"—Robert Sibley, California.
- "High Spots of the Council's Publications"—R. W. Sailor, Cornell.
- "Alumni Radio Programs"—Frederic G. Higbee.

Northrop Memorial Auditorium.—On May 11, 1928, the Greater University Corporation voted to concur in the action of the Board of Regents of the University in the award of the general contract for the construction of the Auditorium to the Paul Steenberg Construction Company. Work on the building is well under way and it is expected that the structure will be completed in the spring of 1929. This action provides for the final disposition of funds collected by the corporation for the Stadium-Auditorium fund. Not all the fund subscribed has been collected, nor will be, but the corporation pledges to pay to the University from time to time such moneys as may be collected, in reimbursement of funds which the University has advanced toward construction.

Annual meeting.—The program to a certain extent was under the direction of the class of 1903, the quarter-century class. This group won the trophy for the largest class attendance. Ray Chase, '03, state auditor, was toastmaster and presided with a practiced hand. The '03 class had as its objective the raising of a fund that should be the first contribution toward the erection of a building on the campus to be known as Alumni Hall. It is their hope that other classes may contribute to the fund until eventually the building will be a reality. George R. Martin, representing '02, announced the presentation of a fund of \$2,300 to the regents for a class memorial loan fund. The class of 1878 (fifty-year class) won the cup for the largest proportional attendance, having five out of seven living members present. Allan Calhoun, '05 Mines, by coming from India, won the cup for traveling the longest distance to attend the meeting.

Medical banquet.—Minnesota medics under the leadership of N. O. Pearce, '05; O. S. Wyatt, '19; H. E. Michelson, '12; D. H. Daniel, '19; R. A. Johnson, '15; and W. R. Shannon, '19, took advantage of the American Medical Association meeting in Minneapolis June 11 to 15 to stage a gathering of all Minnesota medics on the evening of June 13 at the Nicollet Hotel ballroom. I believe it is no exaggeration to say that this was the

largest attendance of alumni ever assembled at a dinner or called meeting. Seven hundred thirty-five plates were served and after the dinner hundreds of others came in to listen to the program. A resolution was adopted which makes provision for the careful study of plans looking toward the establishment of an alumni medical school which might offer specialized short courses for medical graduates in the fall quarter or at such other time as may be found desirable. Of course, a meeting of this kind could not be staged every year. However, it might be possible for the various alumni groups, Law, Education, Engineering, etc., to arrange a dinner each spring at which the graduating seniors of that group would be guests. Such a program would do much to visualize for the seniors the real quality and caliber of the alumni body and to create a liaison that would be far reaching in general alumni morale.

Alumni units.—Alumni in the Far West received a special inspiration this last fall through the visit of the president of the University. President Coffman with Mrs. Coffman left here early in October to meet certain speaking engagements in California, Oregon, and Washington. The Alumni Association seized this opportunity to book him to meet as far as possible our graduates on the Pacific Coast. He stopped first at San Diego on October fourteenth, at Los Angeles on the fifteenth; then a noon meeting with the Big Ten gathering at San Francisco where the program was in charge of the Minnesota contingent; next north to Portland, Oregon, where fifty-one old grads turned out on the twenty-fourth for their "most interesting and inspiring meeting." At Corvallis on the same day Mr. and Mrs. W. H. Martin entertained a score of Minnesotans at tea in honor of Mr. and Mrs. Coffman. At Spokane on the twenty-ninth eighty-one turned out to greet the president and at Seattle "thirty-five of the faithful" gathered to hear "a most interesting talk from the president." Altogether the president's trip was something like a triumphal march. Most enthusiastic and hearty were the letters commenting on his visit.

The alumni secretary attended the following meetings: October 3, St. Cloud; November 18, Detroit, Michigan, at which Mr. Zelle, president of the association, was also present and spoke; November 23, Alexandria; February 6, Rochester; February 23, Mankato; February 28, Willmar; March 2, Winona; May 10, Chicago; May 21, Duluth. The following meetings were held at which the secretary could not be present: March 13 and April 17, Chicago engineers; September 25 and October 29, Schenectady; November 11, Michigan and Minnesota alumni in joint meeting (jug luncheon) at Chicago; December, St. Louis; November 19 and March 29, Washington, D. C.; February 17, "M" Club annual meeting; March 14, Rochester, Minnesota; May 18, Milwaukee; June 23, Detroit, Michigan, picnic. A new unit is reported organized at Denver, Colorado, with O. L. Snyder, president, L. A. Stenger, Eng. '06, Gr. '16, vice-president, and Elizabeth Melrose Sherman, Ex. '21, secretary-treasurer.

Respectfully submitted,

E. B. PIERCE, *Field Secretary of the University and
Secretary of the General Alumni Association*

THE BUREAU FOR RESEARCH IN GOVERNMENT

To the President of the University:

SIR: During the past year the bureau has issued publications Numbers 7 and 8. These publications are as follows:

Publications, No. 7.—An Outline of County Government in Minnesota with Special Reference to Hennepin, Ramsey, and St. Louis Counties, by William Anderson and Bryce E. Lehman. 174 pages.

Publications, No. 8.—A System of Classification for Political Science Collections with Special Reference to the Needs of Municipal and Governmental Research Libraries, by William Anderson and Sophia Hall Glidden. 188 pages (actually 94).

The studies published by the bureau up to this time have covered in a descriptive way city, village, and county government. The bureau has also prepared several specialized studies dealing with the state constitution. The organization and the administration of towns and townships have not as yet been subjected to any careful study in this state, and the same may be said with reference to school districts. These constitute the only two classes of local government units which remain to be described. The bureau program embraces not only these works but also the preparation of a series of intensive works on particular problems in state and local government, such as personnel, finance, administrative methods, etc. The ultimate aim of the bureau's program is the complete description and understanding of all phases and problems of the government of the state and its subordinate units.

Continuing its work of supplementing the collection of the general library, the bureau has during the past year acquired files of several important series of publications in the field of local government. It is very evident that the students of the University have become acquainted with the bureau's special library. Each year has seen an increase in the number of students making use of its facilities, and during the past year there were many days when every available place at our study tables was occupied.

The bureau has continued to serve also as the headquarters for the work of the Central Northwest Regional Survey Committee.

Respectfully submitted,

WILLIAM ANDERSON, *Director*

THE EMPLOYMENT BUREAU

To the President of the University:

SIR: I submit the following statement of the business done by the University Employment Bureau between July 1, 1927, and July 1, 1928.

Nature of Employment	Requests for Applicants		Requests Filled	
	Men	Women	Men	Women
Athletic events (ticket takers, etc.)	1,019	..	1,019	..
Caring for children . . . . .	..	19	..	18
Chauffeurs	21	..	18	..
Cooks	3	4	3	1
Draughtsmen	11	..	11	..
Filling station service jobs	8	..	8	..
Housework	11	67	6	49
Laboratory helpers	5	..	5	..
Motion picture operators	12	..	12	..
Musicians and entertainers	31	9	29	8
Odd jobs	464	7	460	7
Office help	55	248	53	240
Sales	150	49	126	19
Sales (on commission)	65	22	3	2
Service jobs	81	4	73	4
Settlement house work	8	5	8	5
Summer resort jobs	9	10	9	10
Switchboard operators	11	1	9	1
Theater work (ushering, etc.)	216	..	200	..
Tutoring and translating	17	16	17	16
Waiter work	178	67	168	54
Miscellaneous	8	3	8	3
Totals	2,383	528	2,245	437
	Total 2,911		Total 2,682	

There were also a number of graduating students recommended for permanent positions of whom about twenty were located.

The total of 2,682 part time positions filled shows a gratifying increase of about 30 per cent over the total of 2,038 reported for the year previous.

Respectfully submitted,

DOROTHY G. JOHNSON

THE MINNESOTA UNION

To the President of the University:

SIR: I submit herewith a report on the work of the Minnesota Union, including financial statement, for the year 1927-28, prepared by the manager, M. M. Anderson.

The officers of the Board of Governors of the Minnesota Union for 1927-28 are as follows: President, E. B. Pierce; vice-president, Carlyle M. Linden; treasurer, Professor J. C. Sanderson; secretary, William Haggerty.

Only a few years ago an addition to the west end of the original Minnesota Union was built, giving a great deal of additional space to the cafeteria, study room, and ballroom. At that time it seemed that the size of the building would be sufficient to take care of our needs for several years. However, only two years later more changes were necessary in the east end of the building, where the Little Theater was removed and space given over to the use of students for recreation rooms, committee rooms, and offices. Then again two years ago another addition was made to the building to house the Campus Club, which is operating under its own management and has been flourishing in its new location. Each year an effort is made to salvage all unused space, since the building is very crowded at all times of the day during the entire school year. On several occasions during the year it has been necessary to have the ballroom in the building set up for large conferences during the day and rearranged for a large banquet in the early part of the evening, then the entire floor cleared and prepared for a party later the same evening.

The patronage in all departments has increased and there is a marked improvement in the morale of the students using the building.

The Union is now the campus headquarters for a large majority of the student and faculty functions. Besides the large number of faculty, student, city, state, and national organizations which are receiving dining room and banquet service in the building daily, there are many others which schedule meetings and conventions each week throughout the year. Some of these are listed below and serve to show the range of activities found here.

