

**THE PRESIDENT'S REPORT
FOR THE YEAR 1920-21**

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THE PRESIDENT'S REPORT

I

To the Board of Regents of the University of Minnesota:

GENTLEMEN: I have the honor to present to you my report for the year 1920-21.

In many respects this has been the most interesting and the most difficult year in the history of the University. It has been interesting and difficult because of the character of the problems that have arisen. The major problems have been administrative in character and have arisen out of two sets of conditions: the growth of the University and a questioning attitude on the part of many as to whether the state can continue to finance the University indefinitely should this growth continue.

Fifty years ago the University of Minnesota registered only 18 students of collegiate grade, forty years ago, 214, thirty years ago, 972, twenty years ago, 2,685, and ten years ago, 3,663. There was a steady increase in registration from 1910 to 1917, when there was a decrease due to the war. In 1919-20, the total collegiate registration was 9,027, and for the year now closing it has reached the unusual figure of 9,854, a gain of 827 over last year. These totals do not include the subcollegiate students registered in the schools of agriculture at St. Anthony Park (955), Morris (233), and Crookston (225), and in the University High School (215). Nor do they include the students registered in the Extension Division, in correspondence courses, in evening classes, and in short courses (5,446). When all these are added, we have a grand total of 17,538 persons who received instruction from the University this year. Quite as impressive as these statements is the fact that the total collegiate registration of the University has increased 120 per cent in the last six years, and during 1919-20, there were actually 66.6 per cent more students in the University than it had ever had at any other time in its history. A recent survey of the probable growth of the University seems to warrant the conclusion that it will continue to grow, and at a rather rapid rate. The facts, also, seem to indicate that between 20 and 25 per cent of all the pupils graduating from the public

high schools of the state in any one year will become freshmen in the University the following fall. The number of high schools is increasing rapidly, and the number of pupils attending high schools even more rapidly. On the basis of this growth we estimate that the University will have approximately in its regular academic year 13,000 collegiate students in 1930, only eight years hence. Indeed, it looks as if this number may be reached and exceeded before that time.

The question which naturally arises is, "Shall the University be prepared to receive these students?" It appears that the answer to this question depends in the first place upon the conception of education that we maintain, but that in turn depends upon something far more fundamental and that is the support we propose to give to the guarantees of civil liberty and the provision we expect to make for equality of educational privilege and opportunity. Civil and political liberty can not be guaranteed in defiance of the principle of equality of educational opportunity, and equality of educational opportunity can not be provided with the doors of our universities closed or when artificial limitations are placed upon registration. The faith of the American people in the value of public education has been unremitting, and that faith has been deserved. The history of the development of education in America is a story of great achievement. No adequate account of it has ever been written. To recount the struggles of a free people to establish a system of popular education, which in its infancy bore the stigma of poverty and charity, but in latter days is the expression of the hopes and ambitions, of the faiths and aspirations of the proud descendants of that people, is a task worthy of the noblest and most gifted mind. To recount the struggles of a people to preserve and to perpetuate the principles of freedom of worship, the right of assembly, a trial by one's peers, and the opportunity for fair discussion is to retell the story of American education, for it is only through that education we can insure an intelligent and wise application of these inalienable principles. Both the sanctity and the meaning of our political institutions rest, in the final analysis, upon the kinds of schools we maintain.

Nor did this school system of ours spring into existence full grown. It is the product of evolution. Its roots lie far back in the past. From the beginning it has been regarded as society's

most sensitive agent for saving time and labor and also as a highly specialized instrument consciously organized to provide training in citizenship. Thomas Jefferson clearly recognized the importance of this latter consideration. When he declared that a free government can not endure without public education, he gave a mighty impetus to its cause. Successful public schools everywhere became radiant centers of influence. The conception of social coöperation for educational purposes changed from that of groups who voluntarily taxed themselves to that of groups who compulsorily taxed themselves.

From then until now, decade after decade, the common schools have advanced with uncertain and halting steps. Could we have looked into the future then as we can examine history now, we should have known that the future of the schools was secure, as their foundations were rooted in the idealism of a people who cherished not merely the right to worship God according to the dictates of their own conscience, but also the privilege of educating their children in accordance with the principles of freedom and equality of opportunity. These are not principles to be exercised without discretion. They are something to be achieved. The right of free worship and equality of political opportunity have almost, if not quite, been realized in this country. But there are other types of liberty for which many are struggling that have not yet been commonly accepted. They are still in the process of formulation. Even intellectual liberty, that is the right to discover truth and to tell the whole truth in order that the truth may make us free, is not universally received and not always treated with the cordiality that it deserves, and yet it is the only stimulus to science and the only true basis of progress.

The fundamental tenets of popular education in America have never contemplated aristocratic forms of education, the cultivation of class interests, nor the protection of special privileges. On the contrary, since the middle of the nineteenth century, the common schools—the product of that proud, new tradition that all the property shall be taxed for the education of all the children—have been universally regarded as the servant of every one, not the servant of a few.

Almost contemporaneous with the establishment of a system of common schools on the basis of compulsory taxation, our forefathers began also to enact compulsory education laws, fixing the

upper age limit in some instances as high as fourteen. Apparently these pioneers held that the level of trained intelligence needed by all the people for the solution of the problems of that day and generation should be graduation from the common schools. It was generally recognized that life was comparatively simple, and its problems easy of solution. On the other hand, there rested deep in the hearts of the common people, the firm conviction that a certain amount of general training was necessary to insure mutual understanding and social intercourse. These pioneers understood that a common education is one of the first requirements of neighborliness, that it tends to loosen the bonds of selfishness and makes it easier for men to live, to work, and to play together.

That enormous progress has been made in general education in America is shown by the fact that in 1840 the total amount of education received by the average citizen during his entire lifetime was 208 days. According to present standards, this nation, educationally speaking, was in 1840, a low second grade nation. By 1870, the total amount of schooling received by the average citizen had been increased to 582 days. We had reached a new level—the level of a high third grade. To-day the average citizen receives a little over 1,200 days of schooling. We are now a high sixth, or a low seventh, grade nation.

Why this change? Because the problems of each succeeding generation have been more difficult than those of the preceding generation. Furthermore, the problems have grown more political, social, and spiritual in character. Our forefathers two generations ago understood that social and political problems are not altogether economic, but that they are also intellectual and spiritual. To them a carpenter was not a carpenter merely, but a citizen as well. The working man has long suspected that the man who knows possesses some secret influence or power that is being denied the worker. Some thought that power was money, and consequently sought higher wages. Others thought it was political prestige and consequently sought political preferment. But most of them have learned that the secret lies in education. As a result the doors of the schools have been opened to the children of men on every economic level. Every time any class has secured greater political rights, it has demanded more education, and it has always secured it. The constant shifting of education to lower economic levels

epitomizes the struggle of the race for human freedom. It is this struggle of the masses to secure an education, combined with their ability to profit by and to use it intelligently that gives us confidence in the ultimate outcome and integrity of democracy. Every one recognizes that such education is expensive, but the expense is insignificant in comparison with the enormous gain society receives from it.

The period during which the common school system was developed throughout the nation was the period between 1840 and 1855. From 1840 to 1870, much of the secondary education was provided in private schools, generally known as seminaries or academies. Gradually since then these private schools have been superseded by public high schools. This change came partly because the whole social organism was increasing in complexity and its problems in intricacy and variety. The population was growing rapidly. Thousands upon thousands of foreigners were passing through the immigration gates. Lines of communications were multiplying. Newspapers and books were more easily available. Acute political, social, and industrial issues arising out of the Civil War and our industrial expansion remained unsolved. The dark days of reconstruction dragged on. Altho there seemed to be good ground for discouragement, the men of that day did not regard the situation as hopeless. Their idealism did not become distorted, nor did they lose faith in their institutions. They did what every generation of patriots has done—they made way for liberty by providing more education. High school education, available to the children of all men, became their goal. They sacrificed that the next generation might have a better intellectual equipment than they had had. Right in the midst of this period of great economic and spiritual depression the University of Minnesota was founded.

Such is the history of all human progress. Each succeeding generation profits by the sacrifices of the preceding generations. These sacrifices always point to the direction of greater service to mankind. All too frequently do we forget that there is human ethics in human progress, that the comforts we enjoy, the satisfactions we have, the privileges we possess, all came because men who received but a few days of schooling during their lifetime were willing to pay a heavy price for us. There is a moral in this for the present generation which I shall not press.

Long before the high school became an integral part of the established school system many of the states created universities, which, in the course of time, articulated with the public schools, and became a part of them. There are still a few skeptics who maintain that a state university should be separate and independent of the public schools. They would locate it on some Mount Olympus or sequester it in some secret place far from the sordid marts of trade, or the buzzing confusion of social and political worlds. Scholarship, according to their opinion, should not be contaminated by contact with the activities of everyday life. A wall with a wide and deep moat should separate the university from the high school, and only the very elect, the superlatively gifted, should be permitted to cross the bridge and to enter the gate. This is the philosophy of other days. The philosophy of to-day points to a system of state supported public education, beginning with the lowest primary grade and extending to the senior year of the university, equally open to all who are competent to profit by it. This philosophy is the foundation rock upon which the entire superstructure of our democratic government rests. Destroy it and democracy will fall. Cling to it, and democracy will survive.

The early state universities were modest in their claims. They were what Dr. Folwell would call "good schools." A varied curriculum was not required. Many of the instructors were great teachers. They enjoyed intimate personal relations with their students. The students were accepted as a part of the community. Student life was conducive to good scholarship. Those were the days when great personalities cast their shadows far into the future. A few distinguished leaders like Dr. Folwell and Dr. Northrop caught a vision of what universities were to become. These empire builders saw the institution over which they presided growing in size and in influence. New courses were introduced, the curriculums were revised and expanded; more instructors were secured; contacts between students and staff became less intimate. From an institutional point of view these changes brought both gains and losses. With the influx of students, dormitories began to be substituted for homes, convocations for chapel, more varied and flexible curricula for the simpler and

inelastic ones, student service buildings for boarding clubs, and a more highly specialized staff for the one of varied attainments.

To some extent personality has given way to institutionality. By this I do not mean that personality no longer plays a prominent part in the education of university students. On the contrary, it is just as important as it ever was. There is no substitute for it. But it is obvious that the head of a university like Minnesota can no longer know personally all or nearly all of his students. Something has been lost because those warm, intimate, and almost confidential relations which he once enjoyed with his students are no longer possible. But as I have already indicated, every loss has its compensating gain. The president, with his small faculty, has been supplemented by a large faculty; the influence of a few by the influence of many; a few points of contact by many points of contact. Considered from this angle, the most important university task is that of securing a high-minded, right-minded faculty. What members of the faculty think and believe, what they feel and express to a greater or less extent, transfers across and finds expression in the life and thought of the student body. Both individually and collectively the faculty should be imbued with an impelling desire to search for and to discover truth. It should be dominated by a reverence for the truth, a high respect for facts, and saturated with human purposes and common human feelings.

A university is a community of scholars; it breathes the spirit of the social order; it is constantly engaged in an attempt to understand the meaning of the age; it inculcates the craft spirit of the profession; it molds character. Every member of a university is a locus of influence. The individual professor still has limitless opportunities to make an impression upon his students. He must play his part; he must accept and express in his daily life the sacred obligation of his profession if the university in every respect would serve its true purpose. He must assist by every act in building that subtle, pervasive, and irresistible force which can best be described by the term "the institutionality of the university." Its constituent elements are the attitudes, the standards, the ideals, and the traditions of the institution.

A university is not an aggregation of individuals merely; it has its social mind, to which every individual contributes. The

social mind of a university is not lifeless and inert; it is a powerful dynamic touching the life of faculty and student at every turn. Every stimulus that beats in upon the consciousness of an individual, influences him for good or ill. Consequently, none but the best influences should prevail in a university. The development of a genuinely wholesome institutionality through the personnel of a high-minded faculty, and the associated life of students and faculty in classrooms, libraries, laboratories, commons, union buildings, auditoriums, and stadium, is the supremely important problem of a modern university. The primary factor of institutionality in a university is studentship, but a university is no longer a school merely. It is a republic of minds, dedicated to the dispassionate consideration of the problems of life, and dominated by a wholesome philosophy of helpfulness and mutual good faith. Just as the largest achievement of an individual is himself, so the largest achievement of a university is itself. It makes its own soul—a soul that resides in the best thoughts, the best feelings, and the best conduct of every one connected with it, and in the attitude of the community in which it is located toward it.

It is a platitude to declare that the primary purpose of a university is to educate, and yet even this platitude needs to be reiterated now and then. Students come to it to master the arts and sciences, to prepare for the professions, or to advance knowledge. The college of liberal arts is presumed to provide that type of liberal training which is necessary for the exercise of intelligent citizenship and a noble use of one's leisure. If one graduates from a university with a love of literature, with the proper standards for evaluating social and political life, if he masters more than one language, if he is equipped to explore new territory in the fields of mathematics or the sciences, it is because of the instruction he has received in the college of liberal arts. The college of arts needs no justification; it is the basic college of the university. But it does not exist independent of the other units of the university. Indeed, one of the largest services it renders is the work it does for the other units of the university. Even doctors, dentists, and engineers must be taught English and sometimes physics and chemistry or a foreign language. The college provides this training and in doing so helps to integrate the institution.

Contact with the professional schools has modified the curriculum of the arts college so that much of its work is of vocational nature. It is true that other forces have tended to produce this same result. The bachelor of arts degree, first given as evidence that one was qualified to teach, later in some American institutions assumed to be the insignia of a liberally educated person, is now granted for all sorts of cultural and special lines of work. Special significance is seldom any longer attached to the degree, but special significance does lie in the fact that the variety of things for which it is given is an indication of the efforts of colleges to liberalize themselves. They have acquired a new meaning and have been touched by a new spirit.

The professional schools have added another element to university life. One studies law to become a lawyer; medicine to become a doctor; engineering to become an engineer. In every case the student has definitely chosen his career. The mere presence of these students in the university means that old apprenticeship forms of training are no longer adequate. The science of the various professions has so far developed and the knowledge has grown so vast that from four to six years is necessary to train one for his profession.

The expansion and differentiation of universities into special schools and the large number of students electing professional training has caused the question of whether the state can and should continue to pay for this type of training to be raised. Should the states force the total cost of training entirely upon the students, it will mean that many of the ablest minds will be denied the privilege of being trained for the various professions. No one would have the temerity to maintain that the best ability is always lodged with those classes that are able to pay the total cost of education. Ability is distributed without reference to the social or economic classes or stations. If life is to be made safe, happiness to be promoted, wealth to be increased, citizenship made more secure, through study for the professions, then every possible means should be taken to attract the ablest minds to the professions, irrespective of the station from which they come.

It is also claimed that the professional schools do not train enough technicians for the professions, that they are unduly interested in training men for leadership. We may need more mechanics or technicians in the professions, but the day is long since

past when we will be satisfied with technicians, when exceptionally important questions are being considered. The people of every commonwealth demand professional engineers, trained lawyers, expert dentists, skilled surgeons. None other will satisfy. If state universities fail to provide advanced work in these fields, training for leadership in the professions will depend entirely upon the privately endowed schools. No state founded upon the philosophy of democracy can afford to let this come to pass. If it should, professional practice within the state will suffer and the science of the professions will be seriously retarded.

The recent growth of state universities has been responsible for another criticism. There are those who fear that too many may be seeking a higher education and that when they have secured it they will not be willing to do their fair share of the work of the world. This is a result which I do not fear. An examination of the facts will show that the educated person will do his share of the work of the world, and that he will do it better because he has an education. It does not follow at all that because one has an education he will not love to farm, to build houses, to work in the mines, the shops, or the factory. Conditions everywhere indicate that we need more educated persons doing these things. Furthermore, education offers the only real solution for many of the most acute political and social questions with which we are confronted. Much of the peril of the present situation is due to ignorance. If the universities do not provide sound training on such questions, we may be certain that some kind of training, whether it be true or false, will be provided elsewhere. It is not less but more thoroly sound, impersonal, scientific study of such questions that is needed.

The graduate schools, since their establishment, have been devoted to the advancement of learning. This advancement is dependent upon the ability and initiative of the students. Many of the graduate schools have in recent years lost the tradition that they are places for the advancement of learning, because they have taken on new functions. For a number of years, these schools have really been schools for the preparation of teachers for college. In becoming such, they fulfilled a real purpose and responded to a real need, but the advancement of learning for its own sake has suffered in consequence. Graduate students once associated

as groups of scholars. They indulged in the free discussion of their common problems and current questions, but when graduate schools turned their attention to the training of teachers this common scholarly interest for all graduate students was lost. They ceased to assemble as a body and frequently as groups. Learning for its own sake no longer stimulated them. The only common bond they had was the fact that they were registered in the same school. Instead of becoming scholars in possession of a widely related body of knowledge, they became specialists upon some narrow phase of it. Such persons are not likely ever to become great scholars. The great contributions to knowledge have always been the product of great scholars. Great scholars are not made by students working in small compartments of knowledge. Kindredness of mind, liberalism of spirit, wholesomeness of philosophy result from contact with large fields of integrated knowledge. A tradition of learning we must have. Without it the graduate schools will cease to be a place where learning is loved. Without it science will not advance, learning will disintegrate, and there will be no steadying force in civilization.

Several other forces have contributed to the partial breakdown of the tradition of learning. One has been the advent and growth of the indiscriminate elective system, which happily is passing. Another influence has been the specialization of function in the professions. In place of the general practitioner of medicine, we have a specialist upon some part of the human anatomy. Instead of a general course in engineering, we have special courses in mechanical, civil, chemical, mining, hydraulic, highway engineering. Business, once a trade, is becoming a profession, with its many lines of specialization. Every large establishment has its expert advertiser, buyer, credit man, sales chief, accountant, and business manager. Every bank has its expert upon insurance, income and profits tax. All of these differentiations are reflected in university administration. Combined with the other forces at work, the university faces the danger of graduating its students with what some have called "split and partial minds, students whose intellectual attitudes are undisciplined and extemporaneous." It is patent to the student of education that the whole field of knowledge has been divided so frequently for the purpose of creating separate subjects to meet assumed needs, that a thoroly

sound education may be denied many students. The splitting of the materials of education into a multiplicity of subjects results in an over-emphasis of the materials occurring within a given field, and necessarily leaves the student with a fragmentary conception of nearly every field.

Universities need to make a rigorous study of the materials of education. Nothing would pay larger dividends than for faculties to become students, both of the art of the teaching and the materials of instruction. University teachers in America are more interested in discussing administrative devices, ways of securing recognition in the administration of their institutions, and the rules and politics of educational organizations, than they are in becoming better classroom workers.

When credits and hours and wages and recognition are the main themes of a body of teachers, we may be certain that their idealism has been colored and tintured by the industrialism of the times, rather than by the professionalism of their calling. Just as many teachers are disposed to emphasize questions and problems that lie at the periphera of their realms, so many students think in terms of credits, hours', semesters', and years' work, and the result is that thoroughness of scholarship is in danger of being neglected. If there be any truth or justice in this criticism, it can not be held to apply with equal force to all units of the university at all times. Wide variation at any given time exists with respect to the completeness with which the various units of the university fulfill their functions. Each unit should periodically inventory its organization and evaluate the results it is securing. It should see if it is making its specific contribution to the education of the students in the most effective manner possible.

But even tho weakness may exist here and there, the mass results of the university are encouraging. There are ideals, there is a tone, there is an atmosphere characterizing the life of a university that distinguishes it from every other human institution. Whatever the ideals, the tone, or the atmosphere may be, it is as truly a function of the university to foster, conserve, safeguard, and stimulate these as it is a function of the university to provide instruction of a specific and definite character. Both make their impacts upon the student. Perhaps the most important of these general functions is the catholicity of spirit the university seeks to

inculcate on all occasions. A truly educated man will be, to a certain extent, a cosmopolite. He will be a student of the problems of other nations. He will recognize that his own nation can not maintain permanently an attitude of singular insularity, for its future is closely knit with that of foreign nations. The loyalty of an educated man to his own country will not blind him to his obligations as a citizen of the world, nor will he be led astray by local and ephemeral interests. The philosophy he cherishes for himself he will wish to extend to the rest of the world. What is that philosophy? What does the truly educated American believe in? He believes that his institutions are social in origin and in nature, not the product of any individual, nor of any group of individuals, that they represent the soul-hungers and the spiritual expressions of the common people. He believes that the only natural rights anyone has are those that he uses for collective welfare. He believes in equal rights before the law. He believes in equality of opportunity. He believes that potentially the achievement of the individual is measureless. He believes that a generous education for himself and a better one for his children is the only safeguard of democracy. These are the priceless possessions of his creed, the articles of his faith which he desires to have transmitted and made available for mankind everywhere.

It seems strange that it should be necessary to emphasize these truths at this time, when the average man has had his vision widened and his imagination stimulated by the world war. The culture, problems, and interests of other nations are a part of his daily thought. The effect of the individual's consideration of these problems and interest is educational, but the unfortunate truth nevertheless remains that some think patriotism means my country against the world, instead of for and with the world. Traditionally, we may be narrowly nationalistic, but educationally, economically, and politically this country is a member of the congeries of nations. Our Christian ethics teaches us to be our brother's keeper, and the golden rule commands us to do unto others as we would have them do unto us. Any individual who thinks of his job primarily in terms of the money he can earn from it, anyone who thinks of a profession in terms of personal gain, any nation that thinks that its problems lie almost entirely within its own boundaries, is on the road to self-destruction. The ancient dividing line

between the Old World and the New has disappeared. America can not retain a detached position. The logic of events is demonstrating the utter helplessness and hopelessness of those who cling to such a deluded point of view. Americanism means that we can not dissociate ourselves from our interests and our interests require that Europe be lifted out of the mire and restored to life and prosperity.

A university does not engage in propaganda, but its very atmosphere breathes of the spirit of helpfulness and of interest in the problems of men everywhere. Its graduates should live in a republic of minds that is not limited by time nor geographical boundaries. If this concept seems ideal it is none the less important for that reason. When a university ceases to be saturated with high-minded cosmopolitanism, a spirit of mutual helpfulness, and a desire to know and to understand the problems of the world, it will cease to be a university. When it gathers under its cloak a spurious cosmopolitanism whose insidious intent is destruction, it becomes a menace to social welfare. This great aim, this fundamental purpose of a true university we must constantly proclaim, that we may not lose sight of it.

Another of the general functions of the university, quite as important as the development of a generous, intelligent and discriminating spirit of cosmopolitanism, is that of service to community or state, in which the university is located. Perhaps one would say that has always been its purpose and that it has been realized only as universities have sent back to the community or the state efficient graduates. And this statement, of course, is correct. The final measure of value of a university is the kind of service its graduates render. Both the university and its graduates underwrite each other. If either declines in merit or worth to the community, the other declines; if either grows stronger and better and serves more nobly the other improves correspondingly.

There is another way in which a university may serve the community, and that is by assisting it in solving its problems. If the state wishes to know how to beneficiate certain ores, how to eradicate wheat rust, to determine the economic value of peat, to discover the best methods of extracting syrup from cornstalks, how to build roads, how to harness its water, how to eliminate the white pine blister, it will apply to the university for

assistance. I foresee a time when state law schools will collaborate with the judiciary in the codification of the laws and in the assembling of legal materials required for the preparation of opinions or decisions. I predict that sooner or later there will be erected as a part of our engineering schools institutes of research to which all sorts of practical engineering problems will be brought by the state and by corporations and individuals. It is said that a little less than \$100,000,000 a year is now spent on engineering problems in private laboratories. The prodigality of this will be recognized eventually and a coöperative arrangement will be entered into with the universities to do much of this work. When this comes true, men of science will not be taken away from institutions of learning, but will be urged to remain there by the very organizations and people that are now taking them away. I believe that schools of commerce and business will find a corresponding service and that their advanced work will be largely financed by the special projects which they receive from the manufacturing and mercantile establishments of the community.

The principles which will govern the contact of the university with the community will not differ in a single respect from the principles that govern that contact now. The university will refuse to become commercialized. It will not sell itself. It will accept only those projects that have an educational value. It will insist upon the right to publish the results of its researches, and business, whether corporate or individual, will gladly consent to that right.

Every school and college of the university will find larger opportunities for community service in the future. The school of medicine will enjoy the respect of the medical practitioner. It will bear the same relation as consultant to the practitioner that he bears to another physician. The state will locate general hospitals at the university to which patients will be sent from every section of the state for care and treatment. As health education becomes more universal community and private hospitals will increase in number. Affiliation between them and the general hospital will be arranged to the mutual advantage of both and to the very great advantage of the people of the state.

There is one other service which the universities should perform and that is the publication of the results of their investigations and researches, particularly those that have a practical bearing upon the practical problems of the community. Many of these investigations are written in a highly technical language and are filed away for safe keeping in the archives of the university. They will need to be rewritten in a language suitable for popular consumption and widely distributed to those who may profit by them. There is enough material of this sort filed away in universities to produce important if not radical changes in many fields.

As one contemplates this conception of university education, he is impressed with its enormous possibilities. He comes to the inevitable conclusion that the great objectives of life will always be reflected in the curricula of the university. Just now these objectives seem to be intelligent citizenship, economic betterment, social and individual justice and health. Furthermore, the university of the future will be the one best place in all the world for intellectual training, for a mastery of the technic of the professions and the instruments of inquiry and research. It will be a place where men will learn to think in terms of larger units and more abiding forms of service. The state university of the future will never return to the simpler theories and practises of earlier days, and yet it will exalt scholarship as truly as it was exalted in those days. The university of to-morrow will have a social vision as well as an effective kind of individualism. It will be dedicated to the making of a better world to live in. It will not neglect its duty as a guardian of the treasure of civilization nor as a pioneer on the frontiers of knowledge, but will acquire a new breadth of interests and sympathies, outlooks, intellectual tastes, and appreciations in harmony with the age it lives in and to which it owes its being.

Moreover a university contributes not merely to the wealth of the people but to their health, conceptions of justice, right living, satisfactions, and forms of enjoyment. It assists them in solving their problems. It stands for truth. And to-day it is summoned as it has never been summoned to discover the truths in many new fields. Science which hitherto has been naturalistic has now become humanistic. Ethics, history, economics, politics, and sociology are being quickened with a new interest, and invested with a new significance. They are essential to a correct

appraisal of the various challenges that are being made to-day. These challenges are serious. They call for careful investigation and clear thinking. A university will not be satisfied with theories and opinions. It will seek facts upon which to base programs and policies, even tho the world may appear to be in a state of flux.