The Minnesota Tax Conference
The Minnesota Educational Association
Business managers of universities
Association of University Presidents of
the Northwest
Northwest athletic officials
Dad's Day
Mother's Day
Freshman Week
Alumni Association
Commerce Club
Medical Six O'Clock Club

University High School
French Club
Philippinesotans
German Club
Lutheran Students Association
Block and Bridle
Menorah Society
Minnesota Rowing Association
Trowel Fraternity
Chinese Students Club
Scabbard and Blade
Mortar and Ball

THE PRESIDENT'S REPORT

Homecoming Committee	Swedish Literary Society
Cosmopolitan Club	Forum
Faculty Dancing Club	Freshman Commission
American Alumni Council	Newman Club
Welding Conference	Unitarian Club
American Institute of Electrical Engineers	Senior Commission
American Society for Testing Materials	Forestry Club
American Society of Mechanical Engineers	Suiones Club
American Heating and Ventilating Engineers	Campus Study Club
American Chemical Society	Freshman Mixer
Sigma Xi	Sophomore Mixer
Mock political convention	Junior Mixer
Summer Session socials	Senior Mixer
Art exhibits	Cheer Leaders Club
Isaac Walton League	1929 Gopher Organization
"M" Banquet Association	Gopher Photographic Studio
General Extension Students Association	Big Sisters Association
W.S.G.A. sunlites	Checker and Chess Club

This list includes neither those organizations which have their social programs and parties in the Minnesota Union Friday and Saturday evenings during the year nor the large number of students, approximately 3,000 on an average day, who use the building during the day and evening for study, reading, and recreation.

Future plans.—The Board of Governors hopes that before long some definite plan as to the future outlook for the Minnesota Union can be reached. Under the present arrangement it is often a question in determining changes and improvements in the building whether or not it is economically sound to spend more money on the present building or to attempt to accumulate a small surplus with the hope that it will be the nucleus or starting point for an attempt some day in the future to secure funds with which to erect a new building which will compare favorably with those of other universities.

Some discussion has been entertained during the year regarding the advisability of establishing and maintaining a branch of the Minnesota Union to be used mainly as a clubhouse at the University of Minnesota Recreational Field. No definite plans have been made and the discussion will probably be continued at the beginning of the coming school year.

Respectfully submitted,

E. B. PIERCE, *President,*

Minnesota Union Board of Governors

THE INSTITUTE OF CHILD WELFARE

To the President of the University:

SIR: I herewith submit my report for the year 1927-28.

During the year 1927-28, the third year since its establishment in July, 1925, the work of the institute advanced along the lines previously laid out. The year was one of marked accomplishment in the three main phases of the program: research, instruction within the University, and parental education.

The Nursery School.—The Nursery School, with its thirty-six children selected by the same methods used in previous years, was in operation in full day session from September 26, 1927 to June 28, 1928, and in half day session during the first term of summer school, from June 18 to July 20, 1928. It was used extensively as a demonstration and observation center and for research studies.

Infant studies.—During the summer of 1927 the infant study project of the institute which had been planned earlier, got under way. Twenty-five prospective mothers agreed to co-operate in the study. Detailed observations of the physical and mental development of the infants were made, beginning with daily observations during hospitalization, followed by weekly observations thereafter. In addition, the mothers kept daily records on prepared forms of the infants' development. A tremendous amount of data has been, and is being, collected, some of which is now in process of analysis. The study throughout has been marked by exceptionally fine co-operation on the part of the mothers—co-operation without which the project would have been impossible.

Research.—In contrast to the previous years of the institute, relatively few projects were started, a total of only nineteen being undertaken. On the other hand, it was a year in which many projects started earlier were carried to completion, a year of much publication, and a year at the end of which the institute has a large amount of material ready for publication. The following list gives the project number, the title, the persons involved, and the department involved in the new projects started.

NEW RESEARCH PROJECTS

82. Tooth eruption in feeble-minded and tubercular children. (J. T. Cohen—Anatomy and Dentistry.)
83. Relation of personality traits to errors of precision in anatomical measurements. (J. E. Anderson, F. L. Goodenough, and E. Boyd—Institute.)
84. Relation of birth weight to test performance. (F. L. Goodenough—Institute.)
85. Relation of maturity in bodily form to mental development. (J. E. Anderson and F. L. Goodenough—Institute.)
86. Follow-up of school performance and general social adjustment of nursery school and non-nursery school children. (F. L. Goodenough and assistants—Institute.)
87. Sibling resemblance in test performance. (F. L. Goodenough and J. C. Foster—Institute.)

88. Sleep of young children—II. (J. C. Foster, F. L. Goodenough and J. E. Anderson—Institute.)
89. Sleep of young children—III. (C. R. Garvey—Psychology.)
90. A comparison of home situation of child guidance cases with control group cases. (Anne Culligan—Sociology.)
91. Results of practice and repetition on intelligence tests. (M. Eunice Snyder—Institute.)
92. Survey of play equipment and its uses. (Magda Skalet—Sociology.)
93. Study of range of information in kindergarten children. (Cathryn Probst—Education.)
94. A genetic study of laughter and its stimuli. (Florence Justin—Institute.)
95. Memory for space perception and spatial relationships. (Lucile Emerson—Institute.)
96. Incidence of symptoms of behavior maladjustment in young children in relation to home social history. (Violet Bemmels—Institute.)
97. Language development in twins. (Ella J. Day—Institute.)
98. Posture in young children. (E. Boyd and C. Palmer—Anatomy.)
99. The formation of dressing habits in young children. (Virginia Schneider—Home Economics.)
100. Color perception in infants. (Ruth Staples—Institute.)

A summary of the projects by departments is given in Table I.

TABLE I
Summary of Research Projects by Departments

Anatomy	20
Dentistry	5
Pediatrics	10
Psychology	8
Home Economics	6
Physiological Chemistry	1
Education	8
Sociology	8
Institute of Child Welfare	42
	108
Less duplication caused by projects in which two or more departments are involved	8
	100

From this table it is evident that the institute is maintaining its departmental relationships.

In Table II a summary by present status is presented.

TABLE II
Summary of Research Projects by Present Status

Completed and published	17
Completed, in press, or ready for publication	16
Completed and in form of thesis	7
Research completed, in preparation for publication	5
Completed, but held pending another project	1
In progress with partial publication already	4
In progress	40
Combined with other projects	4
Dropped	6
	100

Table II shows that the work of the institute is rapidly finding its way into print. The year 1928-29 should be a year of heavy publication.

Instruction.—During the year there was a marked increase in the number of students registered in institute courses. This year 386 students completed courses in comparison with 252 last year. Although the increases have been distributed throughout the whole range of courses, they are most marked in the courses connected with the nursery school curriculum. Four students completed the curriculum in nursery school education during the year, receiving their Bachelor's degree from the College of Education. One student received a Ph.D. degree with a major in child welfare and two students received their Master's degrees with majors in child welfare. There were several graduate students pursuing courses in other departments who took a minor in child welfare and a number of graduate students in other departments who conducted investigations in the institute to be utilized as thesis material in connection with their work in the department.

During the spring following the receipt of the grant making possible the enlargement of the institute's activities in subsequent years, a new curriculum in nursery school and kindergarten education was prepared to supersede the old curriculum in nursery school education.

National Fellows in Child Development.—During the academic year there were seven National Fellows in Child Development, working under the direction of the Committee on Child Development of the Division of Anthropology and Psychology of the National Research Council, who pursued courses in the institute. During the summer of 1928, thirteen such fellows were in attendance.

Parental education or extension.—The parental education activities of the institute followed the same general lines as last year; extension courses for credit, correspondence courses, agricultural extension projects, and study groups.

Extension courses.—Two extension courses carrying university credit were again offered under the General Extension Division in the cities of Duluth, Minneapolis, and St. Paul. The total enrolment was 59, somewhat smaller than last year, but composed of a higher percentage of parents.

Correspondence courses.—The credit correspondence course, Child Development and Training, shows a slight increase of registration over last year, there being eight students as compared with five in 1926-27. The free non-credit course, which was printed in pamphlet form early in the year, shows a tremendous increase in enrolment, the number increasing from 1,093 enrolled during 1926-27 to 2,802 enrolled during the current year. Since the inception of this course in the fall of 1926, 3,895 persons have been enrolled.

Agricultural extension projects.—Three county projects were undertaken, one consisting of three groups in Aitkin County, one of four groups in Murray County, and one of three groups in Otter Tail County. The enrolment was smaller in the county projects than last year due to a change in procedure. Where previously an attempt was made to make the project

county wide, open to anyone, this year the county agents were encouraged to select from their community three or four groups who had expressed a desire for child training or who were particularly interested. As a result, the average attendance in relation to total enrolment is much higher than in previous years.

City projects were set up in Minneapolis and Duluth, organized by the home demonstration agents in connection with their home bureau work. In Minneapolis six groups were given a course of six lessons on the study group plan.

The projects offered in Duluth were of two kinds: (1) three groups conducted on the study group or community plan, and (2) seventeen groups conducted on the local leader plan. The project conducted on the local leader plan was the first experiment with this plan in co-operation with a home demonstration agent, who organized the project well and gave a large amount of time to its supervision. Once a month for six months the thirty-six leaders met the specialist who, in addition to providing each leader with a set of the correspondence course material and an outline for each lesson, spent five hours in question and discussion. Widespread interest was aroused throughout the community.

Study groups.—In developing the study group work the policy inaugurated last year has been continued through 1928, namely that of furnishing leadership upon request, leaving the organization of groups to the community.

In the Twin Cities 38 groups have been in operation as compared with 20 for 1927—21 of these were conducted in Minneapolis and 17 in St. Paul. Out of this total, 2 were second year groups and 36 were taking work for the first time. Thirty-one were given the course on the pre-school age child, 6 on the school age child, and 1 on the adolescent. The groups were sponsored by the following agencies: Children's Bureau, 2 groups; churches, 4 groups; W.C.T.U., 1 group; social settlements, 5 groups; Home for Children and Aged Women, 1 group; Parent-Teacher Association, 25 groups. Sixteen out of the 38 groups took more than the six lessons which constitute the intensive course, compared with 7 out of 25 in 1927. This indicates not only a growing interest in the work, but a willingness to give more time to child study. The growth of the study group work in the Twin Cities is in large part due to the excellent co-operation given by the Parent-Teacher Councils of Minneapolis and St. Paul.

Publications.—During the year two major publications appeared under the auspices of the University of Minnesota Press. The first was Monograph No. 2 in the monograph series of the institute, entitled *The Kuhlman-Binet Tests for Children of Pre-School Age, A Critical Study and Evaluation*, by Florence L. Goodenough. The second was the publication of the correspondence course in child care and training in book form for distribution outside the state of Minnesota and for use in classes. This appeared under the title *Child Care and Training, a Reading Course for Parents*.

Since the last report, fifteen scientific articles have appeared.

Plans for next year.—With increased funds available for the immediate future, plans have been made for the expansion of the institute's activities during the coming year. These involve the establishment of an experimental kindergarten, increase in the range of researches of the institute to cover older children, the setting up of the nursery school and kindergarten curriculum mentioned earlier in this report, and the expansion of parental education activities by setting up a center in Duluth, by establishing a full time specialist in the agricultural extension service, and by undertaking researches in the materials, techniques, and results of parental education.

The University of Minnesota has allotted the front third of the Old Law Building, just vacated, to the institute. This will give the institute its own classroom, provide space for the experimental kindergarten and attendant activities, and give much needed space for administrative, statistical, and parental education activities of the institute, freeing the old building for the Nursery School and attendant researches and activities. The physical needs of the institute will be well met.

Conclusion.—The year 1927-28 has been a year of accomplishment on the part of the institute. There has been marked development in its scientific research, in its instructional program within the walls of the University, and in its parental education program. As an organization that has passed through much of its trial and error stage, it looks to the future with a feeling of confidence.

Respectfully submitted,
JOHN E. ANDERSON, *Director*

THE SOCIAL HYGIENE BUREAU

To the President of the University:

SIR: I herewith submit the report of the activities of the Social Hygiene Bureau for the year 1927-28.

Three years have passed since, in 1925, the University of Minnesota, at the request of the Women's Co-operative Alliance in Minneapolis, accepted a grant from the Bureau of Social Hygiene in New York City to be used over a period of five years in social hygiene research. The plan involved three projects.

Project 1.—This project has now been modified from the original statement and has been agreed to be primarily a narrative history of the development of the social hygiene program of the Women's Co-operative Alliance and its analysis and interpretation. The narrative has not yet been prepared.

Project 2.—This is now considered the heart of the research program. The results of the work on this project up to September, 1927, comprise a report, now being printed, called *A Study in Methodology*, prepared by Dr. Helen Leland Witmer, and a report which is still in typewritten form outlining in narrative the work of the field agents of the organization in 1926-27, prepared by Miss Katharine Hattendorf.

From September, 1927, to July, 1928, activities have in part been directed towards securing a more uniform and effective recording of interviews with mothers, and formulations of the materials used and the techniques of their presentation which are necessary to the desired evaluation and criticism. The list of the formulations includes: Principles of Sex Education—by each of five parent advisers; Standard Interviews—ten by each of five parent advisers; Typical Interviews—seventy. This work was not contemplated as a part of the research program. It was understood that the research could proceed directly to the evaluation of materials already in hand.

It has further developed that the Women's Co-operative Alliance was only in process of carrying out one of the several phases of its program and that it will require some two years more before its full program is actually completed. This lessens the possibility of an adequate evaluation within the time suggested in the early report and which was then deemed sufficient.

A device for recording possible results of the first home visit has been introduced as a part of the technique of the follow-up visit. The Introductory Home Chart proposed by the organization has been reformulated to permit of uniform recording and evaluation.

The parts of the program already completed do not yet lend themselves to effective evaluation. The formulations and modifications of, and additions to, the program include devices for recording activities in such a way as to render them susceptible to a partial evaluation on the con-

dition that an evaluating instrument be found. It is proposed during the next year to develop and to create such an instrument through home visits to a limited number of families of an economic and social status similar to those visited by the Women's Co-operative Alliance. It is hoped that the home visits will result in a formulation of what these parents, who have had no contact with the program of the organization, think and practice in the sex education of their children.

It is hoped that by January, 1929, the organization will have completed its program with a number of families sufficient to serve as a basis for a beginning evaluation by this instrument.

This year source materials have been assembled for an evaluation of the introductory study conferences for mothers. Three series of lectures have been taken in shorthand and questionnaires have been filled in by those in attendance at the beginning and at the conclusion of each series.

Schedules have been prepared for the study of questions of children and mothers related to sex education and this work is well under way.

Project 3.—This project was to be a training course for social hygiene workers. Originally, it was the expectation of the University that the evaluation of the program might result in tested teaching materials. It was on this basis that a training course would have been possible and Project 3 would have followed the completion of Projects 1 and 2. This year we will include some preliminary work to Project 3 by offering to a limited number of graduate students research and study in this field.

To this end the director of the Social Hygiene Bureau has been appointed to the graduate teaching faculty and plans are under way which will offer work for Masters' theses in sex education for parents.

By July, 1929, we hope to be able to report progress in all three projects together with a statement on the value of the materials of the Women's Co-operative Alliance's program and techniques used in their presentation, and also to report on the value of such a program as field work and research opportunities for students.

Respectfully submitted,

CHLOE OWINGS, *Director*

THE COMMITTEE ON EDUCATIONAL RESEARCH

To the President of the University:

SIR: I have the honor to report for the Committee on Educational Research as follows:

The close of the year 1927-28 signalizes a distinct stage in the work of the Committee on Educational Research since a number of projects furthered by this committee have reached the point of publication. From the listing of manuscripts which are already in print or which are now with the University Press or other agency for publication the progress of the committee's activities will be apparent.

PUBLICATIONS

1. *Problems of College Education*, edited by Earl Hudelson, professor of education.

The first book that comes from the press in this series is entitled *Problems of College Education*. This is a report of the first University of Minnesota Institute on Higher Education held in July, 1927.

The volume comprises thirty-five papers by the twenty-five contributors to the institute program. In publication the papers are grouped under three heads, Administration, Student Personnel, and Curriculum and Instruction.

Many of the discussions are by members of the University of Minnesota faculty and, along with other contributions, a dozen or more of the projects of the Committee on Educational Research are described. These cover such matters as the use of intelligence examinations, the selection of college students, college marks, student mortality, mental hygiene, extra-curricular activities, class size, teaching of science, and the junior college.

The volume contains an introduction by President Ernest M. Hopkins, of Dartmouth College, from which the following paragraph is quoted:

It is a fine service to all educational institutions that has been done by the University of Minnesota in organizing and carrying through this institute for the discussion of college administrative problems. It is a further service to make this material available by publication. In behalf of the guild of college and university administrative officers I wish to express our gratitude.

2. *Class Size at the College Level*, by Earl Hudelson, professor of education.

We are now privileged to note that the project on class size in its relation to the effectiveness of learning on the part of students has been completed and the report is in print. This volume, which has been prepared by Professor Earl Hudelson, chairman of the Subcommittee on Class Size, comprises three hundred printed pages and is a comprehensive treatment of the problem. It covers such matters as the significance of the problem, a review of previous literature, the trends in class size in college,

the class size situation at Minnesota, the effect of class size upon marks, the attitude of students, the testimony of the faculty, the evidence from extensive experimentation, the techniques suitable to varying sizes of classes, and the relation of class size to instructional costs.

The value of this study, from the standpoint of its contribution to our knowledge of college instruction, is represented by Professor Thomas H. Briggs of Columbia University as follows:

Professor Hudelson's report is a model for scientific workers. He might have made even more positive assertions on the basis of his evidence, but he properly prefers caution. The whole report is presented in a style that is a delightful contrast to many other educational writings. The English is a pleasure to read.

3. *Extra-Curricular Activities*, by F. Stuart Chapin, professor of sociology.

The manuscript of Professor F. Stuart Chapin's report as chairman of the Subcommittee on Extra-Curricular Activities is now in press. The scope of the investigation will be evident from the following summary of contents.

The Subcommittee, working through a period of years has had the co-operation of administrative officers and members of the faculty, of student organizations and individual students, and of a considerable body of graduates of the University.

The Committee report presents an interesting body of data gathered from all these sources. You will find here an extensive survey of what college students do other than attend classes and study, some indication of the effect of this outside activity on student achievement, the characteristics of student leaders, and a reflection of alumni opinion as to the relative values of their activities while in college. The authors of the report have attempted to present a body of factual material. They have used records furnished by 4637 college students representing almost all the colleges of the University 408 alumni, and 156 campus organizations. In dealing with special groups they have used data concerning 379 "prominent" students, 112 honor students, and 904 officers of campus organizations. Special attention is given to the relation between the intensity of extra-curricular activity and scholarship, the time spent by students in ways other than study, the "death-rate" of campus organizations, and the "carry-over" from student to alumni activity.