A time of change is usually a time of progress. The world moves forward by a series of varying emphases. Things that are emphasized in one generation may lie dormant or be lost sight of in a succeeding generation. History is characterized by epochs of faith and epochs of doubt. We have periods of liberty and periods of oppression, periods of conservatism and periods of liberalism. The present period is a time of change. It is a period of reconstruction. The foundations of the whole social and political structure of the world were shattered and in some cases totally destroyed by the war. Now we are searching for a firm foundation upon which to build a stable social and political structure. The problems associated with this important work are numerous and vast. The world recognizes this and it is sending its children to school to prepare them to assist with the solution of these problems. Universities everywhere have acquired a new vigor under this stimulus. Science is being remade, unsolved political, social, and economic problems of gigantic proportions await solution on every hand. New fields of endeavor, requiring trained leaders, are being created every day. A trained intelligence, once a privilege, then a right, has now become a duty.

Assuming that the number of persons desiring university education will continue to increase and that it is possible for the state to provide the funds necessary for their education, there remains a number of other unsolved problems. Some reorganization of the whole system of education is clearly necessary. So far as it relates to university education there are several practical suggestions that may be made. Universities must examine closely their standards of work. They must be as economical in the use of their funds as any reputable business establishment would be. While not too ready to change, they must not cling too tenaciously to tradition in their organization and administration. They should attempt the classification of freshmen and sophomores at least, as long as they have these years, on the basis of their ability and previous attainment. Not nearly enough attention is given to this

matter. It is a well-recognized fact that students in the same class are as far apart as the poles intellectually, and yet they are expected to do the same work and to spend the same time in doing it. The classification of beginning university students is usually on the basis of the convenience of the administration. The University of Minnesota has made a very happy beginning in this matter so far as foreign languages are concerned. Students are segregated on the basis of their previous training. But there are institutions that give no consideration to this problem, and there is still much room for improvement in the University of Minnesota.

The University of Montana is doing a progressive and sane thing in breaking away from this unreasonable and archaic form of administrative procedure. It is classifying its entering students in English on the basis of their ability to use it. The gifted ones carry the subject only one quarter; those a little less gifted, two quarters; and the least gifted, three quarters. This plan has released instructors for other work, and it has placed a premium upon attainment and achievement. It is a step in the right direction. Other departments would do well to follow the plan in their work.

The Law School at Minnesota has this year entered into an interesting affiliation with some of the private colleges of the state. The first three years of work will be carried in the private college, and the last year in the Law School at the University. Upon completion of one year in the Law School, the student will receive his baccalaureate degree from the private college.

It has remained for the University of Chicago to take the most progressive experimental step. It maintains a university high school. Graduates of this high school, it has been found, may enter junior mathematics, sophomore history, junior modern languages, depending upon the course they took in high school. Minnesota has found the same thing to be true of the graduates of the University High School in mathematics. Other subjects could and no doubt will be included in this arrangement in the course of time. It may seem anomalous to the traditional academician to give collegiate credit for work carried in high school, but it should be done. The manner in which the plan should be administered is not a matter of discussion at this time.

All of these suggestions are mere expedients. They do not strike at the heart of the situation. A thoro reorganization of the program of education will involve a reorganization of the materials of education. An overhauling of the materials of instruction should make it possible for the bright student to do in twelve years what is now required in fourteen years. How this reorganization of the materials of instruction should proceed is a chapter in itself, and must be left for elaboration at another time.

If I were to use a figure of speech outlining the function of a state university, I would compare it to a lighthouse with a power plant at its base. From this power plant I would have lines radiating in every direction, carrying force, strength, and power from the lighthouse into every community and hamlet, into every home and to every individual. These lines of power and strength would consist of thousands of graduates, not merely the representatives of the professions—medicine, dentistry, pharmacy, nursing, education, law, business, social and civic work, agriculture—but lines for the dissemination of knowledge, and for the establishment of forms of service, which would minister to the health, insure justice, greater economic returns, better social conditions, and happier homes in every part of the state. I would multiply the points of intimate contact between its college of engineering and engineering life in the state; between its college of agriculture and the farming industries of the state; between its law school and the legal fraternity of the state; between its medical school and the community hospitals of the state. The power plant should be of such a nature that everything it touches would be strengthened. The results of new research would be like new wires going out from the power plant to serve some new interest in the state. I would have the power plant and the light in the lighthouse grow as the state grows, increase in strength as the state increases in strength, never diminishing in their influence, but on the contrary increasing in vigor and effectiveness with each succeeding year.

I have in the foregoing analysis set forth what I believe to be the proper conception and function of a true state university. I believe that the principles underlying this conception inhere in the very constitution of democratic society and that they can no more be disregarded or denied than democracy itself. This, however, does not prevent me from having a deep sympathy with

those well-meaning persons who urge economy in the administration of university affairs and also with those persons who, from time to time, question the policies of the educational institutions. Intelligent questions and constructive suggestions keep the university sensitive to the constituency it serves, and some of them force the university to redefine its purposes and to check its practices; all of which is wholesome.

Several of the reforms that have been suggested recently are of such importance as to deserve a brief consideration in this report. One is that the University should limit its registration to students who are residents of the state. One's first impression is that this is a practical suggestion. The University of Minnesota is providing instruction for about one thousand non-state students. Does not this force an unnecessary and unreasonable burden upon the taxpayers of the state? An examination of the situation shows that Minnesota has almost, if not quite, as many students in the universities of neighboring states as these states have in the University of Minnesota. Clearly there would be no economy if the different states limited their registration to residents within their borders. To do so would not only be unwise economy but poor education. It would mean that the universities would tend to become limited and provincial in their points of view.

Some of the more extreme advocates of economy have urged the University authorities to place a limitation upon registration. It does not seem possible, under the laws of the state, for the regents of the University to take this action. It seems, in case a limitation is to be placed upon the number of students which the University shall accommodate that the legislature must enact laws to that effect. Before the citizenry of the state closes the doors of the University to those who are qualified to attempt a university education, it should consider carefully the ultimate consequences of such a policy.

It has also been suggested that the University might save money for the state by eliminating all incompetent students. Every reasonable device for the discovery of such students should be used and, when once discovered, these students should be dropped. No special favor should be shown them. But the number of incompetent students is far less than is commonly supposed. Furthermore, it should not be forgotten that many students mature slowly

and do not exhibit their true worth or ability until late in their scholastic careers. One of the traditions of the American people is their faith in the unlimited potentiality or possibilities of the individual. We have no adequate way of measuring or prophesying the ultimate achievement of anyone. For this reason we are willing to experiment at great expense in order that we may discover and provide adequately for those who may achieve. The loss we experience in experimenting with the incompetent is far more than offset by the gain in discovering talent and ability. An educational institution is really a social experimental agency consciously organized for the purposes of giving every individual a fair chance to reveal his abilities.

Other suggestions of like nature but of less importance have been made, such, for example, as reducing the offerings of colleges, increasing the number of students per instructor or the teaching load. None of these things is possible if the University is to provide anything like a fair opportunity for its students and a reasonable opportunity for the staff for self-improvement, study, investigation, research, and for contact with the students.

II

In this part of my report, I wish to record briefly the significant events of the University year.

ADMINISTRATIVE MEASURES

The departments of English and Rhetoric united.—For a number of years the University of Minnesota has had two departments known as the Department of English and the Department of Rhetoric. Most of the American universities have combined these two departments into one large department of English.

On May 30, 1921, Dean Johnston, of the College of Science, Literature, and the Arts, submitted a report in which the faculties of the two departments of English recommended the consolidation of the two departments. On June 14, 1921, the Board of Regents adopted the following reorganization program:

1. That beginning with July 1, 1921, the departments of English and of Rhetoric and Public Speaking shall be merged into a separate department to be known as the Department of English.

2. That the title of all members of the present Department of Rhetoric and Public Speaking, except those engaged in the teaching of public speaking, should be changed from rhetoric to English. The members of the public speaking staff desire to be designated specifically as instructors or professors of public speaking.

3. The departments recommend for appointment as chairman for the academic year 1921-22, Professor Joseph M. Thomas.

Conferring of degrees at the close of the fall quarter.—The question of holding a special convocation at the close of the fall quarter for those students who had completed their work, was discussed at a meeting of the Administrative Committee of the Senate held December 1, 1920. The following report from the Special Committee appointed September 23, 1920, to consider the question of granting of degrees at other times than Commencement Day, was presented and approved: (1) that provision may be made for the conferring of degrees at the end of each University session; (2) that whether a convocation shall be held each quarter and the date and place of same, should be referred to the Committee on University Functions for recommendation; (3) that the existing rule providing that absence from commencement should be approved only in case of illness or circumstances beyond the individual's control, or in cases where the work is done *in absentia* under the direction of the University, should be reaffirmed; (4) that a special convocation at the close of the fall quarter be held.

Classification of clerical and stenographic employees.—The special committee on the classification of secretarial, stenographic, and clerical help made a report which tends to standardize the promotions and salaries of this class of University employees. The following classification and salary schedule was adopted by the Board of Regents at the meeting on June 1, 1921, as a part of the new budget:

Secretaries and chief clerks: Class 1, salary \$1,500 to \$1,800; class 2, salary \$1,380 to \$1,500; class 3, salary \$1,200 to \$1,380.

Clerks and stenographers: Class 4, salary \$1,080 to \$1,200; class 5, salary \$960 to \$1,080; class 6, salary \$840 to \$960.

Clerical assistants: No classifications, salary \$720 to \$840.

A further study of the character of the work, importance of the position, the training, the experience, and the ability of each

individual group will be made so that promotions hereafter may be placed as nearly as possible on a merit basis.

Vacation periods.—We have recently had completed a special committee report on the vacation periods of all Class "A" employees. The report of the special committee was presented to the Board of Regents on May 12, 1921, and the board voted as follows:

That vacation periods for Class A appointees be allowed according to the following classification:

Class A-I. At Least One Month's Vacation

Administrative staff: Deans, executive heads, superintendents, controller, librarian, registrar, director, Students' Health Service.

Class A-II. Two Weeks' Vacation

Miscellaneous workers: Animal keepers, bakers, butchers, charwomen, cooks, elevator men, equipment men, gardeners, janitors, laborers, laboratory helpers, laundresses, maids, material men, motormen, orderlies, pressmen, property men, service men, service women, tool keepers, trades, truck-drivers, etc.

Class A-III. Three Weeks' Vacation

Office help 7 1/2 hour day: Accountants, cashiers, clerks, stenographers, telephone operators, typists.

Mechanicians and technicians: Embalmers, florists, illustrators, pharmacists, photographers, taxidermists.

Chiefs and foremen: Campus, engineers, farms, forestry, horticulture, skilled trades.

Class A-IV. Four Weeks' Vacation

Appointees on the instructional, research, and extension staffs, library workers, nurses, office help on 8-hour day, social workers, secretaries.

The vacation periods of these various classes and groups will now be systematized, and this will avoid confusion and misunderstanding among them.

CHANGES IN THE FACULTIES

The inauguration of President Coffman.—On May 12, 13, and 14 the inauguration ceremonies for the fifth president of the University, L. D. Coffman, took place. In addition to the usual impressive ceremonies for such an occasion, there was held an educational conference the subject of which was "The University and the Commonwealth." Leading educators from all parts of the United States appeared on this program and presented papers

on different aspects of the function of a university in its relation to the commonwealth and to the nation. The papers presented at this meeting are published in a volume entitled, "The University and the Commonwealth." The following speakers appeared upon the program:

- The University and the Development of Agriculture, President Frank L. McVey, University of Kentucky.
- The University and Professional Training, Dean James E. Russell, Teachers College, Columbia University.
- The University and the Development of Culture, President Henry Suzzallo, University of Washington.
- The University and Research, Mr. Vernon L. Kellogg, secretary of the National Research Council.
- The University and the Development of Commerce and Business, Dean James E. Hagerty, College of Commerce and Journalism, Ohio State University.
- The University and Public Health, Dean Charles P. Emerson, School of Medicine, Indiana University.
- The University and the Technological Sciences, Dean Charles R. Richards, College of Engineering, University of Illinois.
- The University and Jurisprudence, Professor William R. Vance, Yale University.

Resignation of Regent A. E. Rice.—In November, 1920, Regent A. E. Rice, former governor of Minnesota, resigned as a member of the Board of Regents. On December 14, 1920, the Board of Regents wrote into the official minutes the following statement:

It is with regret that the Board of Regents records the resignation of Mr. A. E. Rice. For twenty-three years he has faithfully served the University and the state as a member of the Board. His advice and counsel were sought on all matters pertaining to the growth and expansion of the University, but it was as a member of the Agricultural Committee that he rendered peculiar and efficient service. He was thoroughly familiar with agriculture and always willing to give unlimited time to the study of the needs of the Department of Agriculture. The Board profited by his sober and sound judgment and his thoughtful consideration of every problem relating to the development of the agricultural interests of the state. Mr. Rice retires with the confidence, respect, and esteem of every member of the Board, and with a full consciousness that much of the prosperity of the University during his tenure in office has been due to his constant loyalty and devotion to the institution. At all times he considered himself the servant of the state, and as such, worked with unflagging zeal and with rare conscientiousness to preserve the traditions, ideals, and standards of the University.

Honorable L. E. Potter was appointed by Governor J. A. O. Preus to fill the vacancy on the Board of Regents created by the resignation of Mr. Rice.

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

Ora Miner Leland, dean of the College of Engineering and Architecture and the School of Chemistry.

B.S., 1900, University of Michigan; C.E., 1920, University of Michigan; United States engineering practice, 1898-1900; Coast and Geodetic Survey, 1900-3; Cornell University, 1903-20.

Everett Fraser, professor of law and dean of the Law School.

B.A., Dalhousie College, 1907; LL.B., Harvard Law School, 1910; assistant professor, professor, and dean of the Law School, George Washington University, 1910-17; professor of law, University of Minnesota, 1917-20.

Henry W. Ballantine, professor of law.

B.A., 1900, Harvard University; LL.B., 1904, Harvard University; lecturer, University of California, 1905-9; dean and professor, University of Montana, 1911-13; professor, University of Wisconsin, 1913-16; dean, University of Illinois, 1916-20.

Evan F. Ferrin, professor of animal husbandry.

B.S., 1911, Iowa State University; Honorary M. Agriculture, 1920, Iowa State College; Iowa State College, 1911-12; Texas Agriculture and Mechanic Arts College, 1912; Iowa State College, 1912-18; Kansas State Agricultural College, 1918-20.

Reginald Fitz, professor of medicine, Mayo Foundation.

B.A., 1906, Harvard University; M.D., 1909, Harvard University; Massachusetts General Hospital, 1909-11; Johns Hopkins Hospital, 1911-13; Peter Bent Brigham Hospital, 1913-14; assistant in physiology, Harvard Medical School, 1914-15; Rockefeller Institute, 1915-17; United States Army Base Hospital No. 5, 1917-19; Massachusetts General Hospital, 1919-20.

Henry G. Helmholtz, professor of pediatrics, Mayo Foundation.

B.S., 1902, University of Wisconsin; fellow in pathology, Johns Hopkins Medical School, 1906-7; assistant professor of pediatrics, Rush Medical College, 1910-19; chief of service of the Children's Memorial Hospital in affiliation with the University of Chicago, 1920.

Henry H. Rutherford, lieutenant colonel, United States Army, professor of military science and tactics.

B.A., 1895, University of Missouri; M.D., 1898, University of Missouri; first lieutenant assistant surgeon, Second Missouri Infantry, 1898-99; captain, assistant surgeon, 1901; captain, assistant surgeon, 1905; captain, Medical Corps, 1905; major, Medical Corps, 1910; lieutenant colonel, Medical Corps, 1917; colonel, Medical Corps, National Army, 1917-19.

Colonel Girard Sturtevant, lieutenant colonel, United States Army, professor of military science and tactics.

United States Military Academy, 1895; instructor and assistant professor in Department of Modern Languages, United States Military Academy, 1898-1902; military attaché, United States Embassy, Mexico, 1908-12; University of Paris, 1919; Army School of the Line, 1920.

Ruby Baughman, professorial lecturer in anthropology and Americanization.

B.A., 1900, University of Iowa; M.A., 1902, University of Iowa; State Normal School, Los Angeles, 1911-16; supervisor of immigration education, Los Angeles city schools, 1916-20; summer and extension work, University of California, 1917-20.

Antony Constans, professorial lecturer in Romance languages.

Baccaluréat, Latin, 1913, Grenoble; Baccaluréat, Philosophy, 1914, Grenoble; Baccaluréat en Droit, 1914-15, 1917-19, Faculté de Droit, Grenoble; Licencié ès Lettres, 1918, Faculté des Lettres, Grenoble; Lycée de Grenoble, 1918-19; Université de Grenoble, 1919; University of Chicago, 1919-20.

Fred Kuhlmann, professorial lecturer in educational psychology.

B.A., 1899, University of Nebraska; M.A., 1901, University of Nebraska; Ph.D., 1903, Clark University; assistant, University of Nebraska, 1899-1905; instructor, University of Wisconsin, 1905-6; lecturer, Clark University, 1906-7; instructor, University of Illinois, 1907-10; director of research, Minnesota School for the Feeble-Minded, 1910.

John H. Rowen, professorial lecturer, mechanical engineering.

Graduate, United States Naval Academy, 1891; post graduate, United States Naval Academy, 1893; commander United States Navy on retired list; license under Department of Commerce, as master of ocean-going steamships of unlimited tonnage; general engineering practice, 1893-1909; military duty, 1909-11; research in South America for the University of Pennsylvania, 1912-13; Toledo University, 1913-14; University of Michigan, 1914-17; war work in the Navy, 1917-20.

Dr. Conrad Jacobson, associate professor of surgery.

B.S., 1900, Beloit College; M.D., 1911, Johns Hopkins University; teacher of science, High School, Watertown, South Dakota, 1900-2; graduate student, Chicago University, 1902-5; assistant professor of chemistry, Armour Institute of Technology, 1905-8; instructor in surgery, Johns Hopkins Medical School, 1911-12; instructor in surgery, Harvard Medical School, and resident surgeon, Peter Bent Brigham Hospital, 1912-20.

Dr. William Lerche, associate professor of surgery.

Graduate in Pharmacy, University of Norway; M.D., 1897, University of Illinois; graduate work, Berlin, 1899; graduate work, Vienna, 1909; professional practice.

Jesse B. Sears, associate professor of educational administration.

B.A., 1909, Leland Stanford Junior University; Ph.D., 1920, Columbia University; instructor, University of Wisconsin, 1909-10; instructor, assistant professor, and associate professor, Leland Stanford Junior University, 1911-20.

Earl A. Stewart, associate professor of agricultural physics.

B.Pd., 1910, Michigan Normal College; B.A., 1915, University of Chicago; head of the Science Department, Wichita High School, 1910-14; head of the Science Department, Gilbert High School, 1914-17; assistant professor of physics, Kansas State Agricultural College, 1917-20.

Helen Clark, assistant professor of educational psychology.

B.A., 1913, Vassar College; Ph.D., 1916, University of Illinois; assistant in psychology, Rutgers College, 1914; instructor in psychology, Rutgers College, 1915-16; instructor in psychology, Vassar College, 1916-17; instructor in psychology, Reed College, 1919-20.

George P. Conger, assistant professor of philosophy.

B.A., 1907, Cornell University; B.D., 1910, Union Theological Seminary; minister, First Presbyterian Church, Rice Lake, Wisconsin, 1913-15; Y.M.C.A. secretary, prison camp, Khabarovsk, Siberia, 1915-17; minister, First Presbyterian Church, Palisades, New Jersey, 1918-20; assistant field worker, Union Theological Seminary, 1920.

Guy R. B. Elliott, assistant professor of farm drainage.

General engineering practice; research, University of Wisconsin, 1919-20.

Lewis F. Garey, assistant professor of agronomy and farm management.

B.Sc., 1914, University of Nebraska; M.A., 1915, University of Nebraska; assistant supervisor, Teachers' College High School, University of Nebraska, 1912-15; head of Agricultural Department, Peru Normal School, 1915-17; associate agronomist, Colorado Agricultural College, 1917-19; state supervisor of agricultural education, Colorado, 1919-20.

Joseph E. Gillet, assistant professor of Romance languages.

Ph.D., 1910, University of Liège; lecturer in French, University of Edinburgh, 1910-11; University of Leyden, 1911-12; University of Munich, 1912-13; instructor in German, University of Wisconsin, 1913-15; associate professor in French and comparative literature, University of Illinois, 1915-18; University of Madrid, 1919-20.

Rodney B. Harvey, assistant professor of botany.

B.S., 1915, University of Michigan; Ph.D., 1918, University of Chicago; assistant, University of Michigan, 1914-15; fellow, University of Chicago, 1917; physiologist, United States Department of Agriculture, 1915-20.

John Huseby, assistant professor of animal husbandry, Northwest School and Station, Crookston.

Dr. Norman W. Keith, assistant professor of medicine, Mayo Foundation.

B.S., 1908, University of Toronto; M.D., 1911, Johns Hopkins University; internship, New York Hospital, 1911-14; instructor in medicine, Johns Hopkins University, 1914-16; R.A.M.C., B.E.F., British Shock Commission, 1916-18; clinician in medicine, University of Toronto, 1919-20.

Arthur J. Schwantes, specialist in land clearing with rank of assistant professor.

Graduate in Agriculture, 1917, University of Wisconsin.

Edward G. Sherburne, captain, United States Army, assistant professor of military science and tactics.

Graduate, West Point, New York, 1915; United States Army, 1915-20; Military Department, St. John's College, Washington, D.C., 1919-20.

John J. Pettijohn, assistant to president and director of the Summer Session.

B.A., 1911, University of Wisconsin; instructor and secretary, Extension Division, University of Wisconsin, 1909-13; director, Extension Division, University of North Dakota, 1913-14; director, Extension Division, Indiana University, 1914-20; director, Division of Educational Extension, Bureau of Education, Washington, D.C., 1918-19; Army Training School, Camp Grant, March 1 to July 1, 1920.

Albert J. Lobb, comptroller.

B.A., Ripon College, 1905; Ph.B., University of Chicago, 1908; LL.B., University of Wisconsin, 1910; LL.B., University of Minnesota, 1912; instructor Chippewa Falls High School, 1905-9; Grand Forks High School, 1910-11; instructor and assistant to the principal, West High School, Minneapolis, 1911-18; lecturer in Law School night classes, University of Minnesota, 1916-18; assistant superintendent of schools, Minneapolis, 1919; assistant professor, Department of Political Science, University of Minnesota, 1919-20; assistant to the president, University of Minnesota, 1920.

Ernest Boynton Pierce, field secretary.

B.A., University of Minnesota, 1904; assistant registrar, University of Minnesota, 1904-5; registrar, 1905-20.

Rodney Mott West, registrar.

B.A., University of Minnesota, 1906; instructor, Division of Agricultural Biochemistry, 1909-12; assistant professor, 1912-16; associate professor and secretary of the Department of Agriculture, 1916-20.

Promotions.—From professor to professor and chief: Dr. S. Marx White; from associate professor to professor: Dr. E. T. Bell; from assistant professor to associate professor: Dr. F. C.

Rodda; from superintendent to associate professor: M. J. Thompson, Duluth; from instructor to assistant professor: Norris Carnes, A. H. Larson, Dr. Max Seham, Emerson G. Sutcliffe, Gustave van Roosbroeck.

Leaves of absence granted during the year.—Dean W. R. Appleby, School of Mines, leave from May 28 to September 21, 1921, with pay and Professor W. H. Emmons, Department of Geology, from May 27 to September 5, 1921, without pay, in order to undertake certain studies in northern China; Professor John I. Parcel, College of Engineering and Architecture, sabbatical furlough for the year 1921-22; Professor C. O. Rosendahl, Department of Botany, leave for the fall quarter of the year 1920-21, without salary, because of illness; Professor David F. Swenson, Department of Philosophy and Psychology, leave for the academic year 1920-21, without salary to accept an appointment with the College of the City of New York; Associate Professor P. J. Brekhus, College of Dentistry, leave from May 19 to June 15, 1921, with pay, in order to visit the leading schools and practitioners in this country before going abroad to give a series of clinics in the Scandinavian countries during the summer; Associate Professor E. P. Harding, School of Chemistry, sabbatical furlough from February 1 to September 1, 1921, with half pay, part of the time to be spent at the University of Oklahoma to study petroleum technology; Associate Professor William Moore, Department of Agriculture, leave from April 15 to October 1, 1921, with pay, in order to aid in the work against the Japanese beetle, of New Jersey; Associate Professor M. O. Pattridge, College of Dentistry, leave for the winter and spring quarters of the academic year 1920-21, without pay; associate Professor S. C. Shipley, College of Engineering and Architecture, leave for the academic year 1920-21, without pay, to teach in Roberts College, Constantinople.

Resignations.—During the year the following members of professorial rank resigned from the faculty: J. T. Gerould, librarian of the University; R. W. Thatcher, dean of the Department of Agriculture and director of the agricultural experiment stations; A. D. Wilson, director of Agricultural Extension; Dr. L. G. Rowntree, chief of the Department of Medicine; Carleton Brown, professor of English; A. J. Todd, professor of sociology;

R. A. Dutcher, associate professor of agricultural biochemistry; Ralph E. House, associate professor of Romance languages; Grete E. Seham, associate professor of medicine; S. E. Switzer, associate professor of dermatology; Arthur L. Anderson, assistant professor of animal husbandry; J. V. Ankeney, assistant professor of agricultural education; Paul F. Brown, assistant professor of surgery; Mabel R. Fernald, assistant professor of psychology; Daniel Ford, assistant professor of rhetoric; R. J. Garber, assistant professor of plant-breeding; James W. George, assistant professor of surgery; George E. Holm, assistant professor of agricultural biochemistry; W. H. Kenety, assistant professor, Cloquet; Rupert C. Lodge, assistant professor of philosophy; William McDougall, assistant professor of oral surgery; J. B. Morgan, assistant professor of psychology; B. L. Newkirk, assistant professor of mathematics and mechanics; T. E. Odland, assistant professor of agronomy; C. J. Posey, assistant professor of geography; Lieutenant Harvey G. Thomas, assistant professor of military science and tactics; A. M. Bull, superintendent of buildings and grounds, Department of Agriculture.

Deaths.—The following death was recorded: Dr. Arthur J. Gillette, professor of orthopedic surgery, March 25, 1921.

STATISTICS OF REGISTRATION

Collegiate students.—Table I records the attendance of students of collegiate grade, i.e., those in courses leading to degrees. All students in this group must present for admission evidence of at least the completion of a four-year high school course. It is this group that must be kept most in mind in comparing the University of Minnesota with other colleges and universities.

The net gain of 827 students over the year 1919-20 represents an increase of 9 per cent.

A study of the registration figures by classes shows that most of this gain is in the sophomore class of those colleges which accept students direct from high schools, and that in most cases in these colleges the freshman class shows a marked dropping off from the abnormally large figures of the year 1919-20. In other words, the gain this year is to a great extent due to the large increase in the freshman class during 1919-20, the most of which are this year included in the sophomore count. The net

total registration shows an increase over that of the previous year in the College of Science, Literature, and the Arts, the College of Agriculture, Forestry, and Home Economics, the Medical School, the School of Mines, the College of Education, and the School of Business. The registration has decreased in the College of Engineering and Architecture, the Law School, the College of Dentistry, the College of Pharmacy, and the School of Chemistry. The most notable increase is in the Summer Session where the enrolment shows a gain of 429 or 27 per cent.

TABLE I. COLLEGIATE STUDENTS BY SCHOOLS AND COLLEGES
1919-1921

COLLEGE OR SCHOOL	YEAR 1919-20			YEAR 1920-21			GAIN	Loss
	Men	Women	Total	Men	Women	Total		
SCIENCE, LITERATURE, AND THE ARTS:								
Seniors	81	234	315	100	175	275	.....	40
Juniors	162	191	353	145	223	368	15	.....
Sophomores	555	406	961	923	571	1494	533	.....
Freshmen	1238	684	1922	1021	611	1632	.....	290
Unclassed	75	120	195	73	121	194	.....	1
Total	2111	1635	3746	2262	1701	3963	548	331
ENGINEERING AND ARCHITECTURE:								
Post-seniors	10	.....	10	.....	.....	.....	.....	10
Seniors	108	.....	108	128	2	130	22	.....
Juniors	153	3	156	160	1	161	5	.....
Sophomores	264	1	265	360	2	362	97	.....
Freshmen	646	2	648	412	2	414	.....	234
Unclassed	18	8	26	13	4	17	.....	9
Total	1199	14	1213	1073	11	1084	124	253
AGRICULTURE, FORESTRY, AND HOME ECONOMICS:								
Seniors	64	59	123	71	58	129	6	.....
Juniors	79	67	146	76	77	153	7	.....
Sophomores	77	70	147	130	99	229	82	.....
Freshmen	183	99	282	137	74	211	.....	71
Unclassed	9	17	26	9	26	35	9	.....
Total	412	312	724	423	334	757	104	71
LAW:								
Third-year	51	2	53	65	.....	65	12	.....
Second-year	65	1	66	85	2	87	21	.....
First-year	142	5	147	106	4	110	.....	37
Unclassed	1	.....	1	1	1	2	1	.....
Total	259	8	267	257	7	264	34	37

THE PRESIDENT'S REPORT

TABLE I—Continued

COLLEGE OR SCHOOL	YEAR 1919-20			YEAR 1920-21			GAIN	LOSS
	Men	Women	Total	Men	Women	Total		
MEDICAL:								
Seventh-year	53		53	56	5	*61	8	
Sixth-year	87	6	93	84	3	87		6
Fifth-year	54	2	56	57	8	65	9	
Fourth-year	76	7	83	72	4	76		7
Third-year	86	4	84	84	11	95	11	
Unclassed	2	1	3	10	2	12	9	
Special	11	2	13	13	2	15	2	
Total	363	22	385	376	35	411	39	13
NURSING		156	156		117	117		39
DENTISTRY:								
Seniors	79	3	82	92	3	95	13	
Juniors	90	4	94	118	1	119	25	
Sophomores	132	2	134	106	1	107		27
Freshmen	87	2	89	75	3	78		11
Unclassed	1		1					1
Total	389	11	400	391	8	399	38	39
DENTAL HYGIENISTS					9	9	9	
MINES:								
Seniors	16		16	18		18	2	
Juniors	20		20	25		25	5	
Sophomores	36		36	69		69	33	
Freshmen	86		86	53		53		33
Unclassed								
Total	158		158	165		165	40	33
PHARMACY:								
Fourth-year		2	2	1	1	2		
Third-year	15	12	27	10	11	21		6
Second-year	19	8	27	36	4	40	13	
First-year	52	9	61	39	13	52		9
Total	86	31	117	86	29	115	13	15
CHEMISTRY:								
Post-seniors	7		7					7
Seniors	19	1	20	24		24	4	
Juniors	26		26	21	6	27	1	
Sophomores	38	6	44	38		38		6
Freshmen	78		78	43	6	49		29
Unclassed		1	1	2	1	3	2	
Total	168	8	176	128	13	141	7	42
EDUCATION:								
Seniors	16	45	61	21	136	157	96	
Juniors	13	140	153	16	141	157	4	
Sophomores		21	21		43	43	22	
Freshmen		37	37	2	51	53	16	
Unclassed	81	143	224	56	133	189		35
Total	110	386	496	95	504	599	138	35

TABLE I—Continued

COLLEGE OR SCHOOL	YEAR 1919-20			YEAR 1920-21			GAIN	LOSS
	Men	Women	Total	Men	Women	Total		
BUSINESS:								
Seniors	20	1	21	40	10	50	29	.....
Juniors	45	12	57	52	9	61	4	.....
Unclassed	9	1	10	16	1	17	7	.....
Total	74	14	88	108	20	128	40	.....
GRADUATE	422	135	557	550	139	689	132	.....
WAR SPECIALS.....	31	.....	31	100	5	105	74	.....
SUMMER SESSION.....	787	809	1596	1178	847	2025	429	.....
Grand total.....	6569	3541	10110	7192	3779	10971	1769	908
Less duplicates.....	680	403	1083	817	300	1117	34	.....
Net grand total.....	5889	3138	9027	6375	3479	9854	827	.....

* Of this number 50 are students in absentia, completing the internship requirements for the Doctor of Medicine degree.

† This total comprises 289 transfers between the various schools and colleges and 828 students registered for the Summer Session of 1920 who were enrolled during the fall, winter, or spring quarters of 1920-21.

Collegiate enrolment by quarters.—Table II merely records the totals of Table I by quarters, showing the peak load of attendance in the fall quarter. Very few opportunities for beginning students were offered during the second and third quarters.

TABLE II. COLLEGIATE ENROLMENT BY QUARTERS, 1920-1921

	MEN	WOMEN	TOTAL
Summer Session, 1920.....	1178	847	2025
Fall quarter.....	5260	2500	7760
Winter quarter.....	5138	2400	7538
Spring quarter.....	4653	2320	6973
Total (individual) registrations.....	6375	3479	9854

Subcollegiate students.—Table III records the enrolment in departments which do not require high school graduation for admission.

No special comment concerning the subcollegiate group appears necessary, except perhaps for the following divisions:

1. *The Vestibule School.* This school was organized at the Central School of Agriculture, and is limited entirely to trainees of the Federal Board for Vocational Education who are so deficient in elementary school training that they are found to be unable to carry the work of the School

of Agriculture to advantage. These students, from time to time, are transferred to the School of Agriculture.

2. *The Gas Tractor Short Course.* This course was organized for the first time in 1920-21 with fifteen students, to supplement the work of the Traction Engineering Short Course.

3. *The Library Training School.* This course was offered at the University Farm, under the direction of the State Department of Education.

TABLE III. SUBCOLLEGIATE STUDENTS, 1919-1920

SCHOOL OR COURSE	YEAR 1919-20			YEAR 1920-21			GAIN	Loss
	Men	Women	Total	Men	Women	Total		
CENTRAL SCHOOL OF AGRICULTURE:								
Three-year Course:								
Seniors	85	28	113	122	38	160	47	.....
Juniors	134	47	181	190	53	243	62	.....
Freshmen	382	91	473	224	56	280	.....	193
Unclassed	238	.....	238	111	6	117	.....	121
Total	839	166	1005	647	153	800	.....	205
Intermediate Course.....	10	3	13	21	4	25	12	.....
Normal Course.....	.....	9	9	.....	.....	.....	.....	9
Special .....	.....	.....	.....	1	1	2	2	.....
Total school reg.....	849	178	1027	669	158	827	5	.....
Vestibule school.....	.....	.....	.....	162	.....	162	162	.....
Total school and vestibule	849	178	1027	831	158	989	.....	.....
Duplicates .....	.....	.....	.....	34	.....	34	.....	.....
Net total.....	849	178	1027	797	158	955	.....	.....
NORTHWEST SCHOOL OF AGRICULTURE, CROOKSTON:								
Three-year Course:								
Seniors	18	10	28	39	16	55	27	.....
Juniors	67	19	86	36	14	50	.....	36
Freshmen	144	41	185	91	29	120	.....	65
Total	229	70	299	166	59	225	.....	.....
Intermediate Course.....	.....	2	2	.....	.....	.....	.....	2
Total school reg.....	229	72	301	166	59	225	.....	76
WEST CENTRAL SCHOOL OF AGRICULTURE, MORRIS:								
Three-year Course:								
Seniors	13	10	23	17	23	40	17	.....
Juniors	28	28	56	41	24	65	9	.....
Freshmen	136	39	175	92	34	126	.....	49
Unclassed (Specials).....	.....	2	2	.....	.....	.....	.....	2
Total	177	79	256	150	81	231	.....	25
Intermediate Course.....	2	.....	2	2	.....	2	.....	.....
Total	179	79	258	152	81	233	.....	25
UNIVERSITY HIGH SCHOOL.	92	133	225	94	121	215	.....	10
Total schools.....	1349	462	1811	1209	419	1628	.....	183

TABLE III—Continued

SCHOOL OR COURSE	YEAR 1919-20			YEAR 1920-21			GAIN	Loss
	Men	Women	Total	Men	Women	Total		
SHORT COURSES:								
Dairy School.....	120		120	187		187	67	.....
Gymnasium Extension...	102	23	125	103	64	167	42	.....
Gas Tractor Short Course				15		15	15	.....
Traction Engineering....	21		21	21		21		.....
Library Training School					39	39	39	.....
Home Nursing.....		85	85		61	61		24
Boy Scout Short Course, Itasca Park.....	19		19	26		26	7	.....
Junior Short Course, Crookston.....	93	89	182	42	35	77		105
Farm Women's Short Course, Morris.....		74	74		122	122	48	.....
Boys' and Girls' Short Course, Morris.....				37	58	95	95	.....
Net total Short Courses.....	355	271	626	431	379	810	313	129
Grand total.....	1704	733	2437	1640	798	2438	1	.....
Less duplicates.....	1		1	1	2	3	2	.....
Net grand total.....	1703	733	2436	1639	796	2435		1

Extension students.—Table IV shows two types of students (a) general, those who pursue courses in classrooms under the personal direction of instructors, and (b) correspondence, those who take study courses through the medium of written directions sent by mail. Many persons in business and other callings are eagerly seizing the opportunities offered by the Extension Division to increase their capacity for effective work and advancement.

TABLE IV. EXTENSION STUDENTS, 1919-1921

COURSE	YEAR 1919-20			YEAR 1920-21			GAIN	Loss
	Men	Women	Total	Men	Women	Total		
General.....	2526	2103	4629	2414	2324	4738	109	.....
Correspondence.....	451	301	752	446	282	728		24
Total.....	2977	2404	5381	2860	2606	5466	85	.....
Less duplicates.....	16	34	50	9	11	20		30
Net total.....	2961	2370	5331	2851	2595	5446	115	.....

Summary.—Table V summarizes Tables I, III, and IV under the headings: collegiate, subcollegiate, and extension students. The figure of 17,538 actually registers the number of men and women who during the past year received instruction at the hands of members of the University teaching staff. It is by far the largest enrolment in the history of the institution.

Table VI is another summary giving the registration by departments. Agriculture in this table includes college, school, and short courses. By resident student is meant those who were in day classes in the University buildings as differentiated from those who attended evening classes in the Twin Cities or who took work by correspondence.

TABLE V. SUMMARY 1919-1921

DIVISION	YEAR 1919-20			YEAR 1920-21			GAIN	Loss
	Men	Women	Total	Men	Women	Total		
Collegiate students.....	5889	3138	9027	6375	3479	9854	827	.....
Subcollegiate students....	1997	1172	3169	1639	796	2435	.....	734
Total	7886	4310	12196	8014	4275	12289	93	.....
Less duplicates.....	12	4	16	15	1	16	.....	.....
Net total.....	7874	4306	12180	7983	4271	12273	93	.....
Extension students.....	2961	2370	5331	2851	2595	5446	115	.....
Grand total.....	10853	6676	17511	10834	6866	17719	208	.....
Less duplicates.....	80	105	185	119	62	181	.....	4
Net grand total.....	10755	6571	17326	10715	6804	17538	212	.....

TABLE VI. COMPARATIVE REGISTRATION FIGURES, 1919-1921

COLLEGE OR SCHOOL	YEAR 1919-20			YEAR 1920-21			GAIN		Loss	
	Men	Women	Total	Men	Women	Total	Men	Women	Men	Women
Science, Literature, and the Arts....	2111	1635	3746	2262	1701	3963	151	66	....	.....
Engineering and Architecture ...	1199	14	1213	1073	11	1084	.....	.....	126	3
Agriculture	2299	1402	3701	2051	1100	3151	.....	.....	248	302
Law	259	8	267	257	7	264	.....	.....	2	1
*Medical (including Nursing)....	396	179	575	376	152	528	.....	.....	20	27
Dentistry (including Dental Hygienists)	389	11	400	391	17	408	2	6	.....	.....
Mines	158	.....	158	165	.....	165	7	.....	.....	.....
Pharmacy	86	31	117	86	29	115	.....	.....	2	.....
Chemistry	168	8	176	128	13	141	.....	5	40	.....
Education (including University High School)...	202	519	721	189	625	814	.....	106	13	.....
Graduate	422	135	557	550	139	689	128	4	.....	.....
Business	74	14	88	108	20	128	34	6	.....	.....
War specials.....	22	.....	22	100	5	105	88	.....	.....	5
Summer Session, Mpls. campus (net)	259	420	679	403	532	935	144	112	.....	.....
Total	8044	4376	12420	8139	4351	12490	103	.....	.....	33
Less duplicates....	170	70	240	136	81	217	.....	11	34	.....
Net total.....	7874	4306	12180	8003	4270	12273	93	.....	.....	.....

TABLE VI—Continued

COLLEGE OR SCHOOL	YEAR 1919-20			YEAR 1920-21			GAIN		LOSS	
	Men	Women	Total	Men	Women	Total	Men	Women	Men	Women
Extension:										
General	2526	2103	4629	2414	2324	4738	....	221	112	.....
Correspondence .	451	301	752	446	282	728	....	....	95	19
Total	2977	2404	5381	2860	2606	5466	....	202	117	.....
Less duplicates....	16	34	50	9	11	20	....	....	7	23
Net total....	2961	2370	5331	2851	2595	5446	....	115	....	.....
SUMMARY:										
Total, resident students	7874	4306	12180	8003	4270	12273	129	.....	....	36
Total, extension students	2961	2370	5331	2851	2595	5446	....	225	110	.....
Grand total...	10835	6676	17511	10854	6865	17719	19	189	....	.....
Less duplicates....	80	105	185	119	62	181	39	....	....	43
Net grand total	10755	6571	17326	10735	6803	17538	....	212	....	.....

* In 1919-20 Embalming was given under the Medical School, is now given under the Extension Division.

Degrees conferred.—Table VII registers what might be called the University's "output" or "finished product." No marked changes in distribution appear.

Attention, however, is called to the fact that the degrees of Civil Engineer, Electrical Engineer, Mechanical Engineer, and Chemical Engineer, have been transferred by mutual agreement from the College of Engineering and the School of Chemistry to the Graduate School.

During the year 1920-21 for the first time commencement exercises were held at the close of the fall quarter, at which time eighty-two degrees, graduate and undergraduate, were conferred.

TABLE VII. DEGREES CONFERRED, 1919-1921

COLLEGES AND DEGREES	YEAR 1919-20†			YEAR 1920-21*		
	Men	Women	Total	Men	Women	Total
SCIENCE, LITERATURE, AND THE ARTS:						
B.A.	83	146	229	74	125	199
B. A. in Music .....	....	5	5	....	13	13
B.S. (Academic-Medical)	42	1	43	67	3	70
B.S. ....	....	....	....	....	2	2
ENGINEERING AND ARCHITECTURE:						
C.E.	1	....	1	....	....	....
†E.E. ....	....	....	....	....	....	....
†Mechanical	4	....	4	....	....	....
B.S. in Civil Engineering .....	....	....	4	....	....	19
B.S. in Electrical Engineering .....	....	....	....	28	....	28
B.S. in Mechanical Engineering .....	....	....	....	14	....	14
B.S. in Engineering	78	....	78	16	....	16
B.S. in Architecture	5	....	5	9	....	9
AGRICULTURE:						
B.A. (Agriculture)	48	....	48	55	....	55
B.S. (Forestry)	5	....	5	9	....	9
B.S. (Home Economics) .....	....	50	50	....	51	51

TABLE VII—Continued

COLLEGES AND DEGREES	YEAR 1919-1920†			YEAR 1920-1921*		
	Men	Women	Total	Men	Women	Total
LAW:						
LL.B.	46	2	48	43	.....	43
MEDICINE:						
M.D.	55	.....	55	50	4	54
M.B.	54	5	59	75	3	78
Graduate in Nursing.....	.....	17	17	.....	19	19
DENTISTRY:						
D.D.S.	60	1	61	79	2	81
MINES:						
E.M.	13	.....	13	7	.....	7
E.M. in Geology.....	2	.....	2	4	.....	4
Met.E. ....	.....	.....	.....	5	.....	5
PHARMACY:						
D.S. in Pharmacy.....	.....	.....	.....	.....	.....	.....
B.S. in Pharmacy.....	.....	1	1	1	1	2
Phm.C.	8	8	16	5	6	11
G.Phm.	3	.....	3	.....	.....	.....
CHEMISTRY:						
Chem. Eng.	3	.....	3	.....	.....	.....
B.S. in Chem.	14	.....	14	8	.....	8
B.S. in Chem. Eng.	4	.....	4	9	.....	9
EDUCATION:						
B.A. in Education.....	11	32	43	2	.....	2
B.S. in Education.....	.....	.....	.....	4	5	9
B.S. ....	.....	.....	.....	13	94	107
BUSINESS:						
B.S. in Business.....	14	.....	14	11	8	19
GRADUATE:						
M.A.	18	17	35	15	17	32
M.S.	17	5	22	21	5	26
M.S. in Medicine.....	1	.....	1	1	.....	1
M.S. in Neurology.....	.....	.....	.....	.....	.....	.....
M.S. in Obstetrics and Gynecology	1	.....	1	.....	.....	.....
M.S. in Ophthalmology.....	1	.....	1	1	.....	1
M.S. in Oto-Laryngology.....	1	.....	1	1	.....	1
M.S. in Pediatrics.....	.....	.....	.....	.....	.....	.....
M.S. in Surgery.....	4	.....	4	6	.....	6
M.S. in Experimental Surgery.....	.....	.....	.....	.....	.....	.....
M.S. in Physiologic Chemistry.....	.....	.....	.....	1	.....	1
Ph.D.	5	1	6	10	2	12
Ph.D. in Surgery.....	1	.....	1	.....	.....	.....
Ph.D. in Obstetrics and Gynecology	.....	.....	.....	1	.....	1
Ph.D. in Nervous and Mental Dis-	.....	.....	.....	.....	.....	.....
eases.....	.....	.....	.....	2	.....	2
Ph.D. in Pediatrics.....	.....	.....	.....	1	.....	1
Chemical Engineers.....	.....	.....	.....	12	.....	12
Electrical Engineers.....	.....	.....	.....	1	.....	1
Mechanical Engineers.....	.....	.....	.....	7	.....	7
Totals	602	291	893	687	300	1047

* Degrees conferred from July 1, 1920 to June 30, 1921.

† Degrees conferred June 17, 1920.

‡ Transferred to Graduate School, 1920-1921.

Geographical distribution.—Table VIII enumerates the preparatory schools from which *freshman* students from the various colleges and schools were received during the year 1920-21 and shows the number from each school. No changes of importance are noted. Attention is called to the fact that over 81 per cent of the entrants are from Minnesota schools, and 53.1 per cent come from schools outside of the Twin Cities. Thirty-one states are

TABLE VIII—Continued

	Science, Literature, and the Arts	Agriculture	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nursing	Education	Total
New London.....		1								1
New Prague.....		1								1
New Richland.....	1									1
New Ulm.....	6	2	1					2		11
New York Mills.....										
Nicollet.....	2									2
North Branch.....					1					1
North St. Paul.....			1						1	2
Northfield.....	1									1
Norwood.....		2								2
Young America.....										
Ogilvie.....										
Okabena.....										
Olivia.....										
Ortonville.....	1									1
Osakis.....										
Owatonna.....	4	4	2				1			11
Parkers Prairie.....										
Park Rapids.....	3									3
Paynesville.....	1									1
Pelican Rapids.....	1		1							2
Pequot.....										
Perham.....	2									2
Pillager.....										
Pine City.....				1						1
Pine Island.....										
Pine River.....	1									1
Pipestone.....		1								1
Plainview.....		1								1
Preston.....	1									1
Princeton.....	2									2
Proctor.....										
Randolph.....		1								1
Raymond.....										
Red Lake Falls.....			1							1
Red Lodge.....			1							1
Red Wing.....	3		2							5
Redwood Falls.....	1									1
Remer.....										
Renville.....	1		1							2
Rochester.....	1	1								2
Rockford.....										
Roseau.....	1		1							2
Round Lake.....										
Royalton.....			1							1
Rushford.....										
Rush City.....	1									1
St. Charles.....										
St. Cloud.....	4				1			1		6
St. Francis.....	1									1
St. James.....	2									2
St. Louis Park.....	2	1	1							4
St. Paul										
Central.....	75	10	10		1		1	1	1	99
Humboldt.....	9	2	1							13
John A. Johnson.....	8		4					1		13
Mechanic Arts.....	20	4	9	1	1		2			37
St. Paul Park.....	1									1
St. Peter.....	1									1
Sacred Heart.....	1									1
Sanborn.....	1	1			1					3
Sandstone.....	1		1							2
Sauk Center.....	1								1	6
Sauk Rapids.....	1		1							2
Sebeka.....										
Shakopee.....	1		1							2

TABLE VIII—Continued

	Science, Literature, and the Arts	Agriculture	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nursing	Education	Total
Sherburne	4				1					5
Silver Lake	1									1
Slayton	2									2
Sleepy Eye	1	1	1							3
South St. Paul	1									1
Spooner	1									1
Spring Grove	6		1					1		8
Spring Valley	3	3	1							7
Springfield	1									1
Staples	1									1
Starbuck	3	1								4
Stephen	3									3
Stewart	1	1								2
Stewartville	11	1	1							13
Stillwater	1									1
Taylor Falls	1		1		1					3
Thief River Falls	1									1
Tower	1									1
Tracy	1									1
Truman	1									1
Twin Valley	1									1
Two Harbors	7									7
Tyler	1		1							2
Ulen	1									1
Villard	1									1
Virginia	1	2	2	1				1		7
Wabasha	1	1								2
Wabasso	1									1
Waconia	1									1
Wadena	4			1						5
Wahkon	1									1
Waldorf	1									1
Walker	1									1
Walnut Grove	1									1
Warren	1									1
Warroad	1									1
Waseca	1	1								2
Watertown	1									1
Waterville	1									1
Waverly	1		1							2
Wayzata	7	1	1					1		10
Welcome	1									1
Wells	3									3
Westbrook	1									1
West Concord	1									1
Wheaton	2			1				1		4
White Bear	2			1						3
Willmar	1			1						2
Windom	3		1							4
Winnebago	1		2							3
Winona	2		1	1						4
Winthrop	1		1				1			3
Worthington	5	1	1							7
Wykoff	1									1
Young America	1									1
Zumbrota	1		1							2
Total	939	127	235	30	26		32	21	24	1434
OTHER SECONDARY SCHOOLS:										
Collegeville										
St. John's College			1							1
Duluth										
Cathedral High School for Boys	4				1					5

TABLE VIII—Continued

	Science, Literature, and the Arts	Agriculture	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nursing	Education	Total
Cathedral High School for Girls.....										
Villa Sancta Scholastica										
Faribault										
Bethlehem Academy										
St. Mary's Hall.....	1									1
Shattuck Mil. Acad.	4				1					5
State School for Blind	1									1
Fergus Falls										
Park Region Luth. Col.										
Frontenac										
Villa Maria.....										
Graceville										
St. Mary's Acad....	1									1
Hutchinson										
Hutchinson's Theol. Sem.										
Maple Plain										
Maplewood Acad....										
Minneapolis										
Blake School for Boys	2									2
Northrop Col.....	3									3
Minnelaha Acad....	3		1							6
Minnesota Col.....	5		1						1	8
St. Margaret's Acad.	6									6
Stanley Hall.....	4									4
Montevideo										
Windom Institute..										
Moorhead										
Concordia College..										
Owatonna										
Pillsbury Academy.										
Red Wing										
Acad. of the Red Wing Sem.....										
Luth. Ladies' Sem.										
St. Cloud										
Cathedral High School	2									2
St. Joseph										
Convent of St. Benedict.....	3									3
St. Paul										
Bethel Acad.....										
College of St. Catherine.....	3									3
Cretin High School	3	1	2	2						8
Oak Hall.....	5									5
St. Joseph's Academy	2							1		3
St. Paul Academy..										
St. Thomas College	9		4	1	1		1			16
Summit School.....	2									2
Visitation Convent.	4									4
Total	69	1	9	3	3		1		2	88
BY EXAMINATION:										
State Board Exams..	5									5
Entrance Examinations	3									3
Total	8									8
Total for Minnesota	1013	128	245	33	29		33	21	26	1530

TABLE VIII—Continued

	Science, Literature, and the Arts	Agriculture	Engineering	Chemistry	Mines	Dentistry	Pharmacy	Nursing	Education	Total
De Pere.....	1									1
Eau Claire.....	3			1						4
Ellsworth.....	1	1								2
Ft. Atkinson.....	1									1
Frederick.....	1									1
Grand Rapids.....	1									1
Hammond.....	1									1
Hudson.....	1									1
Independence.....	1									1
Kenosha.....	1									1
La Crosse.....	1	1	2							4
Lake Geneva.....	1									1
Lake Mills.....	1									1
Lancaster.....	1									1
Madison.....			1							1
Maiden Rock.....	1									1
Milwaukee										
Milwaukee Downer										
College.....									1	1
West Division										
H. S.....					1					1
Nelson.....	1									1
New Richmond.....	1		1							2
Oshkosh.....	1									1
Ripon										
Ripon College.....			1							1
Spencer.....	1						1			2
Spooner.....			1							1
Spring Valley.....	1									1
St. Croix Falls.....	2	1								3
Stevens Point.....	2									2
Superior.....	3				1					4
West Salem.....			2							2
Wyoming										
Buffalo.....	1									1
Cheyenne.....	1		1							2
Total for U. S. ex- cept Minn.....	238	18	56	9	5		4	3	6	339
FOREIGN COUNTRIES:										
Canada.....	3		2							5
China.....					2					2
England.....	1									1
Holland.....		2								2
Norway.....			1							1
Philippine Islands.....		1	1	1						3
Sweden.....			2							2
Total.....	4	3	6	1	2					16

SUMMARY

Iowa.....	80	Nebraska.....	5	Idaho.....	1
North Dakota.....	63	California.....	3	Kansas.....	1
Wisconsin.....	54	Massachusetts.....	3	Maine.....	1
South Dakota.....	48	Pennsylvania.....	3	Ohio.....	1
Montana.....	25	Wyoming.....	3	Oklahoma.....	1
Missouri.....	8	Kentucky.....	2	Oregon.....	1
Washington.....	8	Washington.....	2	Tennessee.....	1
Illinois.....	7	Colorado.....	1	Virginia.....	1
Michigan.....	6	Connecticut.....	1	West Virginia.....	1
Indiana.....	5	Florida.....	1		
Total number of entrants for Minnesota.....					1530
Total number for the United States outside Minnesota.....					339
Total number for foreign countries.....					16
Grand total.....					1885

Advanced standing.—Table IX shows the extent of the migration of students from other colleges and universities to Minnesota. During the past year 656 students have come from 173 different institutions. It is, of course, impossible to estimate the reciprocal number, i.e., students who have left Minnesota to attend other institutions. The work of evaluating the credentials of advanced standing students is difficult and exacting and requires the care of a thoro and highly efficient examiner.