The report interprets the facts conservatively but illuminatingly. As a whole, the study yields a body of information and conclusions that profoundly affect our understanding of the complex and vaguely appreciated matters of the non-scholastic aspects of student life. The significance of the report is such that all future students of this problem must take account of its findings.

4. *Problems of Science Teaching at the College Level*, by A. M. Hurd, instructor and assistant director of the Bureau of Educational Research.

The manuscript for this study is in the hands of the University Press for final editing and printing. It covers a number of projects promoted by the Subcommittee on the Teaching of Science and has been prepared by Dr. A. W. Hurd who for two years has acted as secretary of this subcommittee. The report covers the following experimental studies:

1. The relative efficiencies of different methods in teaching human anatomy.
2. The effect of different amounts of laboratory work in the teaching of human physiology.
3. The effect of lengthening the time given to laboratory work in the teaching of human physiology.
4. The following studies in the teaching of physics:
 - a. The techniques for pairing students in physics for educational experiment involving preliminary testing, scaling of test items, the value of achievement in high school physics, the validities and reliabilities of tests and measures of achievement.

- b. The comparison of different groups of students in the field of mechanics and a continuation of the study of the effect of class size in the teaching of physics.
5. *Curricular Problems in Science at the College Level*, by Palmer O. Johnson, assistant professor and executive secretary of the Land-grant College Survey.

Under the auspices of the Subcommittee on the Teaching of Science Dr. Palmer Johnson has completed an investigation in the curriculum in elementary botany and the relation of elementary botany to sequent courses in the College of Agriculture, Forestry, and Home Economics. The study involves an analysis of the content of numerous botanical courses, the testing of students in botanical knowledge, the construction and validation of tests for the several courses, and suggestions for the revision of numerous botanical curricula. Dr. Johnson's manuscript is ready for the press.

6. *Student Marks in University Courses*, by John E. Bohan, associate professor of education, University of West Virginia.

Two years ago, June, 1926, Dr. John Bohan completed an investigation of student marks in college courses at the University of Minnesota. This was a project under the special Subcommittee on Marking Systems. Dr. Bohan is now completing a revision of his manuscript for publication by the University of Minnesota Press. A portion of his investigation, dealing with student marks in Romance languages and the relation of marks to prognostic measures of success in foreign language study is being published in the report of the Modern Foreign Language Investigation under the American Council on Education. This report is now in press.

CONTINUING PROJECTS

READING ABILITIES AND DISABILITIES OF COLLEGE STUDENTS

My report a year ago indicated the beginnings of an investigation of the reading abilities and disabilities of college students. Substantial progress has been made in this study during the current year. The work is under the direction of a subcommittee composed of the following members of the faculty:

- J. M. Thomas—English Department..
- M. M. Willey—Sociology Department
- M. A. Tinker—Psychology Department
- A. C. Krey—History Department
- C. John Pettibone—Physiologic Chemistry
- R. E. Montonna—Chemical Engineering
- Clara Brown—Home Economics Division
- A. C. Eurich—Educational Psychology
- H. Rottschaefer—Law School
- R. C. Lansing—Rhetoric Department—Farm
- M. E. Haggerty—Educational Psychology—*Chairman*

The secretary of the subcommittee is Mr. A. C. Eurich who is the active agent of the investigation.

During the year certain preliminary experiments have been undertaken. These consisted largely in the development of tests of reading ability, the canvass of reading achievements among selected groups of

students, and a study of the relation of reading attainments to scholastic success in college. A test of reading comprehension has been included in the freshman examinations for the year 1928-29.

This preliminary work had lead to the mapping of an experimental program for the coming year. Professor J. M. Thomas has arranged for the segregation of 150 students in the Freshman English Course of the College of Science, Literature, and the Arts into experimental sections. The instructors of these sections and Mr. Eurich, with the co-operation of the other members of the subcommittee, have arranged a daily teaching schedule for the experimental groups. Adequate testing devices for both the experimental and control groups at the beginning and end and at appropriate periods during the fall quarter have been arranged. A comparable section will be conducted in the College of Engineering and a variation of the program will be carried in the College of Agriculture, Forestry, and Home Economics with about 200 students.

STUDIES OF THE COLLEGE TEACHING OF SCIENCE

In each of the two previous reports we have discussed at some length the work of the Subcommittee on the Teaching of Science. As noted above under "Publications," two of the projects of this committee have been carried through to a stage which warrants publication. In addition to completed studies, this subcommittee continues its investigations in a number of lines.

EXTRA-CURRICULAR ACTIVITIES

Professor Chapin in reporting the work of his Subcommittee on Extra-Curricular Activities suggests further studies to be made.

Professor Chapin will be on leave for the year 1928-29. In his absence Professor W. A. Anderson will act as chairman.

TEACHING THE SOCIAL SCIENCES IN COLLEGE

Active work by this subcommittee has been in abeyance during the current year pending the development of the national study of the teaching of history and the other social sciences. Professor A. C. Krey, who is the chairman of our subcommittee on this project, is also the active agent in the national study to which he has devoted considerable time during the year. The immediate aim of his endeavors has been to map a comprehensive study of the whole problem of teaching history and the other social studies in schools and colleges, and to develop this study on a nation-wide scale. Upon this large program substantial progress has already been made.

NEW PROJECTS

COMPARATIVE SCHOLASTIC STANDING OF ATHLETES

On February 15, 1928, Mr. Howard J. Savage, of the Carnegie Foundation for the Advancement of Teaching, requested the University of Minnesota to co-operate in a study of "the comparative scholastic standing of athletes as a part of our enquiry into American college athletics." The

method of the investigation was to be as described on pages 52 to 65 of the *Twenty-second Annual Report of the Foundation (1927)*.

The request of Mr. Savage was referred by President Coffman to Mr. Frederick Luehring, director of physical education and athletics, who recommended that "the study be made under the supervision of the Committee on Educational Research." For the study, the Committee on Intercollegiate Athletics made available the sum of \$500 in support of the investigation.

PREREQUISITE COURSES

Two extended studies have dealt with the problem of prerequisite courses. Dr. Palmer Johnson investigated in some detail the relationship of the elementary botany courses to sequent courses in the College of Agriculture. Dr. W. E. Peik has made an exhaustive analysis of the courses required in education for the university teacher's certificate in secondary school teaching.

An urgent need exists for a thoroughgoing study of the entire problem of prerequisites. At the suggestion of Dean J. B. Johnston, a subcommittee with Dean Johnston as chairman has been created to study the matter. This subcommittee, which is widely representative of university departments and colleges, is now active.

SELF-APPRAISAL PROGRAM

As a matter of technique of introducing students to college, a subcommittee of which Dean O. M. Leland is chairman proposed a program of activities for college freshmen with the aim of inducing more active self-appraisal on the part of students. The form of this program as approved by the Committee on Educational Research is as follows:

In the six weeks, from June 18 to July 31, inclusive, the University of Minnesota will offer to a selected group of 100 of this year's high school graduates, without cost to the students, an opportunity to take part in a Session of Self-Appraisal.

The Session of Self-Appraisal is another effort on the part of the University, to help young men and women to answer three kinds of questions:

- (1) Should I go to college? Can I be more successful and happier if I go directly from high school into my life's work?
- (2) If I go to college, what should be my line of study and interest?
- (3) What vocation should I most seriously consider as I prepare for my life's work?

The University feels that an approach to first answer to these questions can best be made if high school records and the present preliminary tests of college ability are supplemented by clearly focused efforts at self-appraisal.

The Session for Self-Appraisal will try to help each student in attendance to reach some conclusion as to his or her personal purpose and also to the power necessary to make that purpose effective.

Students in this session will try to find out, under guidance, for what they are best fitted by doing actual college work under college teachers.

The program will include intensive work in English, biology, mathematics, and a social science, a course in How to Study, a course in College Problems, supplemented by extensive arrangements for individual conferences.

It is hoped that the student completing this course may be able to have some answer for himself for the questions as to whether or not he should go to college, and what he should do in college, (if he does go to college) and what he can do best after leaving college.

The project was authorized for trial during the summer of 1928, and the detailed results will be submitted in this committee's next report.

THE QUALITIES OF GOOD COLLEGE TEACHERS

Discussion of college teaching has frequently stressed its inadequacies and the lack of sympathetic understanding of students on the part of instructors.

The suggestion has been made that an excellent purpose will be served by an analysis of the qualities which characterize admittedly good instructors. What are the marks of scholarship which they reveal to students? What are the methods which they follow? What personal relations with students do they cultivate? Scores of such questions may be propounded and to many of them objective answers may be given.

For the purpose of promoting an investigation of the qualities of good teachers a new project has been undertaken. Professor F. W. Lathrop is in active charge of the investigation.

LOCAL ADAPTATION OF LAND-GRANT COLLEGE SURVEY

A comprehensive survey of the land-grant colleges is now in process under the direction of the Federal Bureau of Education.

The immediate obligation of the University of Minnesota to the Land-grant College Survey is to provide the data requested for the comprehensive study. You have suggested that the occasion of securing this data should be utilized to elaborate the investigation of local problems. You have further suggested that the local material may be turned over to the Committee on Educational Research to be developed as a survey of the University of Minnesota. In pursuance of this recommendation this committee is co-operating with Dean Coffey to the end of developing a working program.

In closing, the chairman of the committee desires to express appreciation for the generous co-operation of all members of the committee and of its subcommittees, and of numerous graduate students in the work which has been attempted. The encouragement and support of the president of the University has been of major importance at all times.

Respectfully submitted,

M. E. HAGGERTY, *Chairman,*
Committee on Educational Research

THE UNIVERSITY PRESS

The growth of the University of Minnesota Press during the first year of its existence as an organization has been most gratifying. There has been a notable increase in sales distribution, in publishing activity, and in public recognition and appreciation of press publications.

The press began operations in July, 1927, with one full time staff member and desk room in the Graduate School office. Sales during the first month totaled \$49.64. By the end of the fiscal year, the average monthly income from sales had risen to about \$1,000, and the total sales income for the year was just under \$10,000. Analysis of the sales shows that press publications were purchased by libraries, educational institutions, and individuals in every state and territory of the United States and in many foreign countries.

The year has seen the organization of a number of new university presses, for example, those of the University of Pennsylvania and Ohio State University, and wide publicity for university presses as a group. *Harpers' Magazine*, the *Saturday Review of Literature*, the *Publishers' Weekly*, and the *Retail Bookseller* published "University Press" numbers during the year, and most of the scientific and literary journals gave much attention to university press books. The University of Minnesota Press books have received a generous share of commendation from reviewers, and the press has won a standing among the leading university presses of the country.

The year also marks the completion of several research projects that have been under way in the University of Minnesota for a period of years and the publication of results in a number of volumes of first importance in their respective fields. Among these publications are: *The Growth and Development of the External Dimensions of the Human Body in the Fetal Period* by Professor Richard E. Scammon, of the Department of Anatomy, and Dr. Leroy A. Calkins, formerly of the University of Minnesota, and now professor of obstetrics in the University of Virginia, a monumental study of the fundamental laws of prenatal growth; *The Minnesota Mechanical Ability Tests*, a report of researches conducted by the Department of Psychology by means of a subvention from the National Research Council; a critical study and evaluation of the Kuhlman-Binet tests for children of preschool age by Dr. Florence Goodenough, of the Child Welfare Institute; and *Trees and Shrubs of Minnesota*, a product of more than twenty years investigation of the woody plants of the state by Professor C. O. Rosendahl and Professor F. K. Butters of the Department of Botany.

Problems of College Education and *Class Size at the College Level*, the first volumes of a series embodying the results of the educational research program of the University, have been published under the editorship of Professor Earl Hudelson and are hailed as marking the beginning

of a new era in college administration. A third volume of the series will be off the press in December. Others are in preparation.

In press also are the anniversary volume in honor of Professor Frederick Klaeber, entitled *Studies in English Philology*, to which some forty scholars of international reputation have contributed, and a posthumous monograph by the late Professor Cephas D. Allin, *Australasian Preferential Tariffs and Imperial Free Trade*, with which will be included a biography of Professor Allin and a bibliography of his writings.

There follows a list of the publications issued by the press since the last report or distributed by the press for other departments of the University.

- Three Wise Men of the East and Other Lectures*, by Arthur J. Todd.
The Kuhlman-Binet Tests for Children of Preschool Age, by Florence L. Goodenough.
Child Care and Training. A Reading Course for Parents, by the staff of the Institute of Child Welfare.
Student Aptitude and Prediction of Student Scholarship, by J. B. Johnston.
Problems of College Education. Studies in Administration, Student Personnel, Curriculum, and Instruction, edited by Earl Hudelson.
Class Size at the College Level, by Earl Hudelson.
Selecting Sites for School Buildings, by Fred Engelhardt, Newton H. Hegel, and George F. Womrath.
Teaching Aids for the Asking, by Homer J. Smith.
The Supervisory Organization and the Instructional Program, Albert Lea, Minnesota, by Fred Engelhardt and Ernest O. Melby.
An Outline of County Government in Minnesota, by William Anderson and Bryce E. Lehman.
A System of Classification for Political Science Collections, by William Anderson and Sophia Hall Glidden.
University of Minnesota Press Catalogue, 1928-1929.
Modern History Syllabus, 1660-1914.
The Loss of Human Teeth, by Peter J. Brekhus.
Trees and Shrubs of Minnesota, by C. O. Rosendahl and F. K. Butters.

The following publications are in press:

- Development and Growth of the External Dimensions of the Human Body in the Fetal Period*, by R. E. Scammon and Leroy A. Calkins.
Studies in English Philology. A Miscellany in Honor of Professor Frederick Klaeber, edited by Kemp Malone and Martin B. Ruud.
Extra-curricular Activities at the University of Minnesota, by F. Stuart Chapin.
The Attitudes of Mothers toward Sex Education, by Helen L. Witmer.
The Parliamentary Diary of Robert Boveyer, 1606 and 1607, edited by David H. Willson.
Australasian Preferential Tariffs and Imperial Free Trade, by Cephas D. Allin.

DETAILED REPORTS OF ADMINISTRATIVE OFFICERS

In many instances, the reports prepared by administrative officers, as here submitted, have been summarized. The complete detailed report of each administrative unit, with all appendices and exhibits, is on file in the office of the president of the University.

PUBLICATIONS OF THE FACULTIES

PUBLICATIONS OF THE FACULTIES
THE COLLEGE OF SCIENCE, LITERATURE, AND
THE ARTS

ADMINISTRATION

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INDEX

Page	Page
Academic fraternities	233, 234
Academic functions, faculty participation	86-87
Academic sororities	233-34
Accounting, faculty publications in	356
Achievements, 1927-28	37-45
Administration and Supervision, faculty publications in	333
Administrative actions	55-77
Administrative changes in Department of Agriculture	189
Administrative officers, reports of	179-284
Admission to bar	195
Admission to law schools	195
Advanced standing, students of	122, 142-47
Aeronautical engineering	39
Agreement with University of Michigan on research	40, 258
Agricultural Biochemistry, faculty publications in	307-9
Agricultural Economics, faculty publications in	309
Agricultural Education, faculty publications in	334
Agricultural Engineering, faculty publications in	309-10
Agricultural Experiment Station	39, 192
Agricultural Extension Division	39, 192-94, 271-72
Agricultural Extension, faculty publications in	320-22
Agricultural short courses	120, 194
Agricultural substations, faculty publications in	310-11
Agriculture, College of, Forestry, and Home Economics	39
achievements	39
faculty publications in	307-22
report of dean	189-94
administrative changes	189
allotment of space, changes in	189-90
Central School	191
Experiment Station	192
extension service	192-94
faculty	189-90
Forestry, registration in	191
Home Economics, registration in	191
North Central School	192
Northwest School	192
Agriculture, College of, Forestry, and Home Economics (continued)	190-91
report of dean (continued)	189
registration	194
reorganization	194
short courses	194
visitors to University Farm	192
West Central School	192
Agriculture, School of, faculty publications in	322
Agronomy, Farm Management, and Plant Genetics, faculty publications in	311-12
All-University Student Council	232
Allin, Cephas Daniel	82
Alumni	263
annual meeting	261
board of committees	32-33
point of view on university needs	41
secretary	264
units	261, 262
<i>Weekly</i>	262, 263
American Alumni Council	18-20
American passion for education	184
American Society of Heating and Ventilating Engineers	176
Anatomy Building	323
Anatomy, faculty publications in	269-73
Anderson, John E., report of	265
Anderson, William, report of	312-13
Animal Husbandry, faculty publication in	74-75
Annual report of University	287
Anthropology, faculty publications in	209-11
Appleby, W. R., report of	40, 233
Applications for fellowships, Mayo Foundation	97-102
Appointments on staff	85, 182, 183
Aptitude tests	232
Arahs	303
Architecture, School of, faculty publications in	69-70, 259
Archives, Department of	23
Aristocracy of brains	22
Aristocracy of wealth	335
Art Education, faculty publications in	210
Assays, Mines Experiment Station	84, 182
Association of Minnesota Colleges	84, 182

	Page		Page
Astronomy, faculty publications		Business Administration, School	
in	287	of (continued)	
Athletics	246-49, 250-51	report of dean (continued)	
Attitude of teacher	29	curriculum	226-27
Audubon's <i>Birds of America</i>	114, 256	degrees conferred	226
Average ability of college students	18	registration	226
		research	227
		scholarships	227
Bacteriology and Immunology,		Butler, Nicholas Murray, annual	
faculty publications in	323-24, 337-38	report	24-27
Band	87, 238		
Bee Culture		Campus	111, 173-74
faculty publications in	313	Campus Club	270
Jager, Francis	93	Cap and Gown Day	87
space	176	Caps and gowns, rental	87
Bell, James F.	110, 113, 114, 256	Central Northwest Regional Survey Committee	265
Biological science	72-73	Central School	191
Biophysics, faculty publications		Certificates, Extension Division.	243
in	338-39	Changes in	
Blitz, Anne Dudley, report of ..	228-31	administration, Department of	
Boarding houses	229	Agriculture	189
Board of Regents		allotment of space, Department	
classification of non-residents.	122-23	of Agriculture	189-90
judicial authority	10	curriculum, College of Pharmacy	212
suit with state commission	13-14	curriculum, School of Business	
Books		Administration	226-27
gifts	114	degrees	
library	258, 259	Chemistry, School of	188
Botany, faculty publications in ..	287-88	Engineering and Architecture, College of	184
Brewster, Mrs. Florence A.; gift	109-10	Pharmacy, College of	212
Brooks' study	10-11	fees	75-77
Budget	6-13	membership in fraternities	260
enemy of economy	8-9	name, Museum of Natural History	88
preparation of	9	rushing rules	260
terms of employment	65	Chaperonage	231
Budgetary system	6-7	Chemical Engineering, faculty	
Buildings		publications in	305
College of Education	217-18	Chemistry, School of	
general, report of comptroller.	173-77	faculty publications in	304-6
Nurses' Building	201	report of dean	188
Pharmacy, College of	213	amount of instruction	188
School of Business Administration	227	attendance	188
University Hospitals	202	degrees conferred	188
Bureau for Research in Government		Child Welfare Institute	
report of director	265	buildings	175
Central Northwest Regional		faculty publications in	359-60
Survey Committee	265	personnel work	217
publications	265	Rockefeller memorial	107-8
Bureau of Recommendations	216	report of director	269-73
Bureaucracy	10	agricultural extension projects	271-72
Business Administration, School		of	271
of		correspondence courses	271
core group	40	extension courses	273
externships	88-89	future plans	273
faculty publications in	356	infant studies	269
report of dean	226-27		
co-operative work	226		