TABLE IX. STUDENTS ADMITTED WITH ADVANCED STANDING, 1920-1921

	Science, Literature, and the Arts	Engineering	Agriculture	Law	Medical	Nursing	Dentistry	Mines	Pharmacy	Chemistry	Education	Business	Total
MINNESOTA:													
Albert Lea College.....			1										1
Augsburg Seminary.....	4												4
Bethel Academy.....		1											1
Carleton College.....	25	5	2	4	2	2					4		44
College of St. Catherine.....	10		1								1		12
College of St. Thomas.....	19			4	4		2		1				30
Concordia College.....	1												1
Convent of St. Benedict.....													
Eveleth Junior College.....	1		1	2									4
Gustavus Adolphus College.....	8			2	1						1		12
Hamline University.....	33	2	7	5	4		3			1	7	2	64
Hibbing Junior College.....	5	1									1		7
Macalester College.....	23	3	3	4	3				1		1		38
Mankato Normal.....			1										1
Minnesota College.....													
Pipestone Junior College.....	5	1	1										7
Red Wing Seminary.....	1						1						2
Stanley College.....	1												1
St. John's University.....	1	1	1										3
St. Joseph Academy.....													
St. Mary's Hall.....	4				1								4
St. Olaf College.....	5	2	1	5	1							2	16
St. Paul College of Law.....				1									1
State Normal School (Duluth).....											3		3
State Normal School (Mankato).....							1				7		8
State Normal School (Moorhead).....							1				3		4
State Normal School (St. Cloud).....	1		1								5	1	8
State Normal School (Winona).....	9	1	4								8		22
Windom Institute.....			1										1
Total	156	15	26	27	16	2	8		2	1	41	5	299
UNITED STATES:													
Anna Wright Seminary.....			1										1
Augustana College.....	1				1								2
Beloit College.....	1												1
Brown University.....	1				1								2
Buena Vista College.....	1												1
University of California.....	2		1					1					4
Calvin College.....	1												1
Campion College.....							1						1
Carroll College.....											1		1
Chicago, University of.....	3										1		4
Coe College.....	2		2	1							1		6

TABLE IX—Continued

	Science, Literature, and the Arts	Engineering	Agriculture	Law	Medical	Nursing	Dentistry	Mines	Pharmacy	Chemistry	Education	Business	Total
Muncie Indiana Normal.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
National Park Seminary (Wash- ington D.C.).....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Nebraska, University of.....	6	1	1	.....	1	.....	.....	.....	.....	.....	1	.....	10
New Mexico Agricultural Col..	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
North Dakota Agricultural Col..	3	3	4	.....	.....	.....	.....	.....	.....	.....	.....	2	13
North Dakota, University of....	14	.....	2	4	1	1	2	.....	.....	.....	1	.....	25
Northern Normal and Industrial School.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	2	.....	3
Northland College.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Northwestern College (Ill.)....	3	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
Northwestern University.....	6	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	8
Norwich University (Vt.).....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Notre Dame, University of.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Oak Grove Lutheran Sem. (N.D.).....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Oberlin College.....	2	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	3
Ohio, University of.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Ohio Wesleyan University.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Oklahoma College of Agri. and Mechanics.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Oklahoma, University of.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Oregon, University of.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	.....	2
Otterbein College (Ohio).....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Parke Region Luther College (Minn.).....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
Parsons College (Iowa).....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Pennsylvania State College.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	2
Pennsylvania, University of....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
Pittsburgh, University of.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Princeton University.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	2
Principia College (Mo.).....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
Ripon College.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Rockford College (Ill.).....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
St. Benedict's College.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
St. Charles College.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
St. Clara College.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
St. John's University.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	2
St. Lawrence College.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
St. Louis University.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
St. Mary's Academy (N.J.).....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
San Diego College (Calif.).....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Simmons College (Mass.).....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Simpson College (Iowa).....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	2
Sioux Falls College.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
South Dakota State College....	.....	1	2	.....	1	.....	.....	.....	.....	.....	.....	.....	4
South Dakota, University of....	3	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	5
Southern California, Univ. of..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
State Normal School (Ill.).....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
State Normal School (Ellendale, N.D.).....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
State Normal School (Valley City, N.D.).....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	2
State Normal School (Madison, S.D.).....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
State Normal School (La Crosse, Wis.).....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
State Normal School (Milwau- kee, Wis.).....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
State Normal School (River Falls, Wis.).....	3	1	1	1	.....	.....	.....	.....	.....	.....	1	.....	7
State Normal School (Stevens Point, Wis.).....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
State Normal School (Superior, Wis.).....	5	.....	.....	.....	.....	.....	1	.....	1	.....	5	.....	12

TABLE IX—Continued

	Science, Literature, and the Arts	Engineering	Agriculture	Law	Medical	Nursing	Dentistry	Mines	Pharmacy	Chemistry	Education	Business	Total
Stephens College (Mo.).....	1												1
Stout Institute.....			6										6
Sweet Briar College.....	1												1
Syracuse University.....	1		1						1				2
Thomas Normal Training School			1										1
Tufts College.....	1		1										2
United States Mil. Acad.....	2												2
Union College (College View, Neb.).....			1										1
Urbana University.....	1												1
Valparaiso University.....	2		1										3
Vassar College.....	1										1		2
Washington, University of.....	3				3					1			7
Whitman College (Wash.).....					1								1
Wellesley College.....	1												1
Wells College.....	10												10
Wisconsin, University of.....	12	1	1	2							3		19
Totals.....	216	21	46	17	15	1	15	2	4	1	40	5	383
FOREIGN COUNTRIES:													
Alberta, University of (Canada)	1												1
Bombay, University of (India)	1												1
Christiania, University of (Nor- way).....					1								1
Copenhagen, University of (Den- mark).....			1										1
Hawaii, University of.....	1												1
Het Nederlanch Lyceum (Hol- land).....			1										1
Otaru Middle School (Japan)..	1		1										2
Saskatchewan, Dept. of Educ. (Canada).....	1												1
School of Theology of St. Sab- bas (Belgrade, Serbia).....			1										1
Totals.....	5		4		1								10
Grand totals.....	377	36	76	44	32	2	23	2	6	2	81	10	692
Repetitions.....	19			4	2						11		37
Net grand totals.....	358	36	76	40	29	2	23	2	6	2	70	9	655

Table X shows the geographic origin of the entire group of students of collegiate grade, not counting the Summer Session, (a) by counties, (b) by states, (c) by foreign countries. This table includes the figures of Table VIII. Only one county of the state is not represented this year. Hennepin and Ramsey counties furnished 54.6 per cent of the students. Forty-five states sent students this year as compared with 44 last year. As expected, the great majority came from adjacent states. The first five in the following order are North Dakota, Iowa, Wisconsin, South Dakota, and Montana. Last year the order was North Dakota, South Dakota, Iowa, Wisconsin, and Montana. Note that 1,138 students came from states outside of Minnesota. Ninety-nine students came from 28 foreign countries, counting the Philippines and Porto Rico in this group.

STATISTICS OF REGISTRATION

TABLE X. GEOGRAPHICAL DISTRIBUTION OF UNIVERSITY STUDENTS OF COLLEGIATE GRADE (OTHER THAN SUMMER SESSION), 1920-1921

COUNTIES:	Science, Literature, and the Arts	Engineering	Agriculture	Law	Medical	Nursing	Dentistry	Mines	Pharmacy	Chemistry	Education	Graduate	Business	War Specials	Total
Aitkin	2	1	3	1	...	...	...	2	...	...	...	2	...	...	10
Anoka	9	1	3	...	...	...	...	...	1	...	...	1	...	...	17
Becker	12	4	6	2	...	...	1	1	...	...	...	1	...	...	30
Beltrami	11	5	1	...	2	...	2	...	...	1	...	...	...	1	23
Benton	1	1	1	...	1	...	...	...	...	...	...	1	...	...	5
Bigstone	7	2	4	1	...	1	...	...	...	...	1	1	1	...	18
Blue Earth	30	12	12	2	3	...	5	...	...	3	7	2	...	...	76
Brown	14	4	8	2	5	2	...	...	...	...	...	...	...	...	38
Carlton	10	4	3	2	...	1	1	...	...	...	2	1	1	1	26
Carver	5	3	3	...	1	...	2	...	...	...	1	1	...	...	16
Cass	3	1	...	...	...	...	...	...	...	...	...	...	1	...	5
Chippewa	6	7	5	...	2	1	...	1	...	...	...	...	...	...	23
Chisago	9	4	1	1	6	...	2	...	1	...	3	...	...	...	27
Clay	12	1	4	...	1	1	4	1	...	...	2	2	...	...	28
Clearwater	2	...	1	...	...	...	...	...	...	...	...	...	...	...	3
Cook	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cottonwood	9	6	8	1	...	...	...	...	...	...	1	2	...	...	27
Crow Wing	19	13	3	1	...	2	3	5	1	1	1	...	...	...	49
Dakota	9	4	1	1	2	1	1	1	...	...	2	2	...	1	25
Dodge	6	2	5	...	...	2	4	...	1	1	2	...	...	...	23
Douglas	9	6	8	3	...	1	2	1	...	...	5	2	1	...	37
Faribault	13	3	3	1	4	2	2	...	...	...	6	2	1	...	37
Fillmore	33	8	12	2	1	1	2	2	...	...	6	2	...	1	71
Freeborn	23	9	4	2	...	1	1	...	1	1	1	...	1	...	43
Goodhue	32	11	10	2	4	1	4	...	3	2	2	3	3	1	78
Grant	18	1	3	...	2	...	2	...	1	1	...	1	...	...	29
Hennepin	1714	380	237	122	180	23	141	70	44	55	272	226	60	38	3562
Houston	13	3	...	...	...	1	1	...	...	...	...	1	1	...	27
Hubbard	9	...	3	...	...	...	3	...	3	...	2	1	1	...	16
Isanti	4	4	...	...	1	1	1	1	...	...	...	...	...	...	12
Itasca	19	7	4	...	1	...	2	1	2	1	...	...	1	1	39
Jackson	10	3	10	1	1	...	2	...	...	1	...	2	...	...	30
Kanabec	3	...	11	1	...	...	...	...	...	...	...	1	...	...	17
Kandiyohi	12	9	2	2	1	...	5	...	2	3	4	...	...	...	40
Kittson	2	1	...	...	...	...	2	...	...	...	...	...	...	...	5
Koochiching	1	1	5	2	...	1	...	...	1	...	...	1	...	...	12
Lac Qui Parle	5	5	5	2	3	...	...	...	2	...	...	1	...	...	23
Lake	13	2	...	3	1	...	1	1	1	...	...	1	1	...	24
LeSueur	9	5	5	...	2	1	5	...	...	...	...	...	...	...	27
Lincoln	18	6	7	1	...	...	1	...	1	...	1	...	...	...	22
Lyon	5	4	4	2	...	...	2	2	1	1	1	2	1	...	38
McLeod	19	6	14	2	3	3	7	2	...	1	2	1	...	...	60
Mahnomen	3	1	...	...	2	1	...	...	...	...	2	...	...	...	9
Marshall	8	2	3	...	1	...	1	...	...	...	2	...	1	1	19
Martin	13	6	2	2	1	...	...	1	...	1	...	1	...	...	27
Meeker	15	2	4	...	2	...	2	1	1	...	4	2	...	...	33
Mille Lacs	9	2	...	1	...	2	1	...	...	...	...	...	...	...	15
Morrison	14	3	5	...	1	...	2	2	2	1	3	1	...	...	34
Mower	14	12	7	2	1	1	5	...	...	...	...	3	...	1	46
Murray	7	2	1	...	1	...	...	...	...	...	...	...	1	1	13
Nicollet	4	2	2	1	3	...	...	...	...	...	2	...	...	...	15
Nobles	15	2	6	...	...	...	1	...	...	1	1	...	...	...	26
Norman	9	2	2	...	...	1	...	...	...	1	2	...	2	...	19
Olmsted	16	4	9	2	6	...	5	...	...	...	2	37	1	...	82
Otter Tail	13	4	9	6	2	2	6	1	2	...	5	...	1	...	51
Pennington	5	...	2	...	...	...	1	...	...	...	1	...	...	...	9
Pine	6	1	4	2	...	1	1	...	1	1	...	...	...	...	17
Pipestone	8	4	5	1	...	...	2	1	...	...	...	...	...	...	21
Polk	10	4	7	2	...	...	2	1	...	1	1	3	...	...	29
Pope	9	2	4	1	...	2	1	1	...	...	1	...	...	...	22
Ramsey	511	147	134	28	57	8	43	19	10	22	93	105	18	11	1206
Red Lake	...	1	1	...	...	...	...	1	...	...	...	...	...	...	3
Redwood	15	4	4	3	2	...	...	1	...	...	7	...	1	...	37

THE PRESIDENT'S REPORT

TABLE X—Continued

	Science, Literature, and the Arts	Engineering	Agriculture	Law	Medical	Nursing	Dentistry	Mines	Pharmacy	Chemistry	Education	Graduate	Business	War Specials	Total
Renville	20	6	7	4	1	1	2	...	3	2	1	...	...	...	47
Rice	11	4	11	2	5	2	1	1	1	1	3	3	...	1	46
Rock	10	1	3	...	1	...	...	1	...	...	...	...	...	...	19
Roseau	4	1	...	...	...	...	1	...	...	...	...	...	...	...	7
St. Louis.....	130	65	25	9	5	4	24	17	1	7	22	5	4	4	320
Scott	10	3	1	2	...	...	2	...	...	...	...	1	...	...	19
Sherburne	7	1	5	...	...	...	...	...	...	...	...	1	...	1	15
Sibley	6	5	7	1	...	...	2	...	1	...	1	1	...	...	24
Stearns	27	10	8	5	3	6	12	...	1	...	7	2	1	1	83
Steele	15	6	6	...	...	...	2	...	5	...	1	...	1	...	36
Stevens	4	3	1	...	...	1	...	...	...	...	1	...	...	...	10
Swift	16	1	3	1	1	...	1	...	...	...	...	...	1	...	24
Todd	12	4	3	...	2	1	2	...	2	1	...	2	...	...	20
Traverse	8	5	6	...	...	1	2	1	...	2	...	2	1	...	28
Wabasha	13	2	8	2	1	...	2	1	1	1	3	1	...	...	35
Wadena	10	1	7	...	...	...	2	...	1	1	1	...	...	...	22
Waseca	8	4	3	...	1	...	1	...	1	1	...	1	1	...	21
Washington	35	10	13	1	1	1	3	...	...	4	2	1	1	1	72
Watonwan	13	2	16	1	2	1	3	...	1	...	2	1	...	...	42
Wilkin	4	1	...	...	1	...	2	...	...	...	...	...	...	...	8
Winona	25	5	4	1	3	...	2	2	1	3	1	5	1	2	55
Wright	23	8	7	...	...	...	8	...	2	1	6	...	...	1	56
Yellow Medicine..	11	5	6	1	1	1	...	...	1	...	1	...	...	...	27
Totals	3286	909	782	243	332	84	361	141	103	121	513	442	110	69	7496
UNITED STATES:															
Alabama	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1
Arizona .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Arkansas .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
California	4	2	1	...	2	1	...	...	...	1	1	6	...	...	18
Colorado	2	1	...	...	...	...	...	...	...	...	...	1	...	...	4
Connecticut .....	...	...	1	...	...	...	...	...	...	...	...	2	...	...	3
District of Columbia	...	...	1	...	1	...	...	...	...	...	...	9	...	...	11
Florida .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Georgia	1	...	...	...	...	...	...	...	...	...	1	2	...	...	4
Idaho	1	...	...	...	...	1	...	...	...	...	...	...	...	...	2
Illinois	8	3	8	...	3	...	...	...	1	...	2	21	...	...	46
Indiana	3	1	1	...	...	...	...	...	...	...	...	11	...	...	16
Iowa	127	23	15	4	4	3	5	1	...	2	12	10	2	...	208
Kansas	2	...	1	...	...	...	...	...	...	...	...	3	1	2	11
Kentucky	1	...	3	...	...	...	...	...	...	...	...	2	...	...	6
Louisiana	1	...	...	...	...	...	...	...	...	...	...	1	...	...	2
Maine	1	...	...	...	...	...	...	...	...	...	...	3	...	...	4
Maryland	2	...	...	...	...	...	...	...	...	...	...	3	...	1	6
Massachusetts	3	...	...	...	...	...	...	...	...	...	1	3	1	1	9
Michigan	9	1	2	...	4	2	...	1	...	4	5	...	1	...	29
Mississippi .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Missouri	1	...	1	...	1	1	...	...	...	...	1	6	...	...	11
Montana	28	9	1	2	3	3	2	1	1	2	4	4	1	2	62
Nebraska	6	...	...	...	...	...	...	...	...	...	1	7	...	...	14
Nevada .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
New Hampshire.....	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
New Jersey .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
New York	6	...	...	...	7	...	...	...	...	...	4	11	...	...	28
North Carolina	1	...	1	...	...	...	...	...	...	...	...	3	...	...	5
North Dakota.....	108	21	16	4	5	8	19	3	1	3	7	6	5	4	210
Ohio	1	...	1	...	4	...	...	...	...	...	1	8	...	...	15
Oklahoma	3	...	...	...	1	...	...	...	...	...	...	...	...	...	4
Oregon .....	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
Pennsylvania	8	1	...	...	2	...	...	...	...	1	...	13	...	...	25
Rhode Island .....	...	...	...	...	...	...	...	...	...	...	1	1	...	...	11
South Carolina .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
South Dakota.....	84	20	9	2	6	3	5	1	4	...	9	7	1	2	153
Tennessee	1	...	...	...	...	...	...	...	...	...	...	2	...	...	3
Texas	2	...	...	1	...	...	...	...	...	...	...	7	...	...	10

TABLE X—Continued

	Science, Literature, and the Arts	Engineering	Agriculture	Law	Medical	Nursing	Dentistry	Mines	Pharmacy	Chemistry	Education	Graduate	Business	War Specials	Total	
Utah .....	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Virginia	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	5
Washington	9	.....	1	.....	6	.....	.....	.....	.....	.....	.....	3	.....	1	.....	23
West Virginia .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	2
Wisconsin	59	19	13	6	6	7	8	6	3	1	19	14	2	3	.....	166
Wyoming	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	4
Totals	487	103	77	19	56	29	42	13	11	12	71	189	12	17	.....	1138
FOREIGN COUNTRIES:																
Africa .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Australia .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Austria Hungary .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Canada	12	4	4	.....	9	.....	1	.....	.....	.....	.....	17	1	.....	.....	48
Cape Colony .....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
China	2	.....	.....	.....	.....	.....	.....	6	.....	1	.....	2	.....	.....	.....	11
Cuba .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Denmark .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Egypt .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
England .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Finland .....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....	.....	2
France .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	2
Holland .....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Honolulu	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
India .....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Ireland .....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Japan	3	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
Mexico .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Newfoundland .....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Norway .....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	3
Philippine Islands	5	2	2	.....	.....	.....	.....	.....	.....	1	.....	2	.....	.....	.....	12
Poland	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Porto Rico .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Russia .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Servia .....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Spain .....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....	2
Sweden .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Syria .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	24	7	8	.....	15	2	3	7	.....	2	.....	30	1	.....	.....	99
Grand totals	3797	1019	867	262	403	115	406	161	114	135	584	661	123	86	.....	8733

FINANCES

The biennial budget.—The requests of the legislature for the biennium 1921-23 were made under practically the same difficulties as those of the emergency request. For many years the number of high school graduates coming to the University has been increasing steadily. But one of the immediate results of the war was to send an abnormally large number of these students to the University. Necessarily that large increase in students placed a heavy burden upon the University finances. Then, too, just when this increased burden came the cost of supplies and materials which the University uses was from 35 per cent to 100 per cent

higher than in normal times. These conditions were not of course peculiar to the University of Minnesota. Other colleges and universities throughout the nation faced the same situation.

Naturally such a state of affairs disturbed the morale of the teaching staff and all other University employees. It became absolutely necessary that the salaries of the teaching staff be increased if the University was to retain its faculty and to deal at all justly with its employees. To meet this situation a request for an increase was made in the last biennium. State universities everywhere followed such a program.

It was also evident that the building program should be pushed forward if we were to take care of the increased student enrolment. The pressure for additional room and for additional equipment has never been more urgent in the history of the University than during the last biennium. Furthermore, the dislocation in industrial and social life of the state and nation accentuated by the war has shifted the emphasis in many fields of education. Whenever the emphasis is shifted in the social, political, and economic life of the people, that shift causes a dislocation in educational institutions. The rapid growth of vocational education, the development of business education, the development of experimental work in applied science are merely indicative of changes going on in the outside world. But whenever these changes are made it requires a purchase of new equipment, the reorganization of old buildings and the construction of new ones—in other words a big building expense. Therefore, when our biennium budget was prepared, it included a request for making available more rapidly the legislative grant for the comprehensive building program authorized by the Legislature of 1919. The grant consisted of an annual appropriation of \$560,000 per year for buildings. Our new request asked that \$1,120,000 per annum be granted instead.

The legislature gave long and careful consideration to the whole University biennium request. The representatives of the University consisting of members of the Board of Regents, the president and the comptroller appeared for several days before the committees on finance in both houses. The legislature faced a most difficult situation in endeavoring to supply the minimum needs of all state institutions and at the same time keep taxes

within a reasonable limit so that agricultural, industrial, and commercial interests of the state could meet the changing economic conditions. The legislature cut down the total request made for the University. On the whole, however, the legislature dealt generously with the institution. The annual appropriation was increased from \$1,865,000 to \$3,000,000. In addition to this the University receives Federal aid, an income from the millage tax, and an income from trust funds and some minor special appropriations. The legislature also authorized the University to proceed with its comprehensive building program under liberal conditions.

With this increased amount of money it became necessary to make up a new University budget. The deans of the several schools and colleges who had submitted their requests for the biennium were asked to revise their budgets according to the appropriation actually received. Among the most important items involved in this revision was that of adjusting the salaries of the University teaching staff. During the period of the war there had been relatively little increase in these salaries. The purchasing power of the salaries of the staff had actually decreased over fifty per cent. The salaries of University professors have always been relatively low, but a few of them had accumulated some property or other savings. And in these few cases some of them had their savings wiped out by the increased cost of living. Such a condition was tragic with the older men on the staff. After weeks of careful consideration and revision a new salary schedule was prepared. While this schedule is below that of Michigan, Wisconsin, and a great many private universities, it compares favorably with most state universities, and it brought needed relief to a number of the most worthy men on our teaching staff. Furthermore, it has enabled the University to retain a strong teaching staff and thereby maintain its high rank among other educational institutions. If the cost of living continues, in the course of time the salaries now paid will have a purchasing value equivalent to the incomes our staff received before the great rise in prices which began in 1915. It should be added that the salary adjustment has greatly improved the morale of the teaching staff and of all employees of the University.

On the whole, the outlook for the University of Minnesota has greatly improved at the close of the fiscal year, 1920-21.