	Page		Page
Child Welfare Institute (continued)		Court's decision in regents' suit	13-14
report of director (continued)		Criticism of public schools.....	16-29
instruction	271	Curriculum	
national fellows in child development	271	Business Administration,	
Nursery School	269	School of	226-27
parental education or extension	271	Dentistry, College of.....	207
publications	272	Education, College of.....	215
research	269-71	Mines and Metallurgy, School of	209
study groups	272	Pharmacy, College of.....	212
Citizens' Aid Society, gift.....	111, 173	Science, Literature, and the Arts, College of	183
Civil engineering	186		
Civil Engineering, faculty publications in	301	Dairy Husbandry, faculty publications in	313-14
Class education	17-26	Dance program	251
Classes of instructional staff.....	57, 60-64	Davenport, Eugene	24
Classification of clerical and stenographic service	67-68	Davis, E. W., report of.....	209
Classification of freshmen	182-83	Dean of student affairs, report of	232-38
Classification of graduate students	219-20	Band Appreciation Day	238
Clerical service	67-68	clubs	234
Clubs	234	co-operative cottages	235
Coffey, W. C., report of.....	189-94	fathers' and mothers' days... 236-38	
Coffman Foundation	216	foreign students	232
College aptitude tests.....	85, 182, 183	Fraine, H. G.	232
Colleges sending students to Minnesota	142-47	fraternities	233-34
Collegiate enrolment	119-20, 124-26	Koenig, A. E.	232
Collegiate preparation	39, 125	publications	232-33
Commencement exercises	86-87	scholastic comparison	233-35
Commission control	5-16	sororities	233-34
Committee on College and Vocational Guidance	85	student councils	232
educational research	41, 86, 276-81	student loans	235-37
University functions	86-87	student organization finances.. 232	
Committees, alumni	261	Dean of women, report of.....	228-31
Comparative Literature, faculty publications in	289	chaperonage	231
Comparative Philology, faculty publications in	289	delinquents	228
Comparative registration figures.	130	distribution of students as to residence	228
Comparison of yesterday and today	18-19	domestic employment	228
Comprehensive Building Fund..	155	housing	228-29
Comptroller, report of.....	153-77	co-operative cottages	229
Concert course	87	Home Economics Dormitory rooming and boarding houses	229
Control of moneys	11-13	Sanford Hall	228-29
Convocations	86	loan funds	231
Co-operative cottages	229-35	scholarships to women	231
Co-operative work, School of Business Administration	226	Shevlin Hall	230-31
Co-ordination of college and vocational guidance agencies... 85		summer school	229
Core group, School of Business Administration	40	women's organizations	229-30
Correspondence study	40, 121, 240, 271	sororities	230
		Women's Athletic Association	230
		Women's Self-Government Association	229
		Young Women's Christian Association	230
		Deaths	95-97

	Page		Page
Degrees		Education, College of (continued)	
Business Administration,		report of dean (continued)	
School of	226	junior-senior high school	
Chemistry, School of	188	building	218
Engineering and Architecture,		Peik study	215
College of	187	personnel work	217
Extension Division	243	publications	215-16
Graduate School	220	University High School...	216-17
new forms	185, 188	Summer Session	63
number conferred	121, 131-32	Education, a justifiable social in-	
Pharmacy, College of	212	vestment	20-21
Delinquents among women stu-		Educational Psychology, faculty	
dents	228	publications in	335
Demonstration school, Winnetka		Educational Research, Committee	
plan	245	on	
Dental clinic	207	report of chairman	276-81
Dental Hygienists, School for...	208	projects	278-81
Dentistry, College of		publications	276-78
enrolment	119, 120	report on class size	41
faculty publications in	330-31	Summer Session for Self-App-	
report of dean	207-8	raisal	86
curriculum	207	Eitel, George G.	96
dental clinic	207	Electrical Engineering	
Dental Hygienists, School		building	175
for	208	faculty publications in	302
extension courses	208	Elliot Memorial Hospital.....	173
faculty activities	208	Emmons, W. H., report of....	253-54
library	207	Employment Bureau, report of	
publications	207	personnel supervisor	266
research work	207	Engineering and Architecture,	
teaching facilities	207	College of	
Diehl, H. A., report of	205-6	aeronautical engineering ...	39
Dietetics, training in	202	enrolment	119
Disbursements	155	faculty publications in	300-303
Dispensary report	204	landscape architecture	39, 74
Distribution of women students		report of dean	184-87
as to residence	228	degrees conferred	185
Doctrine of public education....	16-28	Engineering Experiment Sta-	
Domestic employment of women	228	tion	186
Drama Service	239	civil engineering	186
Dramatic organizations	41	heating and ventilation..	186
Drawing and Descriptive Geome-		publications	186
try, faculty publications in....	301	<i>Minnesota Techno-Log, The</i>	186
Duffus, R. L.	19	Motor Vehicle Light Testing	
Duty of teacher	28-29	Laboratory	186
Economics, faculty publications in	357	new courses	185
Education, College of		new form of degrees.....	185
enrolment	119, 120	English	
faculty publications in	333-37	faculty publications in	289-90
report of dean	215-18	tests, College of Science, Lit-	
buildings	217-18	erature, and the Arts.....	182
Bureau of Recommendations	216	Enrolment. <i>See</i> Registration.	
Coffman Foundation	216	Entomology and Economic Zoo-	
College of Education Build-		logy, faculty publications in..	314-15
ing	217-18	Eustis, William H.	155
curricula	215	Eustis Children's Pavilion	199
experimental elementary		Exhibits, Museum of Natural	
school	218	History	256
		Experiment stations	186, 192, 209-10

	Page		Page
Experimental Engineering, faculty publications in	302	Fiscal control of state educational institutions (continued)	
Experimental elementary school	218	bureaucracy	10
Experiments	186	commission control	5-16
Extension Division. <i>See</i> General Extension.		control of moneys of state universities	12-13
Externships in business.....	88-89	decision of courts	13-14
Faculty		decisions in Michigan.....	14-15
activities, College of Dentistry	208	gifts and fees	13
Agriculture, College of.....	189, 190	integrity of American universities	16
appointments	97-102	judicial authority	10
changes	91-104	Minnesota's experience	13-14
Law, School of.....	196	misunderstanding on part of people	12
leaves of absence.....	57-64	political complications	13
Mayo Foundation	222, 223	regents' suit	13-14
Medical School	198	salaries of teaching staff	7-8
promotions	102-3	statement of judge	14
relations to academic functions	86-87	Focus of attention in education	26
resignations	93-95	Folwell, William Watts.....	69-70, 239
Science, Literature, and the Arts	181	Ford, Guy Stanton, report of..	219-22
Farm campus	174, 176-77	Foreign students	220, 232
Fathers' Day	236-38	Forestry	
Fees		faculty publications in	315-16
changes	75-77	registration	191
Medical School	200-201	Formal education, Extension Division	239
University High School	76	Four-quarter operation	57-65, 245
Fellowships		Fraine, H. G.	232
child development	271	Fraser, Everett, report of.....	195-96
gifts	111	Fraternities	233, 234
Mayo Foundation	40, 223	Freshman	
Fesler, Paul H., report of.....	202-3	classification	182-83
Field House	103, 160, 246, 249	courses required, physical education, women	250
Field Secretary and General Alumni Association		party	232
report of secretary	261-64	scholarships	82-85
Alumni Board	261	Freshmen	
Alumni units	264	Medical School	197
<i>Alumni Weekly</i>	261, 262	Pharmacy	212
American Alumni Council	262, 263	Functions of University.....	86-87
annual meeting	263		
committees	261	General Alumni Association, report of secretary	261-64
homecoming	262	General Extension Division	
medical banquet	263, 264	Child Welfare	271
Northrop Memorial Auditorium	263	dental courses	208
university singers	262	faculty publications in	358
Field work, Museum of Natural History	257	physical education, women ..	251
Finances		registration	39, 40, 129, 240
Mayo Foundation	222	report of director.....	239-43
report of comptroller.....	156-71	certificates	243
student organizations	232, 233	correspondence study	240
Fiscal control of state educational institutions	5-16	drama service	239
Brooks' study	10-11	extension classes	240
budget	6-13	formal education	239
budgetary system	6-7	informal education	239