Emergency appropriation.—At the beginning of the present fiscal year the University was in desperate financial straits. In two years the student enrolment had an increase of $66\frac{2}{3}$ per cent, and the cost of everything the University used had risen from 34 per cent to 100 per cent. While the Legislature of 1919 had provided for an increased budget it did not at all meet the ever widening gap of student attendance and abnormally decreased purchasing power of the dollar. With this condition an emergency fund was requested from the legislature to accomplish the following things:

In order to furnish relief, to help departments to reëquip their badly depleted stock, to put the salaries of the staff on a satisfactory basis, and to secure needed additional instruction at once, the regents of the University prepared an emergency request, to be submitted at this session of the legislature. This request, totaling \$1,610,000 was to be distributed as follows:

1. \$265,000 to be made immediately available to provide additional instructors to care for the large numbers of new students.
2. \$845,000 to be made available for increase in the salaries of the present staff during the year 1920-21.
3. \$500,000 to be made immediately available for supplies, thus releasing the present supply funds for expenditure during the first half of the fiscal year.

Of the \$265,000 for additional instructors, \$240,000 has already been spent. Instructors have been employed and are now at work at the University. After the publication of the emergency request, the regents made a thoro analysis of the immediate needs of the University, and they came to the conclusion that \$559,456 was needed for salaries, and \$298,179 for supplies and equipment. Instead of \$1,610,000, they, therefore, requested of the legislature an emergency appropriation of \$1,097,635.

By the time that the legislature assembled in 1921 a reversal of economic conditions throughout the world had come. Prices had begun to decline, industry had slowed down, and an economic depression in agriculture had actually set in. Furthermore, the University was not the only state institution that suffered from the unusual conditions. All of the state institutions were asking the legislature for emergency appropriations. These combined requests were so large that the legislature doubted the financial ability of the state to meet them. Furthermore, they considered the

fact that a decrease in the cost of living had begun, a growing condition which would in itself help to relieve the situation. As a result the legislature eliminated all items in the emergency request that related to an increase in salaries, but granted \$547,000 to cover a deficit sure to come if the University operated the full academic year.

Student fees.—During the academic year of 1919 a complete revision of student fees was made. There remained, however, some supplementary adjustments for students taking less than full-time work. Following the recommendation of the president of the University and the Administrative Committee of the Senate, on April 6, 1921, the Board of Regents voted to approve the following recommendations:

1. New schedule for credit hour fees for students taking less than full-time work:

College	Hour fee	
	Resident	Non-resident
Science, Literature, and the Arts.....	\$1.75	\$2.50
Engineering and Architecture.....	2.50	3.25
Agriculture, Forestry, and Home Economics	1.50	2.25
Law	2.75	3.75
Medicine	2.50	3.00
Dentistry	2.50	3.00
Mines	2.50	3.25
Pharmacy	1.25	1.75
Chemistry	2.50	3.25
Education	1.75	2.50
Graduate	1.00	1.00
Business	2.75	2.75

2. Special fees for courses in physical education for women, beginning with the winter quarter of 1920-21:

- a. \$2.50 per quarter for freshman elementary physical training.
- b. \$2 per quarter for each of the other courses requiring a shower bath fee.
- c. \$3.50 per quarter maximum amount to be paid by students carrying more than one physical training course requiring a shower bath fee.

Student loans.—The industrial depression of the closing fiscal year has shown its effect in the number of requests for student loans. Never in the history of the University have there been so many calls for financial assistance. The following is a brief summary of the extent to which loans have been made:

The University loan funds during the past year made 451 loans, totaling \$39,995.92; the average amount of these loans was \$78.83. Only 20 loans were made in the sum of \$200, the maximum loaned to any one student; 21 loans of an average of approximately \$125; and 103 loans for an even \$100. The remaining 307 loans were for amounts of less than \$100.

Compared with the University year 1919-20, the year's collections on loans exceed those of last year by \$9,800. The various loan funds show a balance of \$2,151.52 on June 30.

BUILDINGS AND GROUNDS

Building program.—The building program has been held back somewhat owing to the high cost of construction. During the year the following additions and buildings were erected:

1. Recitation Hall at Morris substation, has been completed and equipped at a cost of \$85,000. A new chimney worth \$5,000 has been constructed.

2. A four-family cottage was erected at the Crookston substation at a cost of \$16,550. The Dining Hall was completed and equipped at a cost of approximately \$100,000. The paving between the city of Crookston and the substation was completed during the year.

3. On the Agricultural campus the Chemistry and Horticultural buildings were remodeled, the allotment for this purpose being \$99,000.

4. On the main University campus the interne quarters for the Elliot Hospital were constructed at a cost of \$41,000. The addition to the dining hall of Sanford Hall was completed early in the year, costing approximately \$35,000. The work on the addition to the Chemistry Building is nearing completion, the allotment for this purpose being \$397,000.

The University has also acquired some new land during the year. The 32 acres of land were purchased as an addition to the Zumbra Heights Fruit Breeding Farm at a cost of \$14,000. Approximately \$50,000 worth of lots adjoining the present Athletic Field have been purchased by the Athletic Association and conveyed to the University. The University has also purchased what was known as the H. W. Wilson Bookstore Building at a cost of

\$45,000. Negotiations are now under way to acquire the remaining property in the triangle surrounding the present Athletic Field and also to acquire the property in the block where the Wilson Bookstore was located.

UNIVERSITY LIFE

All-University convocations.—Convocation hour, generally held the fourth hour on Thursdays, was, as a rule, this past year, very well attended by the student body. The program for the year brought to the University a number of exceptionally good speakers. Dr. James E. Freeman, formerly rector of St. Mark's Episcopal Church, was the speaker on Armistice Day, November 11. November 17, 18, and 19 were set aside as "Better Minnesota" week. Convocations were held each day. On Wednesday, November 17, President Coffman delivered the address; Mr. W. F. Webster spoke at the morning convocation on November 18; and Dr. Charles Prosser on the afternoon of November 19. A "commencement convocation" for those students who completed their work at the close of the fall quarter was held on December 15, with Dean Charles P. Emerson, of the Medical School, Indiana University, as the principal speaker. "Charter Day," celebrated this past year on February 17, had as its speaker Dr. Ernest H. Lindley, chancellor of the University of Kansas. March 17 was set aside this past year as "Legislature Day" when the legislature visited the University. A special convocation was held in the Armory at 11:30. Brief addresses were given by Lieutenant Governor Louis A. Collins, Honorable W. I. Nolan, and President Coffman. The commencement address was delivered on Wednesday, June 15, by President Harry Pratt Judson, of the University of Chicago. Following is a complete program of the convocations held during the year:

- September 30—All-University Convocation: President Coffman, Professor Ballantine, and Professor Pike
- October 1—"All-Freshman Convocation": President Coffman, Dean Nicholson, and representatives of the various student organizations
- October 14—Charles M. Babcock, state highway commissioner, "Constitutional Amendment No. 1"
- November 4—A. J. Elliott, International Committee of the Y.M.C.A., "Social Forces in University Life That Must Be Made Constructive"
- November 11—"Armistice Day": Dr. James E. Freeman, former rector of St. Mark's Episcopal Church

- November 18—"Better Minnesota Week": W. F. Webster
 December 15—"Commencement Convocation": Dean Charles P. Emerson,
 "The Will To Serve"
 January 20—Bishop William F. McDowell, Methodist Episcopal Church,
 "A Student and His Activities"
 January 27—Dr. Charles Upson Clark, "Adriatic Problems"
 February 3—Charles J. Ewald, "Pan-Americanism through University
 Coöperation"
 February 10—Dr. Samuel McChord Crothers, "The Alleviations of Our
 Responsibilities"
 February 17—"Charter Day": Chancellor Ernest H. Lindley, University
 of Kansas
 March 3—Dr. Hugh Black, "America's International Relations"
 March 10—Bishop Nicholai, Belgrade, Serbia
 March 17—"Legislature Day": Lieutenant Governor Collins, Honorable
 W. I. Nolan, President Coffman
 April 7—Dr. Albert E. Jenks, "Developing Nationalism"
 April 21—President Coffman, "Our Legislative Appropriations"
 May 5—David Hunter Miller, "Great Issues at the Versailles Conference"
 May 12—"Cap and Gown Day": President Coffman
 May 19—Dr. Sherwood Eddy, "The Challenge of the Social and Industrial
 Problem"
 May 26—Dr. P. P. Claxton, United States Commissioner of Education

The University concert course.—The University concert course which was inaugurated a year ago and which proved such a success, was even more of a success this past year. The artists who appeared last year were Fritz Kreisler, violinist; the Flonzaley String Quartet; Benna Moisivitsch, pianist; Birgit Engell, soprano; Jacques Thibaud, violinist; and Harold Bauer, pianist.

GENERAL UNIVERSITY PROGRESS AND INTERESTS

Interim Legislative Committee.—The Legislature of 1921 very wisely provided for an Interim Committee on Education to make a complete survey of the educational activities of the state. The chairman of that committee, Honorable W. I. Nolan, addressed, in the name of the committee, a letter to the University calling for the following data:

1. The several departments, the number of students in each, the teachers therein, the number of subjects taken by the students, the number of students in the several classes, the number of hours spent by the several teachers in actual teaching.
2. The cost of the several departments and courses.

3. The success of the various departments and desirability of continuing, discontinuing, modifying, or enlarging same.
4. The amount of tuition charged and what part of the cost same represents.
5. The sources of income and distribution of same.
6. Needs of the University and departments as to buildings, equipment, etc.

The University is preparing to make a complete survey along the lines requested and in due time will submit its report to the committee. To answer these questions comprehensively will require a great deal of study and analysis, but the results of such a survey will not only supply the legislature with the facts upon which to form an intelligent opinion of the University, its work and its needs, but also will give the regents and the faculty valuable information for the improvement of the administrative and educational policies and activities of the institution.

University Preliminary Survey.—The University authorities have not waited for suggestions from the outside. In the spring of 1920, the Board of Regents appointed a Survey Committee and outlined in general the following problems for the consideration of the committee:

1. What may be considered the growth of the University in the next twenty-five years?
2. What in the nature of extension of grounds, construction of buildings, in the various departments and substations of the institution, will be required to meet the growth?
3. Should the situation be relieved by the adoption of the principles of junior colleges to take over the work of the freshman and sophomore classes in the University?
4. Should agricultural schools such as the schools at Crookston and Morris be multiplied?
5. Should certain technical work now done in the Department of Engineering and in the School of Chemistry, be also taught in the junior colleges and agricultural schools?
6. Are our professional courses too long?
7. May not requirements for higher mathematics and other cultural things be somewhat lessened in preparation for medical degrees?
8. What internal administrative adjustments could be made to improve and increase the amount of instruction?

The Survey Commission began work at once and prepared two reports that have been published—one upon the growth of the University, and the other upon the salary situation within the

University. In addition, two preliminary reports have been filed with the Board of Regents—one on the question of whether or not additional agricultural schools, like those at Morris and Crookston, should be established throughout the state, and the other upon the building situation. A fifth report is now in the possession of the Survey Commission. It is a detailed budget analysis, extending back to the time when the budget system was introduced into the University. It shows exactly how the money has been distributed to the various schools and colleges, and the relative growth of the budgets of the various colleges and schools.

Another report, perhaps even more significant than any of those that have been prepared thus far, is now in the process of completion. It deals with unit costs. This is an attempt to show what it actually costs to educate the students department by department. One who has not engaged in the preparation of such a report has little or no appreciation of the enormous amount of work involved in securing the data, in collating, and in interpreting them. The Survey Commission now has in its possession the following information upon this subject:

- Name of the instructor
- Rank or position
- Salary he is being paid
- Distribution of this salary with reference to—
 - a. Subcollegiate instruction
 - b. Undergraduate instruction
 - c. Graduate teaching
 - d. Research work
 - e. Extension work
 - f. Experimental station work
 - g. Public service work

In addition the commission has the following information for each instructor for each course:

- The actual number of hours in the course
- The number of students completing the course
- The number of students discontinuing the course
- The average hours of attendance of students discontinuing the course
- The hours of teaching, or assisting, of staff members in each course
- The teaching students clock hours for the course

Detailed analysis is also being made of the graduate work done by the various departments. The following information has been secured for each graduate student:

His major and minor subjects

The name of his instructor

The actual number of hours of teaching or direction that the instructor is giving him.

We have now prepared the forms that will enable us to make a study of the extent to which the University plant is being used, from quarter to quarter. This is extremely important, and should have been done years ago. It is one of the important factors that should be taken into consideration in the preparation of any building program of the institution.

The analyses which the administrative authorities of the University are making and the suggestions for internal economies and readjustments that have been made from time to time, are the direct result of the growth of the institution. It is this growth that has induced many to ask the question, Can the states continue indefinitely to support their universities? But universities are not liabilities. They are great social investments. There are no enterprises in which society invests from which the returns are so great as from its universities. Abundant evidence may be found in every state to show that the university has increased the wealth of the state many times the total amount the state has contributed to public education in every form, from the very earliest dates to the present year, and it may reasonably be expected that this will continue to be true.

The junior college movement.—In Minnesota, and in fact throughout the United States, there is developing a movement for the establishment of two-year colleges, commonly called junior colleges. Whether the state of Minnesota will establish a system of junior colleges is a matter of importance to the University and to the whole state. Before any legislation is enacted upon this question, careful consideration should be given not only to the function of the junior college, but also to the effect its development will have upon the rest of the state educational system.

It was with these conditions in mind that the president of the University recently secured a gift from the Commonwealth Fund of the City of New York of \$10,000 to be used by Professor L. V. Koos, of the College of Education, to make a thoro investigation of the junior college movement throughout the United States. This gift was presented at a meeting of the Board of Regents on May 12, 1921. The Board of Regents voted as follows:

The University of Minnesota will accept grants for educational researches from The Commonwealth Fund and will be responsible for their disbursement under the following agreements:

1. Salaries of officers who are relieved of regular duties to engage in researches are to be charged against the research grants at the rate of the salaries paid by the institution to such officers for regular teaching and administration, except in cases where explicit exceptions are arranged in advance.

2. The institution will disburse the grants under the following arrangements: On acceptance of the grant by the institution The Commonwealth Fund shall deposit with the business officer of the institution a sum suitable to launch the investigation, and determine on the basis of the size of the grant; this sum, in the case of large grants, will amount in general to twenty or thirty per cent of the grant. When the initial sum is approaching exhaustion, the business officer of the institution shall request a second deposit and shall render, as soon as possible, a full account of expenditures of the first deposit. In this matter there shall be successive accountings of the grant until the total amount has been used.

In disbursing the funds the institution will assume administrative responsibility for all payments of salaries. It will approve all appointments of assistants. It will make payments on the order of the investigator for supplies and equipment, and traveling expenses, and will render accounts on the latter items showing the approval of the investigator.

At the termination of the grant it is understood that any unexpended balance shall revert to The Commonwealth Fund and that final disposition of such supplies and equipment as are at hand is subject to the order of The Commonwealth Fund. If, at the time of settlement, property of any kind is left at the institution, it is understood that it becomes permanently a gift to the institution.

If the grant is made with specifications as to the amounts which are to be used for salaries, traveling expenses, and supplies, the institution will limit all expenditures to the classes of items specified and will allow transfers from one class to another only on explicit permission of the administrative authorities of the institution, but it is understood that readjustments within a single class of expenditures may depart from the original terms of the budget.

3. The persons responsible for the investigation will be required to file a report on the investigation both with the administrative officers of the institution and with the directors of The Commonwealth Fund at stated intervals.

Arrangements have been made for Professor Koos to visit junior colleges wherever they have been successfully established, and to incorporate his findings in a report. It is hoped that his report will be available by the close of the current school year.

Requests for new schools of agriculture.—From time to time requests are made to the University to establish more schools of

agriculture. During the last year such a request urging the establishment of a school of agriculture at Grand Rapids was received. Upon its receipt a subcommittee of the Survey Committee was asked to make a careful investigation of the need for more of these schools. After a very long and careful analysis of the situation in the state, the subcommittee reported the following conclusion:

“(a) That there is a real need for the maintenance of state-supported schools for secondary vocational education in agriculture and home economics.

(b) That it is the plain duty of those who are interested in this problem to encourage the provision of this education in the secondary schools of the state for pupils of secondary school age and experience, rather than to build up an extensive system of parallel or competing schools under University supervision.

(c) That there ought to be available to young men and women who have passed the usual limits of high school age and experience, or to whom high school education of this type is not available, opportunity to attend special state supported schools of agriculture.

(d) That the three existing schools of agriculture afford such an opportunity at the present time and that their facilities can be expanded to meet this need for at least six years to come more economically than this could be done by establishment of additional schools at other places in the state.

(e) That the need that vocational education shall be given under environmental conditions suitable to encourage the practice of the vocation during and after the completion of the school work may justify the establishment of one, or at most a very few, additional University schools of agriculture at properly chosen localities; but that before this is done there should be a thoroughgoing study of the problems involved, by some agency which can be provided with the necessary funds and technical assistance to carry this study to definite conclusions.”

This report was submitted to the Board of Regents and adopted as a policy for the institution to follow during the next biennium.

General hospital.—The Legislature of 1920 enacted a bill providing for the establishment of a general hospital at the University of Minnesota. The general hospital will consist of the Elliot Hospital and such other units or pavilions as may be added from time

to time. Under the provisions of the legislative act the superintendent of the general hospital will keep an accurate accounting of the cost of the care and treatment of all indigent cases sent to the hospital, and will at stated intervals file a statement of those costs with the state auditor, who, after auditing the accounts and finding them correct, will refund the University the full amount of the costs. The state auditor will once a year assess one-half the costs against the counties from which the patients come. This is a wise provision, not merely because it provides for a fair distribution of the costs, but more especially because it carries the conceptions of health into every community of the state.

Removal of the tracks.—Some thirty-five years ago the Northern Pacific Railroad secured the right of way a few hundred feet to the south of the main campus. The regents of the University protested the location on the ground that it would interfere with the work of the University, but the supreme court of the state denied the injunction of the regents, saying that the tracks were so far away that the work of the University would never be seriously interfered with because of their location. Since then the University has grown in numbers and size. The campus has been enlarged. It now reaches to the Mississippi River on the south. The Northern Pacific tracks pierce its very center. To the south of the tracks are engineering, mines, and medical buildings. The presence of the tracks prevents delicate scientific work. They also make it difficult to locate new buildings and particularly those in which scientific work is to be carried on. They interfere with the material solidarity of the institution.

Negotiations have been carried on for several years for the covering or the removal of the tracks. Permission was granted several years ago to cover the tracks. But the regents realized that this was only compromising with the future, that sooner or later the tracks must come out if the University were to fill its true function. Consequently they sought permission of the last legislature to enter into a contract with the Northern Pacific Railroad for the removal of the tracks. The Legislature of 1909 granted permission to cover the tracks and the Board of Regents and the city of Minneapolis were authorized to enter an agreement with the railroad as to division of the expense of covering the tracks.

The Legislature of 1921 agreed with the regents that the tracks should come out. But this involved the erection of a new bridge across the Mississippi River, the relocation of the tracks, the necessity of the Northern Pacific reaching an agreement with the Minneapolis and St. Louis, the Chicago, Milwaukee, and St. Paul, and the Chicago and Great Western railroads concerning crossings, switchings, and the use of tracks; an agreement with the city of Minneapolis concerning crossings and bridges, the purchase of certain properties involved in the location of the new tracks—the cost of all of which was estimated at \$2,366,974.

The bill giving the regents authority to proceed with the making of such a contract reads as follows:

SEC. 4. Regents may acquire right of way of railroads.—The board of regents of the University of Minnesota is hereby empowered to acquire in the name of the University of Minnesota, and for its purposes, by purchase, or exchange, all the right, title, interest and estate of the Northern Pacific Railway Company, its mortgages, lessees, in the right-of-way of the Northern Pacific Railway Company in the City of Minneapolis, in the County of Hennepin and State of Minnesota, between Oak Street and the Mississippi River, including the south half (S. ½) of Arlington Street, which lands and right-of-way are particularly described as follows, to-wit:—

“That tract of land bounded on the north by the center line of Arlington Street, on the east by Oak Street, on the south by the south line of Lot Four in Block Nine, and on the south line of Lots Four and Seven in each of Blocks Ten, Eleven, Twelve, Thirteen, Fourteen, Fifteen and Sixteen of St. Anthony City; all according to the plat of St. Anthony City, on file and of record in the office of the Register of Deeds of Hennepin County, Minnesota.”

The board of regents is also empowered to acquire in the name of the University of Minnesota, and for its purposes, by purchase, exchange or condemnation, any and all rights, claims, titles, estates and easements of whatever nature or character, of persons or corporations, public or private, other than the Northern Pacific Railway Company, its mortgages and lessees, including among others any contingent rights, titles, estates or interests, and possibilities of reverter, in and to the lands aforesaid, and also the following lands in addition, to wit:

“Lots Nine and Ten in Block Two, Lots Three and Eight, and the easterly half (E½) of Lots One and Two in Block Fourteen, and Lots Eight, Nine and Ten in Block Fifteen of St. Anthony City.” and every such right, title estate and interest, including contingent and reversionary rights, titles, estates and interests and possibilities of reverter, may be conveyed by deed or quit claim to the University of Minnesota.

SEC. 5. May exchange properties.—For the purpose of such acquisition, and as part of the consideration, the board of regents is authorized

to convey to the Northern Pacific Railway Company a right-of-way for railway purposes through the campus of the University, from University Avenue to the Mississippi River, adjoining and adjacent to the present right-of-way of the Great Northern Railway Company, where the latter right-of-way is now located westerly of University Avenue, from a point in University Avenue between Thirteenth Avenue Southeast and Fourteenth Avenue Southeast in the City of Minneapolis.

SEC. 6. May acquire other properties.—The board of regents may acquire separately before or after the acquisition of the title of the Northern Pacific Railway Company, its lessees and mortgagees, any and all rights, claims, titles, estates, interests and easements, of whatever nature or character of either persons or corporations, public or private, including among others, any contingent rights, titles, estates or interests, and possibilities of reverter, in and to every portion of the lands described in Section four (4), and every such right, title, estate, interest and easement, including contingent and reversionary rights, titles, estates and interests, and possibilities of reverter, may be conveyed by deed or quit claim to the University of Minnesota.

SEC. 7. Not to affect title to other property.—This act shall not be construed to the prejudice or impairment of any right, titles, estate or interest in any portion of said lands already acquired, owned or possessed by the University of Minnesota.

SEC. 8. May condemn property—Awards—Judgments.—Proceedings for the condemnation of such lands, or any right, titles, estates, easement or interest therein, may be taken under Chapter 41, General Statutes 1913, and acts amendatory thereof and supplementary thereto. Upon the completion of such condemnation every right, titles, estate and interest and easement of whatever character, whether actual, vested or contingent or reversionary, or possible, shall vest absolutely and in fee simple in the University of Minnesota, unqualified in any way whatsoever. "All persons unknown having or claiming any title or interest" may be joined by that designation and shall be bound by the judgment.

All awards and judgments in such condemnation proceedings, unless set aside by the court, shall be a charge upon the state.

Possession may be taken of any tract at any stage of the proceedings, and the court may issue a writ or writs to put the University of Minnesota in possession thereof. Failure to pay the awards within the time specified in said Chapter 41 shall not defeat the proceedings.

SEC. 9. May contract up to \$750,000 for property. The board of regents may enter into a contract or contracts with the Northern Pacific Railway Company, its mortgagees and Lessees, for the purchase or exchange of said lands, at such price, and upon such terms and conditions as the board of regents may deem best; but the total liability incurred by any such contract or contracts, in addition to the right-of-way conveyed, shall not exceed the sum of Seven Hundred Fifty Thousand Dollars (\$750,000).

It will be observed that the regents are authorized to expend a sum of \$750,000 as their share for the removal of the tracks.

Gifts.—During the past year the University has been the recipient of a number of gifts in the way of prizes, scholarships, fellowships, books, etc. These include:

The Magney and Tussler prize for students in the Department of Architecture.

The Emil S. Geist prize of \$220 for the best piece of original work in anatomy by an undergraduate student.

The Emil S. Geist prize of \$220 for research work in anatomy.

The Epsilon Chapter of Pi Lambda Theta prize of \$50 to students in the College of Education.

The \$750 scholarship from the Minneapolis Steel and Machinery Company.

The \$1,000 scholarship by H. Longstreet Taylor for graduate medical research work in tuberculosis.

The \$750 yearly scholarship for graduate medical research work in tuberculosis by the Hennepin County Tuberculosis Association.

The Elizabeth Carse scholarship of \$50.

The \$400 scholarship in Americanization and home economics from the Women's Committee of the Council of National Defense.

The fourth scholarship of \$150 by the College Woman's Club of Minneapolis.

School of Music scholarship fund from concert course receipts amounting to \$1,228.50.

Frank E. Burch fellowship in ophthalmology and oto-laryngology to be continued for another three-year period.

Gift of \$200 loan fund from the College Woman's Club.

Gift of \$50 by the Pathological Society of the University for pathological research.

Gift of \$200 from Mr. Frank Steiner to the School of Medicine for breast feeding research in the Department of Pediatrics.

Gift of \$250 from the D.A.R. Chapter of Minneapolis for the purchase of equipment and supplies for the Americanization "work room."

Collection of rocks and specimens from Mrs. E. P. Capen.

Oil painting entitled "Surgical Operations," by Peter de Hough, to the Medical School.

Sixty medical books from Mrs. W. F. Slater.

Torch from St. Paul Welding and Manufacturing Company to the College of Engineering.

Permutit Zeolite water softener from the Permutit Company of New York to the School of Chemistry.

Ethnic materials from John W. Dye to the Department of Anthropology.

Four astronomical instruments from L. B. Lawrence.

Equipment from the Connecticut Telephone and Electric Company to the Department of Mechanical Engineering.

Several thousand geological reports from Horace V. Winchell.

Program of the Alumni Association.—The alumni have always shown a deep interest in the welfare of the University. They have ever loyally supported the institution in its critical periods. And at this time when the tremendous increase in students has created exceedingly difficult administrative and financial problems, and when the financial conditions of the country are most depressing, they have again come forward with a program for raising sufficient money to build a stadium and an auditorium. On May 14, 1921, the following resolution was adopted by representatives of the General Alumni Association:

Resolved: That the representatives of the faculty, students, alumni, and former students of the University of Minnesota here present do now take the preliminary steps looking to the organization of a campaign for the raising of a memorial fund of \$2,000,000 for the purposes named above and that those entrusted with the campaign use their discretion as to the certain time when the active solicitation of funds shall commence. Your committee recommends further that a committee of eleven alumni, of which the chairman shall be one, be appointed by the chairman at this meeting to cooperate with similar committees of the faculty and students in undertaking the work of organizing and directing the campaign, with power to enlarge its membership as the committee shall see fit.