	Page		Page
General Extension Division (con- tinued)		High school music contest.....	241-42
report of director (continued)		High school students	82-85
Minnesota State High School		History, faculty publications in	292-93
Music Contest	241-42	History and Philosophy of Edu- cation, faculty publications in	335
Municipal Reference Bureau		Holman, W. F., report of.....	260
.....	239, 242-43	Homecoming	262
information service	242	Home Economics	
legislative service	243	dormitory	229
Minnesota municipalities..	242	faculty publications in	316
publications	242-43	registration	191
special service	243	training in dietetics	202
registration	240	Home Economics Education.....	336
short courses	240	Honor point system	180
study groups	243	Honors to members of staff....	41-45
University Lyceum	239	Horticulture, faculty publications	
university radio programs ..	241	in	316-17
visual instruction	239	Hospital expansion	199-200
service, Department of Agri- culture	192-94	Housing of women	228-29
students	121	How To Study classes.....	81-82
women's athletics	251	Humanitarians and vocationalists	30
Geographical distribution of stu- dents	148-52, 121-22, 212, 245	Hygiene	246
Geography, faculty publications in	290	Improvement of college teaching	
Geological Survey, report of di- rector	253-54	attitude of teacher.....	29
Geology and Mineralogy, faculty publications in	290-91	duty of teacher	28-29
German, faculty publications in	291-92	humanitarians'	30
Gifts and fees, commission con- trol	13	scientific methods	30-31
Gifts to University.....	107-15	supervision of college teaching	31-32
Ginn and Co. <i>What the Colleges Are Doing</i>	24	vocationalists	30
Girls' co-operative cottages....	229, 235	Income of University.....	155
Golf committee, women.....	251	Infant studies	269
<i>Gopher</i>	232	Infirmary	205, 206
Graduate School		Informal education, Extension Division	239
faculty publications in (Mayo Foundation)	337-56	Information service	242
registration	40, 119, 219, 220, 244	Inorganic Chemistry, faculty publications in	305-6
report of dean	219-22	In-Patient Department	203, 205, 206
appropriations for research	220-21	Institute on Higher Education..	245
classification	219	Instruction, Institute of Child Welfare	271
degrees	220	Instruction, School of Chemistry	188
foreign students	220	Integrity of American universi- ties	16
Mayo Foundation	222-25	Intercollegiate athletics	103, 248
Greater University Corporation.	160	Interfraternity Council	260
Gross receipts from athletics....	249	membership	260
Guidance	85, 181, 182	rushing rules	260
Haggerty, M. E., report of....	215-18	scholarship	260
Harris, J. Arthur	73	Intern year	198
Health Building	199-200, 206	Intramural athletics	247, 251
Health instruction	205-6	Jager, Francis	93
Health service	41, 205-6	Jefferson, Thomas	28
Heating and ventilation.....	184	Johnson, Dorothy G., report of.	266
		Johnston, J. B., report of.....	181-83
		Joseph, T. L., report of.....	210-11

	Page		Page
Journalism, faculty publications in	293	Mayo Foundation (continued)	
Judicial authority of regents....	10	report of director (continued)	
Judge's statement in regents' suit	14	faculty	222-23
Junior ball	232	fellows	223
Junior-senior high school building	218	financial	222
		graduates	224
Kelly, Frederick James.....	33, 93	lectures	224
Kissock, May S., report of....	250-51	publications	224-25
Koenig, O. E.	232	students from other organi-	
Kumm, Harold F.	94	zations	223-24
		Mechanical Engineering, faculty	
Land and buildings	173-77	publications in	303
Landscape architecture	39, 74	Mechanical Engineering, forge	
Lasby, W. F., report of.....	207-8	shop and foundry	175
Law Review	196, 233	Medical banquet	263-64
Law School		Medical School	
building	175	faculty publications in.....	323-30
collegiate preparation	39, 195	relations with organized pro-	
faculty publications in	322	fession	39, 198-99
report of dean.....	194-96	report of dean	197-204
admission to bar	195	faculty	198
admission to law schools....	195	hospital expansion	199-200
faculty	196	Eustis Pavilion	199
library	196	Out-Patient Building ...	199-200
<i>Minnesota Law Review</i>	196	Students' Health Building	199-200
registration	195-96	intern year	198
Laws and regulations of the		Minneapolis General Hospital	200
University	74	Nursing, School of, report	
Leaves of absence	57-64, 103-4	of acting director.....	201
Lectures		registration	197
Mayo Foundation	224	relations with alumni and	
Museum of Natural History..	257	profession	198-99
Legislative service	243	tuition fees	200-201
Leland, O. M., report of.....	184-87	University Hospitals, report	
Library		of superintendent	202-6
dentistry	207	dispensary report	204
faculty publications in.....	358-59	In-Patient Department 203,	205-6
Law School of.....	196	Nurses' home	205
University Library	258-59	Out-Patient Department..	202-4
Library Instruction, Division of	68-69	Psychopathic Department	202
Loan funds	231, 235-37	Service Building	202
Loans of exhibits from Museum		study of nursing education	202
of Natural History	255-56	training in dietetics....	202
Luehring, F. W., report of....	244-49	X-Ray Department	202
Lunell Herbarium	72-74	Medical service	266
Lyon, E. P., report of.....	197-201	Medicinal plant garden.....	213
		Medicine, faculty publications	
MacMillan, W. D.	222	in	324-25, 339-46
Main Engineering Building....	175-76	Men's co-operative cottages...	235
Mathematics, faculty publications		Mental hygiene	206
in	293	Metallography, faculty publica-	
Mathematics and Mechanics, facu-		tions in	331
lity publications in.....	303	Michigan's experience with com-	
Mayo Foundation		mission	14-15
applications for fellowships..	40, 223	Middlebrook, W. T., report of	155-77
Graduate School, faculty pub-		Military Science and Tactics	
lications in	337-56	faculty publications in.....	358
report of director.....	222-25	report of officer in charge...	252
applications for fellowships	223	voluntary enrolment	40

	Page		Page
Mines and Metallurgy, School of		Non-fraternity students	235
enrolment	119-20	Non-resident students	122-23
faculty publications in	331	Non-sorority students	235
report of dean	209-11	North Central School	192
curriculum	209	Northrop Memorial Auditorium	174, 263
Experiment Station		Northwest School	174, 192
activity	209-10	Nursery School, Child Welfare	269
assays	209	Nursing education, study of... ..	202
Davis, E. W., report of.. ..	209	Nursing, School of	
publications	210	enrolment	201-2
registration	209	home for nurses	119-201
Tax Commission	211	report of acting director.....	201
U. S. Bureau of Mines....	210-11	Nurses' Building	201
withdrawal of students.....	39	registration	201
Mines Experiment Station...176,	209-10	summer session course....	201
<i>Mining Directory of Minnesota</i>	210	Obstetrics and Gynecology, fac-	
Minneapolis General Hospital... ..	200	ulty publications in.....	325, 346
Minnesota		Officers, Board of Governors of	
<i>Daily</i>	232	Minnesota Union	267
experience with commission..	13-14	Old Library Building.....	175
<i>Law Review</i>	196, 233	Ophthalmology and Oto-Laryn-	
Masquers	232	gology	325-26, 346-47
Mentor	215-16	Opportunities for college success	85
municipalities	242	Organic Chemistry, faculty pub-	
state high school music contest	241-42	lications in	306
Tax Commission	211	Orthopedic classes	
<i>Techno-Log</i>	185	men	247
Union, report of president of		women	250
Board of Governors.....	267-68	Out-Patient Department	
Misunderstanding on part of			199, 200, 202-4
people	12	Owings, Chloe, report of.....	274-75
Mothers' day	237-38	Pageant "The Pioneer Spirit"..	87
Motor vehicle light testing labo-		Paige, James	74
ratory	185	Parental education or extension	271
Municipal Reference Bureau	239, 242-43	Pathology, faculty publications	
Musical organizations	41	in	326, 347-49
National Education Association		Pediatrics, faculty publications	
meeting	245	in	326-27, 349
National fellows in child de-		Peik study	215
velopment	271	Permanent University fund....	155
Natural History, Museum of		Personnel work, College of Edu-	
change in name.....	88	cation	217
faculty publications in	359	Pharmaceutical Chemistry, fac-	
report of director	355-57	ulty publications in.....	333
accessions to museum.....	256	Pharmaceutical educational ex-	
Audubon's <i>Birds of America</i>	256	hibit	213
exhibits	256	Pharmacognosy, faculty publica-	
field work	257	tions in	333
lecture schedule	257	Pharmacology, faculty publica-	
loans to public schools.....	255-56	tions in	327
Pipestone Prairie group... ..	256	Pharmacy, College of	
study collections	256	enrolment	39, 119-20
Need for more education.....	21-22	faculty publications in.....	332-33
Nelson, Benjamin Franklin ...	96	report of dean	212-14
New course, College of Engi-		building and equipment	
neering and Architecture.....	184	needs	213
New course, School of Nursing	201	curriculum changes	212
Nicholson, E. E., report of....	232-38		