This resolution was presented to the Board of Regents at their meeting on June 1, 1921, and the regents responded as follows:

The Board of Regents wishes to express its unqualified approval of the resolution unanimously adopted by the representatives of the various alumni groups, May 14, 1921, outlining a proposal to raise \$2,000,000 for the erection of an auditorium and a stadium and the purchase of land for the enlargement of the athletic field.

The need of an auditorium for assemblies, convocations, musicales, and lectures to serve the intellectual and cultural life of the University is imperative. The desirability of a stadium to seat thousands and an improvement of the athletic facilities is unquestioned. The Board of Regents regards the recognition of these needs and the willingness of the alumni to provide for them as the most significant thing that has occurred in the entire history of the University. That it may be of assistance in outlining plans, in determining policies, and in the successful conduct of the campaign, it has appointed a special committee consisting of Mr. F. B. Snyder, Mr. George H. Partridge, and Mr. L. D. Coffman to cooperate with the special committee appointed by the Alumni.

Only those in direct contact with the needs of the University can fully appreciate how important this contribution of the alumni will be.

Invention of Magnetic Ore Washer.—The University, in addition to being a teaching institution and an institution for the dissemination of valuable information to the people of the commonwealth, is also an institution for research. The University of Minnesota has contributed much through research toward the accumulation of new knowledge highly valuable to the industrial life of the state. Now and then a discovery of immediate commercial value is made. Such was the invention of the Magnetic Ore Washer by Edward W. Davis, director of the School of Mines Experiment Station.

In order to encourage this type of research the University has adopted the policy of permitting members of the staff to share the economic benefits of their study. With this policy in view, the Board of Regents on February 17, 1921, accepted the proposal of Mr. Davis, the inventor of the Magnetic Ore Washer, which read as follows:

Twenty-five per cent of all net moneys received by me to the University of Minnesota, one-half part thereof to be devoted by the Board of Regents through the usual general committees of the School of Mines for the purpose of encouraging and developing research work of this school along mining and metallurgical lines. The other one-half thereof to be permanently invested by the Board of Regents in safe securities and all net income derived from such investment to be used for the purpose in the manner mentioned in this item.

Fifteen per cent of the net moneys received by me to the Director of the School of Mines Experiment Station of the University of Minnesota to be expended by him for the purpose of further investigating, improving and encouraging the field of usefulness of the Magnetic Ore Washer and also for developing other machines which may prove beneficial to the mining and metallurgical industry. Such director shall render a report to the Board of Regents on August first of each year, giving an itemized statement of his expenditures.

Coöperative bookstore for engineering students.—On September 21, 1921, the Board of Regents approved of an amendment to the by-laws of the Association of Engineering Students which amendment provided for the establishment of a coöperative bookstore to be conducted by the Association of Engineering Students. The plan of this coöperative store is as follows:

The management of the store shall be by a board of eight (8) directors, three (3) of whom shall be members of the faculty. Two faculty members shall be from the faculty of the College of Engineering and Architecture and one from the School of Chemistry. There shall be five (5) student members elected from the association. These shall be elected by members of the association, each group voting for the representative from its particular group. The five groups represented shall be students in architecture, civil, electrical, mechanical, and chemical engineering. The student members shall be nominated by a petition of at least ten members of the particular group to be represented. All signers must be above the freshman class. Candidates must be above grade in 75 per cent of their work.

The report of the dean of the College of Engineering and Architecture indicates that this store has been highly successful and that students in the College of Engineering and Architecture and the School of Chemistry have been able to reduce the cost of textbooks quite materially. The service of securing textbooks promptly has also been greatly improved.

CONCLUSION

In concluding this, my first annual report, I wish to express my deep appreciation of the earnest and effective coöperation given me by the Board of Regents, the faculty, and indeed all those connected with the University administration. I wish also to repeat that the legislature, even tho it did not give the University sufficient money to cover all needs presented in the biennial request, did nevertheless, in view of the distressing economic conditions of the state, respond generously.

Respectfully submitted,

L. D. COFFMAN, *President*

COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

To the President of the University:

SIR: I submit herewith my report on the work of the College of Science, Literature, and the Arts for the year 1920-21.

The growth of the college following the war was not ended by the 70 per cent increase in enrolment in 1919-20 over 1918-19. The enrolment this year has shown a further increase of 5.8 per cent. This increase has fallen chiefly in the sophomore year. The most striking changes have appeared in the relative number of men and women students and in the distribution of students among the subjects of study. Whereas for many years before the war there were usually more women students than men, this year the men constitute 57.2 per cent of the enrolment and outnumber the women by one third. The work of the social science departments has shown an increase proportionately much greater than that of other departments. The number of students from outside the state of Minnesota is slowly increasing, but the percentage is still considerably below that of 1916-17.

A. FACULTY

The total teaching staff this year included 235 persons, equivalent to the full time of 197, distributed among the various ranks as shown in the following table:

	1918-19	1919-20	1920-21
Professors	39	41½	40½
Associate professors.....	11	16½	17½
Assistant professors.....	32	39½	33
Professorial lecturers.....	4	3	5
Instructors	39	54	66½
Lecturers .....	..	½	2½
Assistants and teaching fellows equal to full time	34	39½	35½
	174	194½	200
Absent on leave.....	32	11	3
Teaching staff actually in residence.....	142	183½	197

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

Resignations.—Carleton Brown, professor of English, to accept a professorship at Bryn Mawr College; Arthur J. Todd, professor of sociology and director of the training course for social work, to continue in labor

management work; Ralph House, associate professor of Romance languages, to accept professorship at the Iowa State University; Mabel Fernald, assistant professor of psychology, to accept position as assistant director of the Vocation Bureau at Cincinnati, Ohio; Chessley J. Posey, assistant professor of geology, to accept professorship at University of Kansas; Daniel Ford, assistant professor of rhetoric, to accept professorship at Lake Forest University; Pedro Henriquez-Ureña, assistant professor of Romance languages, to accept professorship at University of Mexico; Rupert C. Lodge, assistant professor of philosophy, to accept professorship at University of Manitoba; Albert J. Lobb, assistant professor of political science, to become University comptroller; John J. B. Morgan, assistant professor of psychology, to enter grading and testing section of Education and Recreation Division of United States Army; Katherine Ball, vocational adviser, to become state secretary of the Friends' Society Relief Organization; Norman J. Radder, assistant professor of journalism, to accept professorship at the University of Indiana.

Leaves of absence.—Herbert Woodrow, associate professor of psychology, was absent on sabbatical furlough.

The following were on leave without pay: Arthur J. Todd, professor of sociology, David Swenson, professor of philosophy; Oscar W. Firkins, professor of comparative literature; and Norman J. Radder, assistant professor of journalism.

C. O. Rosendahl, professor of botany, was on leave during the fall quarter on account of illness.

Promotions.—The following promotions were in effect during the year: from the rank of assistant professor to that of associate professor, Raymond Brink and William L. Hart in mathematics; from the rank of instructor to that of assistant professor, Elizabeth Jackson, Sigurd B. Hustvedt, and Emerson G. Sutcliffe in rhetoric, and Gustave van Roosbroeck in Romance languages.

The following promotions become effective in the year 1921-22: from the rank of associate professor to that of professor, Solon J. Buck in history; from the rank of assistant professor to that of associate professor, Lester B. Shippee and Mason W. Tyler in history, William Anderson and Quincy Wright in political science, and Karl S. Lashley in psychology; from the rank of professorial lecturer to that of assistant professor, W. F. Miller in physics and Mildred Loring in psychology; from the rank of instructor to that of assistant professor, Dwight E. Minnich in animal biology, George Stephenson in history, and Robert V. Cram in Latin.

New appointments.—To begin service during the year 1920-21: Rodney B. Harvey, assistant professor of botany; George P. Conger, assistant professor of philosophy; Harold P. Quigley, assistant professor of political science; Josef E. Gillet, assistant professor of Romance languages; Ruby Baughman, professorial lecturer in anthropology; Mildred W. Loring, professorial lecturer in psychology; Antony Constans, professorial lecturer in Romance languages.

To begin service in the year 1921-22: Samuel B. Harding, acting professor in history; Donald G. Paterson, associate professor in psychology; Harry M. Johnson, lecturer in psychology.

B. STUDENT BODY

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

	1919-20			1920-21		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
Seniors	81	234	315	100	175	275
Juniors	162	191	353	145	223	368
Sophomores	555	406	961	923	571	1,494
Freshmen	1,238	684	1,922	1,021	611	1,632
Unclassed	75	120	195	73	121	194
	2,111	1,635	3,746	2,262	1,701	3,963

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

	1916-17	1917-18	1918-19	1919-20	1920-21
Men	1,192	934	813	2,111	2,262
Women	1,289	1,381	1,383	1,635	1,701
Total	2,481	2,315	2,196	3,746	3,963

The number of students from other states for the past five years:

	1916-17	1917-18	1918-19	1919-20	1920-21
Percentage of total.....	16	11	10.4	11.9	12.3

The following table shows the amount of teaching done by each department during the fall quarter in comparison with the fall quarter of last year and the winter quarter of the preceding year:

	1918-19 WINTER QUARTER*	1919-20 FALL QUARTER	1920-21 FALL QUARTER
Animal Biology.....	2,028	4,097	3,606
Anthropology and Americanization Training.....	....	973	978
Astronomy	321	237	298
Botany	976	2,274	1,549
Comparative Philology.....	156	20	43
Economics	1,561	....	....
English	1,632	2,359	2,150
Geology and Mineralogy.....	1,053	1,630	1,329
German	938	2,012	2,324
Greek	153	150	264
History	3,595	7,427	7,493
Journalism .....	....	102	138
Latin	189	359	399
Mathematics	2,150	3,839	2,582
Music	641	761	833
Philosophy	414	417	713
Psychology	1,227	2,355	2,381
Physics	1,245	3,091	2,679
Political Science.....	1,344	1,738	3,532
Rhetoric and Public Speaking.....	3,935	8,764	9,845
Romance Languages.....	5,152	8,271	8,316
Scandinavian Languages.....	192	379	451
Sociology and Anthropology.....	710	....	....
Sociology and Social and Civic Work.....	....	1,712	2,867
Total	30,201	52,417	54,760

* The winter quarter is given as being a period of normal work. The fall quarter was the period of the S.A.T.C. During this quarter the total credit hours of teaching were 39,326.

C. ADMINISTRATIVE ORGANIZATION

The organization described in last year's report has done effective work in registering and advising students in the Junior College, in supervising the promotion of students to the Senior College and their election of major studies, in the treatment of delinquent students, and in the preparation of programs and bulletins. The spring registration has proved an even greater success than was anticipated. All crowding and confusion in the fall registration has been eliminated because half of the students are registered in the spring. In spite of the large number of students and the increasing complexity of special courses of study and of relations to other colleges, the work of the college on the whole has been conducted more smoothly and efficiently than in previous years.

During the year it became evident that the honor system of conducting examinations was not working satisfactorily and the Academic Student Council took action requesting that the honor system be suspended. The faculty accepted this proposal and made provision for a joint committee, consisting of three members of the faculty and three students to be appointed by the Student Council with the dean of student affairs and the

dean of women as ex-officio members, to try cases of alleged cheating or dishonesty in scholastic work. It was further provided that the instructor making the charge should appear personally before the committee to give the evidence and that reports of action by the committee should be made promptly to the instructor. The Student Council declined to appoint student members to this committee, so that the committee has been constituted of Assistant Dean Shumway as chairman, and Assistant Professors Shippee and Kroesch as the faculty members. All examinations will be proctored and the enforcement of the customary standards of honesty will remain in the hands of the faculty, at least, until public opinion and moral sentiment among the students give assurance that they can and will observe and maintain honest work.

D. CURRICULUM

At the meeting, April 25, the faculty passed the following motion:

In view of the financial situation of the University and the limited funds available for true college and university work, the College of Science, Literature, and the Arts recommends to the Senate that the following policy be approved for this college and that action consistent with this be taken with respect to instruction in other colleges in subjects which may be studied in the high schools of the state:

1. *Foreign languages.*—Beginning with the academic year 1923-24, elementary instruction equivalent to that given in two years of standard Minnesota high schools in the French, German, Spanish, and Scandinavian languages will be offered in this college only for those students who have satisfied the Junior College requirement in Group B and wish to acquire an additional language.

Provided, however, that in view of the extraordinary situation with respect to the teaching of German in the high schools, there being only eight high schools in the state now giving instruction in German, and in order to allow time for the reinstatement of German in the schools, the above regulation be not applied to the study of German until the expiration of a further period of two academic years. During these two years students who come from high schools where they had no opportunity to study German, and who have had two years of one foreign language, will be given the option of continuing the language already studied or of beginning German in the University with credit.

It is recommended that the University provide, through the Extension Division, an opportunity for the study of beginning languages on the payment of fees. College credit will not be given for this work. Students who take such work in extension shall have their programs reduced in proportion.

2. *Mathematics.*—After the year 1922-23, instruction will no longer be offered to the students of this college in higher algebra or solid geometry. It is recommended that opportunity for the study of these subjects be offered through the Extension Division.

3. *Rhetoric.*—(To go into effect as soon as the machinery can be perfected.) In order more effectively to classify students entering freshman English.

A. an optional test shall be offered before college opens, success in which will exempt students from the requirement of freshman rhetoric.

B. during the first week of college, tests will be given to determine what students are unprepared to do the work of freshman rhetoric. These students will then be assigned to a class in subfreshman rhetoric, to be conducted by the Extension Division. Such students may enter the course in freshman English only when their work in the subfreshman course is such as to satisfy the department that they are prepared to carry the work successfully.

This action was taken primarily for the purpose of effecting the transfer of these elementary studies to the high-school years, and of employing the time of the student in college upon studies of more advanced grade. It was felt especially that when financial support has become such a serious problem, the funds supplied by the state ought to be used for instruction properly of college grade and not for elementary teaching which can be and is provided in the public high schools.

The faculty at the same meeting also recommended changes in the treatment of delinquent students which should (a) lengthen the term of probation before a student shall be dropped because of low scholarship; (b) require the student who has once been dropped to present to the Students' Work Committee reasonable evidence that he can and will pursue the college studies successfully; and (c) require a dropped student to remain out of college until the opening of the term in the following year corresponding to that in which his delinquency occurred. The object of the last provision is to enable the student to pursue additional preparatory studies or to engage in work which will develop his responsibility so that he may become sufficiently mature to take up his college work in a serious spirit.

This action was taken because of the facts set forth in the following table which shows that altho a very large number of students who are dropped for low scholarship return to college a second, a third, or a fourth time, very few such students ever complete the course of study.

STUDENTS WHO RETURNED TO COLLEGE AFTER AN UNSATISFACTORY SCHOLARSHIP RECORD, FALL QUARTER 1920-21

	FRESH.	SOPH.	Jr	SR.	GRADUATED IN				
					1920	1919	1918	1917	1916
Dropped for low scholarship	33	38	5	6	1	..	4	5	3
Withdrawn, low scholarship	23	7	..	..	..	..	..	..	..
Cancelled, with failures...	5	..	..	..	..	..	..	..	..
Cancelled, low scholarship.	44	15	..	..	..	..	..	..	..
Complete failures in one or more terms.....	2	..	..	..	..	..	..	..	..
Non-attention combined with low scholarship.....	7	4	1	..	..	..	..	..	..
All causes.....	114	64	6	6	1	..	4	5	3

There is absolutely no presumption from the nature of things or from the rights of citizenship that any young man or woman in this state has a right to continue in the University. *The only ground on which such a right can be based is the successful performance of college work.* It is only the demonstration that he is profiting by higher education that gives a student the right to demand it at the expense of the state. The few students who show themselves really incapable of doing college work ought not to be encouraged to remain in college. Students who have failed through carelessness and irresponsibility have forfeited their rights and

can regain them only by giving evidence that they have learned to be responsible for the right use of the opportunities which the University offers.

Under our past regulations such a requirement has not been made, and the number of students thus lacking in responsibility are equal to one in seventeen of the whole enrolment. The presence of these students in classes robs the faithful students of the time and attention of their teachers and exercises a demoralizing influence on scholastic work and all University life.

Following the above provisions for reducing the elementary studies offered in the college and for ridding college life of careless and irresponsible elements, the faculty must undertake the more important duty of providing opportunities for the unusually capable and the serious-minded student to make the most of his powers and to make the best use of his time. Our requirements for graduation are such as the barely passable student can meet in four years. The most brilliant student is compelled to spend the same time to obtain the same degree. This does not offer to the strong student a reasonable incentive to work. The poorest student is expected to spend two hours or more in preparing a lesson. The average student can do it in half the time. The brilliant student needs but a few minutes for preparation and for a large part of the time can "get by" by bluffing. Why should these students not dance and gamble and spend their time in whatever amusements are at hand? What has the University faculty done to put scholastic work on a basis of fair competition with social pleasures and youthful play?

It is not enough to tell students what they ought to do. Authority in education no longer counts. Personal experience and self-interest are almost the sole guides of the present generation. College requirements and regulations must make the degree an evidence of achievement and must make the rewards proportional to the ability and energy put into college work. An incentive to serious work must be furnished by enabling the student to *gain something*—time, or money, or power—by putting his whole energy into his work. Even the supposedly serious student of to-day does not gain power in his four years of college life because he does not set his innate powers to work at their full capacity. Strenuous work, effort made to the limit of our powers, is the only road to great intellectual growth and strength. We are not only not stimulating this in our better students, but the colleges of to-day are actually inducing weakness and causing deterioration in many youths of great natural talents by expecting only mediocrity, by removing stimulation, and allowing the students' mental powers to atrophy.

The need for doing more for the good student has long been recognized and most institutions have offered prizes and scholarships and degrees with distinction and honor courses to encourage scholarship. The results have been only random and spasmodic. The solution must be found in placing before every student the opportunity for achievement

and rewards in proportion to his ability and his effort. It should be one of the first duties of the faculty of the liberal arts college to find this solution.

E. SPECIAL ACTIVITIES

The Bureau for Research in Government makes an annual report to the dean. The following extracts are made from the report of the director, Professor William Anderson, for the year 1920-21:

The bureau was established in 1919 for the purpose of promoting research work in government at the University and also with the object of publishing a series of useful informational bulletins concerning the problems of the state and local government of Minnesota.

Among the accomplishments of the year 1920-21 the bureau makes mention of the following:

I. Publications and reports.

1. *A History of the Constitution of Minnesota with the First Verified Text*, 1921. 323 pages, published by the University as a study in the social sciences, number 15. While the work on this study was begun even before the establishment of the bureau, its completion is largely attributable to the existence of the bureau. This study was explained to the readers of the *Minnesota Law Review* in an article entitled, *The Constitution of Minnesota* published in the *Law Review* in May, 1921, volume 5, pages 407-35.

2. *An Outline of the Government of Minnesota*, 74 pages, published by the Minnesota Republican Women's State Executive Committee, 1921. This organization published 10,000 copies of this outline and gave it circulation throughout the state.

3. *Minneapolis Charter Problems*, 40 pages, published by the Women's Club of Minneapolis, and the Fifth District League of Women Voters, 1921. These organizations published 5,000 copies of this pamphlet, of which more than half have already been sold in the city of Minneapolis.

4. In the fall of 1920, before the election, the director prepared for the League of Women Voters an explanation of the several amendments which were submitted to the voters of the state in the 1920 election. This explanation was mimeographed and sent throughout the state by the League of Women Voters and it was also printed in *Minnesota Municipalities*, October 1920, volume 5, pages 125-30.

5. The director also prepared a report on *City Charter Problems in Minnesota, 1921*, which was read at the convention of the League of Minnesota Municipalities at Winona, June 16, 1921.

6. Under the supervision of the director, the secretary, Miss Hall, made a survey of the scientific and research activities of the state government for the National Research Council. For this work, which has not been published, the bureau was compensated to the extent of \$36.94 by the National Research Council.

7. Throughout the year the director kept himself at the service of the Charter Commission of Columbia Heights. This commission adopted the first genuine city-manager charter to be drawn up and adopted in this state. The director did not impose this plan upon the commission, nor in any way try to control the judgment of its members as to the best form of government for Columbia Heights. He acted simply as a sort of technical adviser and he also, at the end, put the charter into shape. Since this charter has been adopted, considerable interest in it has been shown by outsiders. It will probably serve as the basis in the preparation of a model city charter for the smaller cities of Minnesota.

II. *Assistance to students.*—The Bureau for Research in Government works in close coöperation with the seminar of the Department of Political Science. The secretary of the bureau acts as secretary of the seminar for the purpose of keeping in touch with the work there being done.

III. *The collection of materials.*—During the past year the bureau has more than doubled its collection of (a) state election laws, (b) governors' messages, (c) state constitutions, (d) publications of constitutional conventions, (e) state road laws.

IV. *Miscellaneous activities.*—For persons here and there throughout the state this bureau serves as a sort of general information center.

In coöperation with the Municipal Reference Bureau this bureau assisted in the holding of a municipal exhibit in the Curtis Hotel during the convention of the League of Women Voters in December, 1920.

Encouraged by the great interest in political activities shown by the various women's organizations, the director spoke at a considerable number of afternoon and evening meetings, delivering lectures upon current unpartisan, political questions and particularly upon the problem of the municipal charter.

Through the Minnesota Historical Society the bureau put at the disposal of the committees of the legislature a quantity of clippings, pamphlets, etc., on the tonnage tax and income tax. As the collection of materials increases, the bureau will be able to give more assistance of this kind to public authorities.

Respectfully submitted,

J. B. JOHNSTON, *Dean*

THE COLLEGE OF ENGINEERING AND ARCHITECTURE

To the President of the University:

SIR: I beg to submit my report for the College of Engineering and Architecture for the year 1920-21.

In this college, as in the University as a whole, the year just closing will be remembered as one of great financial stress. While the registration was not quite so large as last year, the decrease was entirely in the freshman year, the upper three classes being larger than before. The additional expenditures last year, which were rendered necessary by the great influx of students and also by the high prices of commodities, resulted in a stringency in finances for the current year to such an extent that it was only with difficulty that classes could be operated effectively. Added to this, the anxiety and unrest regarding the salary situation, made it difficult for the whole student body to settle down to a condition of mental equilibrium which would be conducive to study.

The action of the legislature, altho belated, can not fail to result in a more settled condition in the faculty, the administration, and the student body. There will undoubtedly be a number of adjustments but the total effect will be wholesome. It will be possible to devote more attention to important matters of instruction and administration than has been the case during the past year.

ADMINISTRATION

The administration of the College of Engineering and Architecture has been interrupted by changes in the deanship during the past four years. In 1917 Dean Shenehon resigned and was succeeded by Dean Allen. In 1919 Dean Lauder W. Jones, of the School of Chemistry, succeeded Dean Allen in accordance with the plan which was then adopted by the Board of Regents looking towards the establishment of an Institute of Technology. Last year Dean Jones resigned to accept a professorship in organic chemistry at Princeton University, and was succeeded by the writer as dean of the College of Engineering and Architecture and the School of Chemistry. Such a series of changes necessarily resulted in a discontinuity of policy which prevented the unity of effort necessary for the best development of the college, especially when the disturbing effects of the war period are considered.

In addition to the usual difficulties and disturbances resulting from a change of administration, the situation in this college was rendered acute by the resignation, last summer, before the advent of the new dean, of the secretary, Miss Eva L. Beck, who had been in charge of the dean's office for about nine years and whose services were exceedingly valuable, especially when the dean was about to resign. She left her position in order

to accept a more lucrative one. Her loss was a very serious one for this college and the University.

The administration of the School of Chemistry in connection with the College of Engineering and Architecture seems to be producing the correlation of work and interests which were desired when the new plan was adopted two years ago. A closer relation between the two colleges facilitates the arrangement of courses and curricula. Also it has been possible to obtain uniformity with regard to various regulations involving the scholarship and conduct of students.

FACULTY

Notwithstanding the unsettled conditions in the University, the faculty of this college have remained loyally at their duties and it is to their credit that the work of the college has progressed without serious impairment. While the competition with the industries has diminished to a considerable extent, especially during the last six months, the competition with other universities is still keen and perhaps keener than ever because many of them have received additional funds during the year. It is a fact, however, that our resignations have been due to the business competition rather than the educational. We have been fortunate this year in obtaining the services of Mr. J. H. Rowen as a professorial lecturer in the Department of Mechanical Engineering. Mr. Rowen is a graduate of the United States Naval Academy and a consulting engineer of wide experience in connection with power-plant design and operation. Under the existing conditions in the industrial world, it seems likely that we shall be able to obtain additional instructors without great difficulty, altho experienced instructors are hard to find.

The following list shows the changes in the faculty during the year:

New appointments.—O. M. Leland, dean of the College of Engineering and Architecture and of the School of Chemistry. *Architecture:* Paul Gauger, lecturer on construction methods, R. W. Hammett, instructor. *Civil Engineering:* Instructors, L. F. Boon, J. C. Worrell, and C. D. Franks (one quarter). *Drawing and Descriptive Geometry:* Instructors, A. W. Peterson, R. Skagerberg, I. Kvitrud (one quarter), and J. E. Finley (one quarter). *Electrical Engineering:* Instructors, M. E. Todd and J. H. Kuhlman. *Mathematics and Mechanics:* Instructors, O. C. Lee, F. E. Peacock, H. G. Overholt, and H. B. Wilcox. *Mechanical Engineering:* J. H. Rowen, professorial lecturer.

Promotions.—The following were promoted from the rank of associate professor to professor: A. S. Cutler, in railway engineering; W. F. Holman, in mathematics and mechanics; S. C. Shipley, in machine construction and superintendent of shops. From assistant professor to associate professor: H. H. Dalaker, in mathematics and mechanics. From instructor to assistant professor: M. B. Lagaard, in structural engineering; F. C. Lang, in highway engineering; H. D. Myers, in drawing and descriptive geometry; C. M. Jansky, Jr., in radio engineering; B. J. Robertson,

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in mechanical engineering and assistant director of the experimental engineering laboratories; R. R. Herrmann, in mathematics and mechanics; W. M. McClintock, in mathematics and mechanics; R. W. Siler, in mathematics and mechanics; H. B. Wilcox, in mathematics and mechanics.

Leaves of absence.—B. L. Newkirk, associate professor of mathematics and mechanics, sabbatical furlough, in Research Division of the General Electric Company at Schenectady, New York; S. C. Shipley, associate professor of machine construction, leave without pay, at Robert College, Constantinople, Turkey, as professor of mechanical engineering.

Resignations.—C. H. Dow, instructor in civil engineering, to accept position as chief of the highway plans office of the South Dakota Highway Commission; B. L. Newkirk, associate professor of mathematics and mechanics, to accept a research position with the General Electric Company, of Schenectady, New York.

STUDENTS

The expectation of a freshman class as large as that of last year or even larger, was not realized. Still it was larger than the normal, and the sophomore class was exceptionally large as a result of the freshman class of last year.

During the year there has been the usual loss of students in this college particularly of freshmen. A considerable number of students withdrew of their own volition and the industrial depression may have had this effect, altho the opposite effect is not infrequently the case.

REGISTRATION 1920-21
FIRST QUARTER

	Arch.	Civil	Elect.	Mech.	Gen.	Und.	Unc.	Total	Last year's total
Post-seniors . . . . .	...	...	...	...	...	...	...	...	8
Freshmen	44	61	113	66	...	88	6	378	618
Sophomores	39	94	103	81	...	...	...	317	254
Juniors	11	53	67	27	5	...	...	163	149
Seniors	12	28	42	21	24	...	...	127	110
Unclassed	5	1	1	1	...	...	...	8	10
	111	237	326	196	29	88	6	993	1,149

SECOND QUARTER

	Arch.	Civil	Elect.	Mech.	Gen.	Und.	Unc.	Total	Last year's total
Post-seniors . . . . .	...	...	...	...	...	...	...	...	7
Freshmen	39	59	108	49	...	54	...	309	565
Sophomores	31	95	96	79	...	...	...	301	239
Juniors	11	52	58	26	6	...	...	153	144
Seniors	12	25	42	19	18	...	...	116	105
Unclassed . . . . .	...	...	...	...	...	...	14	14	15
	93	231	304	173	24	54	14	893	1,075

THIRD QUARTER

	Arch.	Civil	Elect.	Mech.	Gen.	Und.	Unc.	Total	Last year's total
Post-seniors ...	...	...	...	...	...	...	...	...	4
Freshmen	32	61	86	48	...	48	...	275	471
Sophomores ...	32	88	89	69	...	...	...	278	198
Juniors	9	50	54	24	7	...	...	144	127
Seniors	11	8	41	19	13	...	...	92	99
Unclassed	11	2	2	1	...	...	...	16	18
	95	209	272	161	20	48	...	805	917

DEGREES CONFERRED, 1920-21

	DECEMBER 1920	JUNE 1921	TOTAL
Bachelor of Science in			
Architecture .....	..	7	7
Civil Engineering.....	..	19	19
Electrical Engineering.....	..	28	28
Mechanical Engineering.....	..	14	14
Engineering	2	10	12
Civil Engineer.....	..	..	..
Electrical Engineer.....	..	1	1
Mechanical Engineer.....	1	7	8
Total	3	76	79
Total, last year.....			88

Scholarship.—The idea is prevalent that the scholarship of students is distinctly below the pre-war standard. Many students during the past two years have given no evidence of effective study. The records of the freshmen in their courses in mathematics indicate that their preparation in this subject has not been so thoro as it should have been. It is intended to test the incoming freshmen next year in elementary algebra in order that they may be segregated in classes according to their ability. Those who need it will then receive special instruction in this subject. It is hoped also that an elementary intelligence test will be available to assist in this segregation.

Attendance.—During the fall quarter the attendance of students in their classes had become so irregular in certain instances that a special study of the matter was made and the faculty adopted a series of regulations for the control of the attendance of students of this college in classes which were given in this college. These rules have been in effect during the second and third quarters and the attendance has improved to a marked degree. No department outside of this college has been requested to conform to these rules in view of the fact that the whole matter of the control of absences has been under consideration by other faculties during

the year. However, it is hoped that the plan will be more widely adopted next year.

The basis of this system of controlling attendance lies in the principle that instructors will not be required to report every absence nor to report at certain specified times, such as daily or weekly, but only when the student should be investigated to see that he is receiving attention in the event of sickness or when action is necessary as a result of continued neglect of work due to non-attendance. The instructor reports the student who has two consecutive absences in his course or the student who has received a number of unexcused absences equal to the number of credits in a course. In this latter event the student is dropped from the course with a mark of failure unless extenuating circumstances are revealed.

INSTRUCTION

Evening courses.—Owing to the limited facilities in the mechanical engineering shops and the large number of students requiring accommodation, regular shop classes were held in the evening during this year. Sixty-two pre-dental students were thus enabled to take their required courses in shop practice.

Orientation course.—The freshman years of all engineering courses are practically alike. At the beginning of the sophomore year, the student has to decide which course he will follow. In order to assist him in making this choice intelligently, a new course has been established under the name of "Orientation Course," since its object is to give the freshmen a broad view of the entire field of engineering. It is intended that this course will be given throughout next year but in order that the present freshmen might have the advantage of a portion of the course it was given to them during the spring quarter of this year. The course consists of a series of illustrated lectures given by various members of the instructing staff of all the departments.

Lectures.—During the year two series of lectures have been given in this college which deserve comment. Mr. Charles L. Pillsbury, a prominent engineer of this city, gave a series of lectures for seniors and graduates on the subject of "The Valuation of Public Utilities." These lectures were free and Mr. Pillsbury very generously contributed them without expense to the college. Professor S. C. Burton, of the Department of Architecture, delivered a series of three lectures on "Art," which was open to the public and which was very well attended and much appreciated.

Curricula.—A new curriculum has been adopted and opened to students this year in the line of architectural engineering. It is called a Construction Option in Architecture and as its name implies it is particularly intended for students who desire preparation for the construction field rather than that of design in architecture. Changes of curricula during the year have been purposely avoided except where necessary in order better to carry out the plans adopted last year. A uniform requirement for graduation from the various courses in the college has been adopted. This states that students must complete all of the required courses in the

curriculum and sufficient electives to make a total of at least 204 credits.

Professional Engineer's degrees.—In the past, the administration of the professional degrees of Civil Engineer, Electrical Engineer, and Mechanical Engineer has been under the control of the faculty of this college. These have been essentially graduate degrees inasmuch as they resulted from a year's post-graduate work following the receipt of the Bachelor's degree in engineering.

At the suggestion of this faculty, the administration of these degrees has been accepted by the Graduate School and at the last commencement exercises were conferred for the first time through the Graduate School.

Under the present requirements the Engineer degrees correspond quite closely to the Master degrees. They require a year's post-graduate study in residence, including a thesis. Under the new requirements, which will go into effect in 1923, the Engineer degrees partake of the dignity and importance of the Doctor's degree inasmuch as they require a year's post-graduate study which may or may not result in a Master's degree, four or five years of professional experience in positions of responsibility, and a thesis of professional grade. Under these requirements the degree would not be granted in less than five years after the Bachelor's degree had been received.

Post-senior year.—As a result of the above action, the fifth or post-senior year will be abolished in our curricula and the student will register for this work in the Graduate School.

Coöperative five-year course.—A noteworthy arrangement has been made with the University of Oregon whereby students who have satisfactorily completed three years of the work prescribed for this purpose at the University of Oregon may enter this college and complete the requirements for our Bachelor's degree in two additional years. At the end of the first year here, they will receive the degree of Bachelor of Arts from the University of Oregon and at the end of the next year the degree of Bachelor of Science in the corresponding branch of engineering from this University. This is a broad plan and may have far reaching effects. The students who are permitted to carry out this arrangement are required to stand above a certain grade of scholarship. Those who graduate from the five-year course will be more strongly prepared for the engineering profession than our regular four-year students. The plan may well be adopted by other institutions and a similar arrangement might be made with the College of Science, Literature, and the Arts of this University. The University of Oregon does not possess an engineering college so that the new arrangement is particularly desirable.

RESEARCH

Through coöperation between the University and the Research Bureau of the American Society of Heating and Ventilating Engineers, investigations have been made with regard to the heat of radiation. It is expected that the funds received from the society will be increased for next year so that the investigations may be continued.

Through the generosity of the Minneapolis Steel and Machinery Company, a fellowship has been available during the past year for research in lubrication.

These examples are mentioned to emphasize the coöperation which ought to exist between this college and industries of the state for the promotion of research. It is confidently hoped that a considerable number of such fellowships may be contributed by various engineering and allied interests.

Bureau of Technological Research.—One of the principal needs of this college is that of an Engineering Experiment Station and Bureau of Technological Research. Such an organization would serve as a nucleus for the development of industrial research, would greatly assist in the correlation of technical research work which is now being carried on in different departments, and would indicate the recognition of the importance of industrial research on the part of the University. The establishment of such a station has already been requested and favorable action is desired.

BUILDINGS

In view of the fact that a change in the curriculum last year placed rhetoric in the sophomore year instead of the freshman year, it was not given to the regular classes during this year. The Main Engineering Building was therefore less crowded than last year.

With the larger classes of juniors and seniors next year and the addition of rhetoric for all sophomores there will undoubtedly be much congestion in this building notwithstanding the fact that the roofhouse on the Chemistry Building will be utilized for drafting rooms.

Rooms in the Experimental Engineering Building and the Chemistry Building will be used for recitations.

The evening courses in mechanical engineering shops have been mentioned. This work will not be given in the evening next year inasmuch as the construction of a temporary addition to the Mechanical Engineering Building has been authorized and this will increase the total capacity of the shops by nearly 100 per cent.

The conditions in the Electrical Engineering Building are continually becoming more intolerable. The new building for this department has been near the head of the building list for many years. By recent action the Board of Regents has authorized procedure towards construction of this building in the very near future and it is confidently expected that actual construction may be under way within a year. This new building would relieve the crowded condition in all of the other engineering buildings.

EQUIPMENT

The unsatisfactory character and amount of the equipment in this college has been reported at various times by my predecessors. The situation is critical in this respect and it is very encouraging that we have assurance of a considerable addition to this equipment during the coming

year and biennium. This is one of the greatest needs of the college and the character of our instruction will be greatly improved by the additional apparatus.

The wave of increased attendance produced by the large freshman class of last year reaches the junior year next fall. This will necessitate a large increase in equipment for the accommodation of additional sections of students. The increased numbers in the sophomore class this year in electrical engineering have resulted in a larger amount of instruction than ever before in that laboratory.

STUDENT ACTIVITIES

Societies.—The establishment of a student chapter of the American Society of Civil Engineers completes a group of national engineering societies embracing civil, electrical, and mechanical engineers and the American Association of Engineers in this college. The general society, known as the Association of Engineering Students, represents all of the students in engineering, in both this college and the School of Chemistry. These student chapters receive much assistance and cooperation from their national societies and the local representatives of those bodies. Many of the meetings of the local societies are held here at the University in conjunction with the student chapters.

Bookstore.—The Engineer's Bookstore which was established a year ago as an activity of the Association of Engineering Students has become a successful enterprise and one of which the student body may well be proud. It is located in a room in the basement of the Main Engineering Building where its facilities are conveniently available to the students in the college. The student manager, Mr. H. C. Jacobson, deserves commendation for his successful efforts in the establishment and administration of this store.

Technolog.—Another student enterprise begun this year was the publication of a technical magazine representing the interests of students in engineering, architecture, and chemistry. This publication replaces the *Minnesota Engineer* which was discontinued a few years ago. The new magazine is published monthly and in accordance with its broad policy, bears the name *Technolog*. Already it has established itself as a prominent member of the publications of technical colleges.

Engineer's Day.—For several years past St. Patrick's Day has been made the occasion of a celebration by the students of this college. This has taken the form of a parade at noon with a tea in the afternoon and a dance in the evening. As a result of this activity, an organization was effected among the engineering students of several mid-western universities and was called the Guard of St. Patrick.

During the past year this organization has effected a more permanent arrangement and has taken on a broader character. An intercollegiate conference was held at Iowa State College in February and resulted in the adoption of more liberal rules and the establishment of an "Engineer's

Day" which might be celebrated on St. Patrick's Day or at any other time determined upon by the particular college concerned.

In accordance with this broader plan, students of this college and the School of Chemistry carried out a noteworthy program on March 17 last. This Engineer's Day was recognized by the faculty as a holiday in this college. The activities consisted of exhibitions in all of the laboratories of the college during the forenoon, at which alumni, students, and friends of the college were invited to be present. The usual parade took place at noon and was followed by the annual ceremony of knighting the senior class. The afternoon tea was made a reception by the students of this college for the students and faculties of other colleges of the University. The formal dance in the evening completed the program. It is felt that a distinct step in advance was taken this year in making this celebration a more dignified and representative matter and one which will effect a closer relationship between the students, alumni, and faculty.

ALUMNI

At the close of this, my first year at the University, I take pleasure in bringing to your attention, Mr. President, the interest which has been shown by the alumni of this college in its progress and welfare. Moreover, a similar interest is displayed by the various engineering organizations of the state and bespeaks a close relationship between the technical schools of the University and practicing engineers which is most desirable from the standpoint of the University.

In closing, I must also express my appreciation of the hearty welcome I have received in the University community and of the honor shown me by the alumni and the engineers of the state.

Very respectfully,

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 fiscal year ending June 30, 1921.

ORGANIZATION

The administrative organization of the Department of Agriculture has not been materially changed during the year. While the department has had a normal growth in size and activities this has not called for any significant qualitative changes in the organization.

It has, however, suffered a heavy loss in the resignations of the dean of the department, R. W. Thatcher, and of the director of Agricultural Extension, A. D. Wilson, both taking effect at the end of the year. Dean Thatcher, who has been dean of the department since August 1, 1917, leaves to accept the directorship of the New York Agricultural Experiment Station at Geneva, New York. Director Wilson has been director of Agricultural Extension since the beginning of the organization of this division in September, 1909, and leaves to engage in farming in the northern part of Minnesota.

Administrative assignments.—Professor C. H. Eckles was appointed acting head of the Animal Industry Group, and Professor W. H. Peters has been acting chief of the Division of Animal Husbandry during the year.

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

Resignations.—R. W. Thatcher, dean of the Department of Agriculture; A. D. Wilson, director of Agricultural Extension; R. J. Garber, assistant professor of plant breeding; J. V. Ankeney, assistant professor of agricultural education; Arthur L. Anderson, assistant professor in animal husbandry; George E. Holm, assistant professor of agricultural biochemistry; W. H. Kenety, assistant professor of forestry at Cloquet; T. E. Odland, assistant professor of agronomy; R. A. Dutcher, associate professor of agricultural biochemistry.

Leaves of absence.—Professor W. P. Kirkwood, of the Division of Publications, was granted a sabbatical furlough beginning September 1, 1920, which was later postponed for one year; Associate Professor William Moore was granted leave of absence for five and one-half months, beginning April 15, 1920, to aid in work against the Japanese beetle in New Jersey; W. A. McKerrow, livestock specialist in Agricultural Extension was granted a leave of absence for six months beginning July 1, 1921, in order to organize the new Central Coöperative Livestock Commission Company at South St. Paul.

Appointments.—

Earl A. Stewart, associate professor of agricultural physics

B.S., 1915, University of Chicago.

Lewis F. Garey, assistant professor of agronomy

B.Sc., 1914, University of Nebraska; M.A. 1915, University of Nebraska; instructor in Teachers' College, University of Nebraska, 1912-15; instructor in Nebraska Normal School, 1915-17; instructor in Agricultural College, Fort Collins, Colorado, 1917-20.

Evan F. Ferrin, professor of animal husbandry

B.S., 1911, Iowa State College; M.Agr., 1920, Iowa State College; instructor to associate professor of animal husbandry at Iowa State College, 1911-18; professor, in charge of swine husbandry, Kansas State College, 1918-20.

Norris K. Carnes, assistant professor of animal husbandry

B.S., 1917, University of Minnesota; two years army service as captain; instructor in animal husbandry, University of Minnesota, 1918-19; farming 1919-20.

Arthur J. Schwantes, specialist in land clearing with rank of assistant professor

Graduated 1917, University of Wisconsin; three months in land-clearing division, University of Wisconsin, 1917; demonstrator for stump-pulling machinery firm; experimental land-clearing work in Florida.

F. W. Peck, director of agricultural extension

B.S.A., University of Minnesota, 1912; M.S., 1917, University of Minnesota; instructor in farm management, University of Minnesota, 1912-15; assistant professor of farm management, University of Minnesota, 1915-18; associate professor of farm management, University of Minnesota, 1918-19; farm economist in charge of section of cost accounting of the Office of Farm Management of the United States Department of Agriculture, 1919-21.

W. C. Coffey, dean of the Department of Agriculture

B.S., 1906, University of Illinois; M.S., 1909, Illinois; instructor in animal husbandry, 1906-7, Illinois; associate, 1907-11, Illinois; assistant professor, 1911-12, Illinois; professor, 1913-21, Illinois; special agent, Federal Tariff Board, 1911.

Promotions.—There have been no promotions to the professorial staff during the year.

Building.—There is a constantly growing demand for much needed building space in several divisions of the department and a very great need for the improvement of equipment and facilities for these divisions. The department needs at the earliest opportunity a plant-industry building to relieve the congestion, particularly in the Administration Building and in agricultural biochemistry.

Additional greenhouse space for experimental purposes is also greatly needed and should be provided in the very near future. The work of several divisions is seriously hampered through lack of such facilities.

The last buildings erected on University Farm were the Veterinary Barn in 1919-20, the Beef Cattle Barn, which replaced the old barn destroyed by fire, in 1917-18 and the Gymnasium in 1915. The last building for classroom and laboratory service was the Home Economics Building,

1914. Additions and repairs were made to the Agricultural Biochemistry, Horticulture, and Plant Pathology buildings in the present year.

There is also an increasing demand for a student building or adequate quarters for study and for general meetings of the student body. No dormitories are open to the college students and the rooming facilities in the vicinity of University Farm are inadequate so that the students are quartered near both campuses and elsewhere in the Twin Cities. It is difficult to maintain a solidarity of interest and enthusiasm in the various fields represented in the College of Agriculture, Forestry, and Home Economics without such dormitory facilities and especially without general student meeting quarters. A student building should be provided for both school and college students in the not distant future.

PUBLICATIONS

During the year, members of the Experiment Station staff submitted for approval for publication in the Journal Series a total of fifty-six articles which serve as reports of progress upon projects of investigation in the station. Fifty-nine articles were approved for publication in the series of miscellaneous contributions.

Four Experiment Station bulletins, numbers 193 and 194 in the Regular Series, and numbers 1 and 2 in the new Technical Series, approved by the Bulletin Committee at a meeting June 30, 1921, were printed in the course of the year, or at least begun. The four bulletins referred to contained a total of 424 pages and were issued in editions amounting to 17,500. Three other bulletins, numbers 178, 179, and 189, with a total of 128 pages and 15,000 copies were reprinted. Four annual reports with a total of about 246 pages and 8,000 copies were issued. These were the twenty-eighth annual report of the Central Station, and the reports of the Northwest substation at Crookston, the West Central substation at Morris, and the Northeast substation at Duluth.

One bulletin of the Special Series (number 50), containing 20 pages, was printed in an edition of 25,000. Three bulletins of the same series (numbers 15, 45, and 47), with a total of 40 pages and 75,000 copies, were reprinted.

One bulletin in the Circular Series (number 7), containing two pages, was issued in an edition of 13,000.

Miscellaneous publications, including such items as a yearbook of the Department of Agriculture, a sowthistle poster, a seed-corn folder, a seed-corn poster, farmers' and home-makers' short course folders and poster, land-clearing demonstration train folders and posters, grain-smut leaflets, 26 issues of the *University Farm Press News*, and 52 issues of the *News Letter*, were sent out. The total distribution of these miscellaneous items amounted to about 300,000.

The annual report of the mailing room, through which the distribution of the bulletins in the various series and of other printed matter is effected, shows that during the year, approximately 600,000 different items were distributed.

THE PRESIDENT'S REPORT

The various publications in the different series and some of the miscellaneous matter distributed are reviewed in the annual report of the director of the Experiment Station and of the directors of agricultural extension work. The foregoing mention of publications is made here, however, in order to show the volume of material which is annually published to report on the investigational work of the station or to promote the work of the Agricultural Extension Division.

The number of bulletins printed this year was limited owing to the very high cost of printing and to the fact that the bulletins that were printed were of such character and size as to be especially expensive.

REGISTRATION OF STUDENTS

The following table shows the registration of students in the Department of Agriculture for the year 1920-21, as compared with that for 1919-20:

	MEN		WOMEN		TOTAL	
	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20
I. COLLEGE OF AGRICULTURE						
Agriculture						
Seniors	64	58	1	....	65	58
Juniors	68	72	....	1	68	73
Sophomores	99	67	....	....	99	67
Freshmen	119	145	1	....	120	145
Unclassed	6	8	....	....	6	8
Total	356	350	2	1	358	351
Forestry						
Seniors	7	6	....	....	7	6
Juniors	8	7	....	....	8	7
Sophomores	31	9	....	....	31	9
Freshmen	18	39	....	....	18	39
Unclassed	2	1	....	....	2	1
Total	66	62	....	....	66	62
Home Economics						
Seniors .....	....	....	57	59	57	59
Juniors .....	....	....	77	66	77	66
Sophomores .....	....	....	99	70	99	70
Freshmen .....	....	....	73	99	73	99
Unclassed	1	....	26	17	27	17
Total	1	....	332	311	333	311
War specials.....	21	9	....	....	21	9
Total college year.....	444	421	334	312	778	733
Summer Session.....	120	34	126	94	246	128
Total collegiate registration	564	455	460	406	1024	861
Duplicates	43	17	34	38	77	55
Net total.....	521	438	426	368	947	806

	MEN		WOMEN		TOTAL	
	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20
II. SCHOOL OF AGRICULTURE						
Three-year course						
Seniors	122	85	38	28	160	113
Juniors	190	134	53	47	243	181
Freshmen	224	382	56	91	280	473
Unclassed	111	238	6	....	117	238
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total	647	839	153	166	800	1005
Intermediate	21	10	4	3	25	13
Special	1	1	2
Normal	9	9
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Total school registration....	669	849	158	178	827	1027
Vestibule school.....	162	162
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Total school and vestibule..	831	849	158	178	989	1027
Duplicates	34	34
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Net total.....	797	849	158	178	955	1027
III. SHORT COURSES						
Dairy School						
Advanced factory cheese-makers	2	3	....	....	2	3
Advanced creamery butter-makers	18	26	....	....	18	26
Creamery butter-makers....	57	59	....	....	57	59
Ice-cream makers.....	17	39	....	....	17	39
Milk-plant operators.....	7	7	....	....	7	7
Milk-plant operators—evening	93	....	....	....	93	....
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total Dairy School....	194	134	....	....	194	134
Duplicates	7	14	....	....	7	14
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Net total.....	187	120	....	....	187	120
Extension gymnasium Luther Seminary						
Seminary	60	67	....	....	60	67
Extension swimming.....	....	....	33	13	33	13
Extension swimming.....	19	15	....	....	19	15
Gymnasium for St. Anthony Park boys.....	24	27	24	27
Gymnasium for station clerks and women of St. Anthony Park	31	10	31	10
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Total extension gymnasium	103	109	64	23	167	132
Duplicates	7	7
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Net total.....	103	102	64	23	167	125
Teachers' training school..	....	5	....	232	....	237
Consolidated school principals .....	....	69	....	18	....	87
Grain elevator accounting and management short course .....	....	7	....	....	....	7
Home nursing short course .....	....	....	61	85	61	85

THE PRESIDENT'S REPORT

	MEN		WOMEN		TOTAL	
	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20
Threshermen's short course	....	39	....	....	....	39
Forestry short course at Itasca Park.....	....	12	....	....	....	12
Traction engineering.....	21	21	....	....	21	21
Boy Scout short course at Itasca Park.....	....	19	....	....	....	19
Gas tractor short course....	15	....	....	....	15	....
Library training school....	....	....	39	....	39	....
Scout masters' short course at Itasca Park.....	26	....	....	....	26	....
*Total short courses.....	359	415	164	358	523	773
Duplicates	8	22	2	....	10	22
Net total.....	351	393	162	358	513	751
Total at University Farm..	1754	1719	782	942	2536	2661
Duplicates	100	50	37	46	137	96
Net total.....	1654	1669	745	896	2399	2565

IV. NORTHWEST SCHOOL OF AGRICULTURE AT CROOKSTON

Three-year course						
Seniors	39	18	16	10	55	28
Juniors	36	67	14	19	50	86
Freshmen	91	144	29	41	120	185
Total	166	229	59	70	225	299
Intermediate .....	....	....	....	2	....	2
Total School of Agriculture	166	229	59	72	225	301
Short courses						
Junior short course.....	42	93	35	89	77	182
Total short courses....	42	93	35	89	77	182
Total Northwest School of Agriculture	208	322	94	161	302	483
Duplicates .....	....	....	....	....	....	....
Net total.....	208	322	94	161	302	483

V. WEST CENTRAL SCHOOL OF AGRICULTURE AT MORRIS

Three-year course						
Seniors	17	13	23	10	40	23
Juniors	41	28	24	28	65	56
Freshmen	92	136	34	39	126	175
Unclassed (specials)....	....	....	....	2	....	2
Total	150	177	81	79	231	256
Intermediate	2	2	....	....	2	2
Total school.....	152	179	81	79	233	258

* It should be noted that only those short courses are included for which the registrants pay fees to the University. This excludes a number of courses such as boys' and girls' week, editors' short course, and farmers' and home-makers' week.