	Page		Page
Pharmacy, College of (continued)		Political complications	13
report of dean (continued)		Political Science, faculty publi-	
degree basis	212	cations in	294-95
geographical sources of		Poultry Husbandry, faculty pub-	
freshmen	212	lications in	318
medicinal plant garden....	213	Preparatory schools	121-22, 133-41
pharmaceutical educational		President's annual report.....	5-116
exhibit	213	Preventive Medicine and Public	
pharmaceutical research ...	212	Health, faculty publications in	328-29
registration	212	Price, Richard R., report of...	239-43
scholarship prizes	212	Prizes	111-113
service to University.....	214	Probation students	81-82
University Free Dispensary	213	Professional fraternities	233-34
Philosophy, faculty publications		Professional sororities	233-34
in	293	Professional staff, health service	205
Physical Chemistry, faculty pub-		Professional training courses,	
lications in	306	women's athletics	250
Physical education, registration	40	Projects, Educational Research	
Physical Education and Athletics,		Committee	281-84
report of director	246-49	Promotions	102
gross receipts from all quarters	249	Psychological tests	182-83
hygiene	246	Psychology Department, lighting	176
intercollegiate athletics	248	Psychology, faculty publications	
intramural athletics	247	in	295-96
orthopedic classes	247	Psychopathic Department	202
physical education for men... 246-49		Public Education	16-28
Physical Education for Men		American passion for educa-	
report of director.....	246-49	tion	18-20
Physical Education for Women		aristocracy of brains.....	23
faculty publications in.....	360	aristocracy of wealth.....	22
report of acting director....	250-51	average ability	18
dance program	251	Butler, Nicholas Murray....	24, 27
Extension Division	251	class education	17-26
freshman required courses.	250	comparison of yesterday and	
golf committee	251	today	18-19
intramural sports	251	criticism of public schools....	16-29
orthopedic gymnastics	250	Davenport, Eugene	24
physical examination	250	doctrines of public education..	16-28
professional training course	250	Duffus, R. L.	19
sophomore required courses	250	education, a social investment	20-21
summer school	251	Ginn and Company.....	24
Women's Athletic Associa-		focus of attention in education	26
tion	250-51	Jefferson, Thomas	28
Physical examinations		need for more education....	21-22
men	205-6, 246	training for effective living..	24
women	205-6, 254	state universities and private	
Physics, faculty publications in	293-94	institutions	23-28
Physics Building	175	Publications	
Physiology, faculty publications		Agriculture Experiment Sta-	
in	328	tion	192
Physiology and Physiologic		<i>Alumni Weekly</i>	261-62
Chemistry, faculty publica-		Bureau for Research in Gov-	
tions in	349-50	ernment	265
Pierce, E. B., report of...261-64, 267-68		Child Welfare	269-73
Pillsbury Hall	176	Committee on Educational Re-	
"Pioneer Spirit, The"	87	search	276-81
Pipestone Prairie group ...110, 113, 256		Dentistry	207
Plant Pathology and Botany,		Education	215-16
faculty publications in.....	317-18	Engineering and Architecture	185

	Page		Page
Publications (continued)		Research (continued)	
faculty publications	287-360	medical grant	221-22
finances	232-33	Mines and Metallurgy	209-11
Mayo Foundation	224-25	pharmaceutical	212
Mines and Metallurgy	210	Social Hygiene Bureau	274-75
Municipal Reference Bureau	242-43	Research and experiments	113, 184, 185, 209-11
Radio programs	241	Resignations	102
Radiology, faculty publications		Richardson, Harlow, report of	244-45
in	330, 350-51	Roberts, T. S., report of	255-57
Receipts from athletics	249	Rockefeller, Laura Spelman, gift	107-8
Recreation, summer session	245	Romance Languages, faculty	
Regents	10, 13, 14, 122, 123	publications in	297
Registrar, report of	117-52	Rooming and boarding houses	229
Registration		Rushing rules	260
Agriculture, College of	190-91	Salaries	
Business Administration,		clerks and stenographers	67
School of	226	instructional staff	7, 8, 65
Chemistry, School of	188	Sanford Hall	228-29
Engineering and Architec-		Schaefer, Otto G.	94
ture, College of	184-87	Scholarships	
Forestry Division	39, 151	Business Administration	207
Graduate School	40, 119, 219-20, 244	gifts	109-13
General Extension Division	39, 40, 129, 240	freshmen	82-85
Home Economics	39, 191	prizes, College of Pharmacy	212
Law School	195-96	women	231
Medical School	197	Scholastic comparisons	40, 233-35, 260
Mines and Metallurgy, School		Science, Literature and the Arts,	
of	119, 120, 209	College of	
Nursing, School of	119, 201	dealing with students indi-	
Pharmacy, College of	39, 119, 120, 212	vidually	39
Physical Education	40	faculty publications in	287-300
resident of Minnesota	39	report of dean	181-83
students with advanced stand-		classification of freshmen	182-83
ing	39	curriculum	183
Regulations of the University	74	faculty	181
Relations with alumni and pro-		faculty counselling	181-82
fession, Medical School	39, 198-99	graduate	181
Reorganization, Department of		teaching load	181
Agriculture	189	tests, psychological and	
Report of Committee on Uni-		English	182-83
versity Functions	86-87	Scientific methods	30-31
Report of comptroller	153-77	Secondary schools. <i>See</i> Pre-	
Report of registrar	117-52	paratory schools.	
Report of Survey Commission,		Self-appraisal, Summer Session	
College of Science, Literature,		for	86
and the Arts	182	Senate Committee on Inter-	
Reports of administrative officers	179-284	collegiate Athletics	247
Research		Senior Prom	232
agreement with Michigan	40, 258	Service Building, University	
biological	72-74	Hospital	202
Business Administration,		Service to University, College	
School of	226-27	of Pharmacy	214
Child Welfare	269-73	Shevlin Hall	230-31
Dentistry, College of	207	Short Courses	120, 194, 240
Graduate School	219-25	Size of classes	41
		<i>Ski-U-Mah</i>	232

	Page		Page
Social Hygiene Bureau.....	274-75	Tables (continued)	
report of director.....	274-75	intramural participation	
graduate work	275	record	247
Women's Co-operative Alliance	274-75	Medical School	203-6
Sociology, faculty publications in	297-300	physical education	246
Soils, faculty publications in...	319	radio programs	241
Sophomore Frolic	232	regulation	124-52
Sophomore, required courses,		research projects, child welfare	270
women's physical education..	250	student loan fund	237
Sororities	230, 233, 234	Teaching facilities, College of	
Special services, Extension Division	243	Dentistry	207
Speech, faculty publications in..	300	Teaching load	181
Stadium	246	Technological Chemistry, faculty publications in.....	306
State budgetary system.....	67	Terms of employment.....	65
State Livestock Sanitary Board	70-71	Tests	85, 182-83
State universities and private institutions	23-28	Theory and Practice of Teaching, faculty publications in..	336
Statistics. <i>See</i> Tables.		Thompson, Barbara O., report of	201
Stenographic service	67-68	Trade and Industrial Education, faculty publications in.....	336
Stevenson, R. A., report of...	226-27	Training for effective living...	24
Student councils	232	Traffic and Transportation, faculty publications in.....	358
Student health buildings.....	199-200	Tuition. <i>See</i> Fees.	
Student loans	111, 235-37	Tunnels	174-75
Student organization finances...	232	Ueland Fellowship	18, 108-9
Student withdrawal	39	United States Bureau of Mines	209-11
Students admitted with advanced standing	142-47	University band	87
Study collections	256	University Concert Course ...	87
Study groups	243, 272	University, faculty publications in	336-37
Subcollegiate students	120, 127-28	in	336-37
Summary enrolment, all students	129	University Field House	89
Summer Session		University free dispensary..	204, 206, 213
Blitz, Anne Dudley	229	University functions	86-87
for self-appraisal	86	University Health Service, report of director	205-6
four-quarter basis	57-65, 245	dispensaries	206
library training	259	general	205
nursing course	201	health instruction	205-6
report of associate director...	244-45	infirmary	206
demonstration school, Winnetka plan	245	medical service	206
four-quarter basis	245	mental hygiene	206
geographical distribution...	245	physical examinations	206
Institute on Higher Education	245	professional staff	205-6
National Education Association meeting	245	University High School	216-17
recreation	245	University, hospital and dispensary	199, 200, 202-4
registration	244	University Library	
teaching	63	report of librarian.....	258-59
Women's Athletic Association	250	agreement with Michigan...	258
Tables		Archives, Department of...	259
Employment Bureau	266	Library Instruction, Division of	259
gross receipts for intercollegiate athletics	249	Summer Session	259
intercollegiate athletics	248	University life	79-90

	Page		Page
University Lyceum	239	Widows	65-66
University radio programs.....	241	Wilson, Louis B., report of...	222
University recreation field	247	Winnetka plan	245
University singers	262	Winston, William Overton.....	114, 256
Van Vleck, John Hasbrouck...	93-94	Women's Athletic Association..	230, 250-51
Veterinary Medicine, faculty		Women's Co-operative Alliance	274-75
publications in	319-20	Women's intramural program..	251
Visitors to University Farm....	194	Women's organizations	229-30
Visual Instruction	239	Women's Self-Government Asso-	
Vocational guidance	85	ciation	229
Vocationalists and humanitarians	30	Wulling, Frederick J., report of	212-14
Voluntary enrolment, military		X-Ray Department	202
drill	40	Young Women's Christian Asso-	
Washburn, F. L.	95	ciation	230
Weatherstrips	177	Zoology Museum	88
West, Rodney W., report of..	117-52	faculty publications in.....	300
West Central School.....	192		
Whitacre, Emily Speechley, gift	110		