	MEN		WOMEN		TOTAL	
	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20
Short courses						
Junior short course.....	37	127	58	145	95	272
Teachers' training.....	....	2	....	47	....	49
Farm women's short course	....	....	122	74	122	74
Total short courses....	37	129	180	266	217	395
Total West Central School of Agriculture.....	189	308	261	345	450	653
Duplicates .....	....	....	....	....	....	....
Net total.....	189	308	261	345	450	653
Total registration						
Department of Agricul- ture	2151	2349	1137	1448	3288	3797
Duplicates	100	50	37	46	137	96
Net total registration..	2051	2299	1100	1402	3151	3701

COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS

Administration.—After thoro discussion and careful consideration by both the College of Education and the College of Agriculture, Forestry, and Home Economics, the relations of the colleges in the preparation of teachers for agriculture and home economics has been placed on a basis which seems to be entirely satisfactory to both colleges, and which it is hoped will permit of the working out of a permanent arrangement. Students will be given every inducement and advantage in entering upon the work of teaching in secondary schools so that the large demand for such teachers may be satisfactorily filled by the University. By the new arrangement those students who desire to prepare for teaching will be registered in the junior year in both colleges; their work will be under the joint administration, and the curriculum, which is for the most part a specified one, has been determined by joint action of the faculties of both colleges. Upon the satisfactory completion of this curriculum the candidates will receive the degree of Bachelor of Science, and also the University Teacher's Certificate. The advantages of this arrangement ought to be a strong inducement to students to enter the teaching work. It will also be possible in the best interests of the students and of the teaching profession to eliminate entirely, or at least to reduce to a minimum, the entrance of students into the teaching work through other channels than the University Teacher's Certificate.

The administrative organization within the faculty of the College of Agriculture, Forestry, and Home Economics has not been otherwise materially changed. There has been added a Committee of Scholarships for the recommendation of candidates for various scholarships, and for the publishing of information concerning these scholarships.

Curriculum.—In order to meet the conditions in the University due to the fact that some other colleges which coöperate with the College of Agriculture, Forestry, and Home Economics have prepared for publication their programs for the whole year in advance, it has seemed desirable for this college to prepare likewise a year's program of courses. Inasmuch as this would be difficult under the open elective system the faculty committees have worked out "advised," or "suggested" curricula and on the basis of these curricula the all-year program of studies and of study hours has been prepared and will be published in the forthcoming bulletin.

The suggested curricula were prepared with great care, and it is hoped that they will not only contribute valuable aid to the student as far as subjects are concerned, but will be of distinct value as vocational guides. These suggested curricula do not supplant the open elective system but merely supplement this system. Students will be given the option of making their own curricula according to the open elective methods and regulations, or they may choose the suggested curricula. The following suggested curricula have been worked out in detail both as to subjects and program: general agriculture, horticulture, extension work, agricultural education, and general agriculture with special emphasis on dairy production, animal husbandry, farm products, and farm management. Great care and special emphasis have been given to the preparation of a curriculum which will fit the student for the actual practice of agriculture and at the same time give him a real University training. Every encouragement and every facility possible is given to the student to select the general courses in agriculture so that he may have a broad, thoro, and practical training.

The suggested curricula involve the addition of practically no new courses of study, but merely group all the existing courses offered. Students who desire to specialize with a view to taking graduate work are referred to the divisions concerned.

Farm engineering has been admitted as a major group. It is understood, however, that students will not be registered as technical engineers or as candidates for engineering degrees, but may major in motors and mechanical phases of farm operations.

The major work in Agricultural Extension has been placed under the staff in Agricultural Education, to be worked out in coöperation with the Agricultural Extension staff.

Quarter system.—It has been practically the unanimous opinion of the staff of this college that the quarter system has contributed very greatly to the efficiency of teaching, to the correlation within the Experiment Station work, to the correlation with the School of Agriculture in the assignment of work to teachers, and in room use and distribution. It is hoped that this system will be made permanent.

Coöperation with other colleges.—Representatives of University departments and the various colleges of the University in which phases of plant science are taught and investigated have united in an informal

coöperation to improve the correlation of class work in plant sciences, and to consolidate the interests of the sciences dealing with plants. A bulletin has been prepared to show the various courses offered in the University and the relation between these courses in connection with plant science specialization. It is hoped this bulletin will prove of value to undergraduate students as a curriculum guide and as a vocational guide, and will be very useful to graduate students in the selection of course work and in major and minor selections. It is planned to bring about similar coöperation along animal industry lines of study.

Student activities.—The student body of the College of Agriculture, Forestry, and Home Economics raised again the question of the continuation of the honor system, and in a general vote of the student body voted by an overwhelming majority to ask the faculty to retain the honor system with only this modification: that as long as the honor system is not in vogue in the College of Science, Literature, and the Arts or in other colleges of the University, the honor system is to apply only to classes held on the University Farm campus.

It is to be regretted that during the past year it has been increasingly difficult to maintain the College Weekly Assembly. The program difficulties have multiplied, the housing difficulties are also great, and it becomes more and more difficult to maintain worth while attendances. It is planned, however, to make another effort next year to maintain the College Assembly.

Probably the greatest need in the development of a college spirit of the finer sort lies in the lack of dormitory and rooming facilities at or near University Farm and in the almost total absence of any student meeting place on the University Farm campus. There is imperative need of a building or rooms where the students may meet in the furtherance of student activities. There are at present almost no facilities for such activities.

Scholarships.—The Caleb Dorr scholarships granted this year were reduced in amount and increased in number. Nine scholarships of \$150 each were granted. For the first time, this year the scholarship of the Get-Together Women's Faculty Club was placed under the jurisdiction of the Scholarship Committee of the faculty. The club also increased the number of scholarships making two of \$100 each. The society of Phi Upsilon Omicron, a society of students in home economics, which maintains a \$50 scholarship, also placed the administration of this scholarship under the Faculty Scholarship Committee.

THE SCHOOLS OF AGRICULTURE

The future development of the secondary schools of agriculture under the supervision of the University has been made the subject of an extensive study by a subcommittee on secondary schools of agriculture to the University Survey Commission and this committee has submitted a report to the chairman of the Survey Commission.

The following brief statements describe the more outstanding features of the work at the three schools during the past year.

THE CENTRAL SCHOOL AT UNIVERSITY FARM

During the past year the School of Agriculture has made progress in every line of work. The irregularities of the war period have been overcome in a large measure, and work is proceeding in accord with the purposes of the school. The total enrolment reached next to the highest mark in its history, and the average age of students in attendance had gone over twenty-one years, due in part to the men accepted for training from the Federal Board for Vocational Education.

The project work carried out during the six months that students are not in classes has been the subject of considerable study during the past year, by the supervisors and other members of the faculty. Project work for credit has been conducted by the school for a number of years. Results have been in many cases most commendable, but we have felt that the projects were so restricted (to production only), that the student did not feel that it was in any true sense a proper representation of the training received in the institution. For this summer, therefore, the project work has been enlarged to include two classes of projects in community betterment and one class in home improvement, besides the production on the farm. More than five hundred students are engaged this year in project work, having registered for three or more projects.

Seven supervisors of projects are visiting the students in their homes, encouraging and aiding them in properly carrying out the project work. It is hoped that the results obtained this year may show how the projects may be refined and perfected for greater usefulness to the student and to the state.

THE NORTHWEST SCHOOL AT CROOKSTON

Enrolment.—There were 233 enrolled, 172 men and 61 women. This was a decrease of 68 from the previous year due mainly to the decrease in prices paid for agricultural products and the resulting financial condition. The senior class numbered 55, 39 men and 16 women; the junior class, 50, 36 men and 14 women; and the freshman class 120, 91 men and 29 women. The junior short course enrolled 77, 42 boys and 35 girls.

Work.—There were no significant changes in the regular work of the school during the past year. The home project work enrolled 122 students, all but a few completing the specified projects successfully. The Northwest School Farmers' Week meetings were attended by nearly 5,000. The farm crops and livestock shows held at the same time surpassed any previous events. Two hundred forty-three extension appointments were made by the superintendent and staff during the year. There is an increasing demand for service.

The superintendent as president of the Red River Valley Live Stock Association and of the Red Lake Drainage and Conservancy District has assisted those organizations in their work during the year. The livestock man also assisted as secretary of the former organization.

Improvements.—The new dining-hall was formally opened on October 5, 1920. The remodeled Stephens Hall was ready a month earlier. The concrete roadway to Crookston was opened on October 5 and the soldiers'

memorial was dedicated on the same date. Much work was done to improve the buildings and campus. The increased funds for maintenance will permit the school and station more adequately to meet the needs and demands of the institution.

Experiment Station.—Work in the Experiment Station has been carried on as usual. A full report of this work is contained in the *Twenty-ninth Annual Report of the Agricultural Experiment Station.*

THE WEST CENTRAL SCHOOL AT MORRIS

The year 1920-21 at the West Central School was featured by the usual uninterrupted school work in all departments. The total enrolment for the year was 449 with 234 in the general session. This was a decrease of 24 students over the total of the previous year which was the largest in the history of the school. Of the enrolment in the general session, 152 were boys and 82 were girls. The graduating class numbered 41, by far the largest class yet to receive diplomas from the school. The class for next year promises to be even larger indicating the increasing tendency for students to complete the three-year course. Eighteen counties were represented in the enrolment with 210 students coming from farm homes. The health of the student body was excellent and no cases of serious illness or epidemic sickness interfered with the school work. Two short courses were held during the year,—Farm Women's Week, the third week in June and the annual Boys' and Girls' Club Week, the first week in April. Both sessions were well attended. The Farmers' Week was not held during the past year because of lack of accommodations at the school and the existing congestion in all classrooms and laboratories. It is hoped that it will be possible to resume Farmers' Week in 1922. Visitors' Day, held July 20, 1920, set a new record in attendance for this occasion. Approximately 9,000 people were present on this day. The purpose of the annual Visitors' Day is to give the people of western Minnesota an opportunity to visit the field experiments and other work at the school.

The physical plant is in excellent condition. Early in the year, the new dormitory for boys, Senior Hall, was completed and ready for the opening of school. This dormitory will accommodate 74 students, is of fireproof construction, and makes an excellent and much needed addition to the housing facilities of the institution. The new classroom and laboratory building which will be known as Agricultural Hall, was not completed in time to be used during the school year. This building will furnish adequate and much needed teaching accommodations for the agricultural departments and will make possible more satisfactory work of a better grade than has been possible heretofore. The great need of the school at the present time is an adequate building for home economics work. The present quarters of the department are too small and only of a temporary nature. Additional rooming quarters are also needed for girls. If the work for girls is to be adequately cared for, a combination home economics building with a dormitory wing should be constructed during the next biennium.

The campus, farm, and experiment station are a credit to the institution. The campus, which was landscaped in 1916, is now one of the most beautiful school campuses in the northwest. The experiment station work continues to progress and the experimental data each year are becoming more valuable. The station herds have increased during the past few years until with few exceptions they are adequate for all needs of the institution.

The activities of the school off the campus include home project work with 253 enrolled. Practically all of these projects were visited and supervised by members of the staff, and were completed during the year. Credit toward graduation is given for this work. The Boys' and Girls' Club work, under the leadership of an assistant state club leader who is a member of the school staff, has greatly increased during the past year. Members of the staff have also given considerable time to this work in addition to their regular work. Approximately 2,000 boys and girls were enrolled in club work in western Minnesota. Numerous extension calls for speakers at farm clubs, farm bureaus, picnics, etc., were supplied and much individual assistance given to farmers with problems on their own farms. The station correspondence is increasing each year.

SHORT COURSES

Some changes were made in the plans for short courses for this year. The Threshermen's Short Course and the Tractor Operators' Short Course, each of which had been held as a separate short course, the former in May and the latter in June, were held at the same time and place as the Farmers' and Home-Makers' Short Course in January.

For the Farmers' and Home-Makers' Week Short Course we were able to obtain from the Western Passenger Association return tickets at half fare on the certificate plan but were unable to obtain the same concession for other short courses because of changes in the Passenger Association regulations.

The Farmers' and Home-Makers' Week Short Course was marked by the most intense interest on the part of the students. They seemed to exceed even those of other years in the desire to know the newest and most scientific procedure in farming and home-making. This constant growth in interest on the part of those attending Farmers' and Home-Makers' Week augurs well for the personnel of those attracted by the short course and for the future of rural life in Minnesota.

The following short courses were held at University Farm during the year: Advanced Creamery Operators' Short Course, two weeks in November; Cheese Plant Operators' Short Course, one week in December; Creamery Operators' Short Course (beginners), six weeks in January and February; Market Milk Plant Operators' Short Course, one week in December; Milk Drivers' Short Course, two days in March; Farmers' and Home-Makers' Week Short Course, one week in January; Tractor Operators' and Traction Engineers' Short Course (combined) one week in January; Boys' and Girls' Short Course, one week in April; Editors'

Short Course, three days in May; Home Nursing Short Course, one lecture a week for six weeks in April and May.

Besides the above short courses held at University Farm there were others held at Crookston and Morris as shown in reports from these schools and a short course for Boy Scout leaders at Itasca Park.

AGRICULTURAL EXTENSION WORK

During the year the Agricultural Extension Division had on its state staff 19 men and 8 women for full time and 3 men for part time; 86 county agents, 10 home demonstration agents, and 20 county club leaders, 10 institute workers employed by the week through the winter, and the regular office force.

Source of revenue.—The following indicates the sources and amount of funds available and expended for the work:

State appropriations for extension work in agriculture and home economics..	\$ 30,000.00
State appropriation for farmers' institutes.....	20,000.00
State appropriation for county extension work in agriculture and home economics	86,000.00
Federal Smith-Lever funds, regular.....	86,978.00
Federal Smith-Lever funds, supplementary.....	37,247.00
County appropriations for county work.....	148,865.00
County farm bureau contribution for county extension work.....	90,980.00
Federal funds received through States Relations Service, United States Department of Agriculture.....	17,581.00

Offices and equipment.—The Agricultural Extension Service is furnished offices in the Administration Building of the College of Agriculture, University of Minnesota, with light and heat free. The office equipment which has been purchased with funds appropriated by the state for extension work and from Federal Smith-Lever funds, consists of needed desks, chairs, filing cases, bookcases, typewriters, calculating machines, multigraphing outfit, stationery, etc.

The stereopticon slides that have been previously used by the division in supplying calls from county agents and others for such material, have been turned over to the Division of Visual Instruction, through which division such work is now handled.

Publications.—Owing to the mounting costs of printing, no Farmers' Library bulletins were printed during the year. In the Special and Circular series the following were printed:

Special Series, new:

No. 50. *Septic Tanks for Rural Homes*, by H. B. Roe, 20 pp., 25,000 edition.

Special Series, reprinted:

No. 45. *The Bread-Making Project*, by T. A. Erickson, 16 pp., 15,000.

No. 47. *The Pig Club Project*, by T. A. Erickson, 4 pp., 10,000.

No. 15. *Textiles*, by Marion Weller, 20 pp., 10,000.

In addition a considerable amount of miscellaneous printing was done, including:

Seed corn folder, 50,000.

Seed corn poster, 5,000.

Sow thistle poster, 5,000.

Farmers' Institute Annual.—*Farmers' Institute Annual*, No. 33, dealing with the subject of farm development on the cut-over timber lands, was published in an edition of 25,000 and was distributed at farmers' institutes and other farmers' meetings. The book was reduced in size this year, owing to the expense of printing, and contained only 160 pages, exclusive of cover, as against the 256 pages of previous annuals. The standards of the articles were maintained, however, and ample illustrations were used, making the book a valuable compendium to aid settlers in developing the cut-over farming region.

News service.—The news service includes the publication of a weekly *News Letter*, and the semi-monthly *University Farm Press News*, as well as the distribution of large numbers of special press items, sent either to all of the papers of the state or to the papers of a special section.

The *News Letter*, designed to keep the public informed, through the press, of the activities of the University Department of Agriculture, is sent to all of the periodicals of the state. It is usually printed on a multigraph machine, and goes out as second-class mail matter. Items from it are printed far and wide by the newspapers and other publications of Minnesota.

The *University Farm Press News* is a printed "clip sheet," printed on one side, containing five columns of usual newspaper width, fifteen inches long. The material which goes into this is instructional, the aim being to convey through the items published information which may be of aid to farmers and others in solving production problems. The articles published on this sheet are copied very largely by country weekly newspapers which maintain a farm news department, and of such papers there is a constantly increasing number in the state. One of the efforts of the work in publications has been to interest the press of the state in publishing more farm and rural news, and these efforts have been highly successful. Professor Bristow Adams, editor of the New York State College of Agriculture, Ithaca, New York, in the course of a recent visit to Minnesota, said that after a study of such departments in the papers of several states he was able to say truthfully that Minnesota papers were in the lead. Nowhere had he found the country press giving so much attention to matters of special interest to farmers and rural communities. This development has been brought about in part by personal visits on the part of the editor of publications to the editors of the state, through attendance at editorial meetings, and through an Editors' Short Course held every spring at University Farm. This short course has been attended year after year by one hundred or more editors, who have come together to study the practical problems of country newspaper publication, including, of course, the problem of printing farm news.

Interest on the part of country publishers in the work of the department has been heightened, also, by developing as rapidly as possible a special news service, through which, for example, an effort is made to keep local papers informed of the extra routine activities of students from their communities who are attending the University Department of Agriculture.

It is difficult to estimate with great accuracy the circulation of news and instructional items secured through the activities of the Office of Publications in coöperation with the Division of Agricultural Extension. It is not believed to be an exaggeration, however, to say that every month, through the coöperation of the press of the state, the University Department of Agriculture is reaching practically the entire citizenship of the state with information of value in promoting the prosperity and welfare of the whole public. For their coöperation and interest in development work of this kind the press of Minnesota deserves the highest praise. Such coöperation and interest is convincing evidence of an almost complete unanimity on the part of the publishers to put Minnesota in the very front rank in agriculture and of the satisfaction which may be derived from the highest type of rural life.

County agent and farm bureau work.—The year has witnessed a remarkable expansion of the farm bureau movement in Minnesota. Membership in county farm bureaus in the state has grown from 26,136 in 1918 to 30,516 in 1919, and to 46,299 on December 1, 1920. This membership becoming effective January 1, 1921, was 53,282. On May 31, 1921, the total farm bureau membership in the state was about 70,000. On June 1, 75 counties had completed their membership campaign and adopted the \$5 continuous membership plan. There were three counties planning to complete the increase of membership during June, leaving only eight counties that have not adopted the continuous membership plan, or reorganized the farm bureau on the enlarged basis.

Tho the enlargement of farm bureaus and the perfection of the State Farm Bureau Federation has been absorbing much time and attention of the entire county agent organization, the results achieved in the subject-matter project work have in most cases been practically maintained on the scale of achievement which characterized the work in the years 1918 and 1919, while it is noted that many new lines of activities have been introduced. The extended membership campaigns have magnified in the minds of many farmers the importance of state and national farm bureau federation work. This has temporarily drawn the attention of county farm bureau members away from agricultural extension work. One of the purposes, however, of the local organization plan being adopted in townships and communities, is more completely to vitalize the aims and secure more general performance of members in extension work. Township units have to date been organized in 1,162 townships out of 1,786, the approximate number in the state, and additional units are being formed daily.

Following the organization of township or community units local programs of work are being developed and as a result a better balance of understanding is prevailing as to the relations of the local program to county, state, and national phases of the movement.

The last session of the legislature enacted chapters 105 and 300 which affect county agent and farm bureau work in Minnesota. Chapter 105 prescribes a simpler procedure by which articles of incorporation of county farm bureaus may be amended. Chapter 300 changes the provisions of the farm bureau law as follows:

1. The state may apply not to exceed \$2,000 per county annually instead of only \$1,000 as formerly, in case more than one agent is employed. State appropriations, however, will not make this possible during the coming two years.
2. Boards of county commissioners may appropriate up to \$5,000 annually instead of only \$3,000.
3. Counties having more than 150 townships may appropriate annually \$25,000, which provision applies only to St. Louis County.
4. The minimum 100 farm bureau members required must be "farmer" members.

During the past year the office of the county agent leader has been called upon to extend considerable coöperation in the activities of the State Farm Bureau Federation.

Some of the outstanding achievements of the federation during the past year are: an educational campaign as to the farm bureau movement especially state and national phases; counties aided in reorganization of bureaus on the \$5 a year continuous membership plan; coöperative wool-marketing project operation with other interested agencies, resulting in 42 county wool pools being organized; a survey to consider fair wages for farm labor; an effort to eliminate fake stock-selling schemes; delegates sent to appear in important hearings and conferences pertaining to coöperative grain and livestock-marketing; St. Lawrence waterway and other projects promoted; Farm Bureau Day at the Minnesota State Fair; successful annual Farm Bureau Federation meetings; and a state agricultural program dealing mainly with legislative recommendations which to a very considerable extent were enacted into the laws of the state.

More recently the federation has given considerable attention to marketing problems and is aiding the organization of grain, livestock, and dairy-marketing projects.

The programs of work of the county farm bureaus and the achievements for the year have been summarized and compared and deductions made as a further contribution to the development of a state program of work in agriculture and home economics. A charting of this material indicates that the 82 coöperating bureaus of the state during 1920 worked on 1,191 projects, the grand total of all projects planned for the year being 1,273. In addition to farm projects, 26 counties included home economics activities in their programs and 71 counties included boys' and girls' club work. Fifty-eight counties published a *Farm Bureau News* or similar publication and 37 issued an exchange list.

The county agents' reports for the year ending December 1, 1920, indicate that

In 26 counties, 138 drainage systems were planned and adopted involving 17,378 acres.

In 45 counties, 240 soil acidity tests were made and 619 tons of limestone applied to acid soil.

In 29 counties, 784 farmers cooperated in treating 31,051 bushels of seed wheat.

In 29 counties, 1,143 farmers cooperated in treating 57,292 bushels of seed oats.

In 56 counties, 4,820 farmers cooperated in treating seed potatoes for disease control, the planting of 26,378 acres being involved.

In 72 counties, 1,026 farmers cooperated in growing 4,462 additional acres of alfalfa.

In 57 counties, 677 farmers cooperated in increasing acreages of sweet clover—6,402 acres.

In 43 counties, 588 farmers were assisted in securing 3,756 bushels of improved seed corn.

In 31 counties, 286 farmers were aided in securing 6,375 bushels of improved seed wheat.

In 28 counties, 226 farmers were aided in securing 5,480 bushels of improved seed oats.

In 44 counties, 643 farmers were aided in securing 14,391 bushels of improved seed rye.

In 41 counties, 115 farmers were aided in securing 32,000 bushels of improved seed potatoes.

In 71 counties, 1,220 registered bulls were secured.

In 59 counties, 1,885 registered cows were secured.

In 46 counties, 1,491 high grade cows were secured.

In 61 counties, 1,607 registered boars were secured.

In 27 counties, 619 cows were discarded as unprofitable as a result of cow-testing association work, 29 associations being in operation with 10,042 under test.

In 66 counties, 1,240 farmers were assisted in balancing rations for livestock and in 49 counties 1,201 silos were erected.

In 63 counties, poultry production practices were modified on the part of 1,821 farmers.

In 49 counties, 457 poultry culling demonstrations were held, 4,637 flocks being culled as a result, 55,361 birds being culled of which 13,863 were discarded as non-layers.

In 57 counties, 24,062 animals were tested for tuberculosis.

In 32 counties, 25,924 hogs were vaccinated for hog-cholera control.

In 47 counties, 2,018 farm account books were distributed.

In 20 counties, 245 farmers cooperated in completing livestock feed cost records.

In 31 counties, 1,291 farmers were assisted with income-tax reports.

In 74 counties, 8,023 farm laborers were supplied by the county agents or farm bureaus.

In 68 counties, it is reported that approximately 25 per cent of the cooperative organizations formed have been organized during the present year or preceding years through the assistance of county-agent or farm-bureau work.

In 46 counties, it is reported that the value of products sold or exchanged through farm-bureau service during 1920 including seed, livestock, and other products amounted to \$1,701,533.40.

In 35 counties, 195 cooperative associations which county agents and farm bureaus helped form in 1920, transacted a volume of business amounting to \$1,825,015, affecting a saving of \$110,209.

In 52 counties, the farm bureaus and county agents gave assistance to the work of 819 associations previously in operation which transacted a volume of business amounting to \$40,665,868, effecting a saving of \$1,603,383.

(Included in the two foregoing phases of coöperative organization work is the state-wide and regional coöperative marketing work promoted through the service, including the Twin City Milk Producers' Association doing \$4,000,000 worth of business annually and the development of the Minnesota Potato Exchange which handled 1,900 cars of potatoes in its first five months of service.)

In 18 counties, 45 water-supply systems for farm homes were planned and installed, also 36 sewerage-disposal systems, 93 lighting systems.

In 24 counties, plans for the reconstruction and remodeling of 57 farm homes were furnished.

In 25 counties, plans for the improvement of home grounds were made in 89 cases.

In 15 counties, labor-saving machinery was introduced in 109 homes.

In 19 counties, 76 household laborers were furnished.

In 15 counties, 528 homes were aided in reference to gardening.

In 82 counties coöperating, 37,893 farm visits were made by county agents and 85,162 office consultations occurred.

A grand total of 6,063 meetings were held during the year attended by 389,864 persons.

126,273 letters were written by county agents and 7,557 circular letters prepared, total circulation of latter being 539,928.

The annual cost of the work of the county agricultural agent as jointly employed by the United States Department of Agriculture, State College of Agriculture, counties, and county farm bureau associations, approximated \$300,000 for the year 1920.

Boys' and girls' club work.—This year boys' and girls' club work was part of the agricultural extension program in every county of Minnesota.

Short courses, educational trips, etc.—Four special short courses were held for club members and club leaders at University Farm, Morris, Crookston, and Mankato with a total enrolment of 928.

Six hundred eighty-six club members, county champions, in the different projects, were given free educational trips to the State Fair or to the State Horticultural Society meeting. The Junior Livestock Show was put on in coöperation with the Minnesota Livestock Breeders Association in November, to which three hundred twenty-five winners in the calf, lamb, and pig contests were given free trips.

Special features.—One of the special features emphasized has been boys' and girls' short courses and achievement days, during the past year by a great many counties. The short courses in the counties have been patterned after the short course given at University Farm in the spring. Blue Earth County held one of the most successful of these with an attendance of 400 club members and 40 club leaders. The short course was held for two days in the Normal School at Mankato.

Demonstration work.—The individual and team demonstrations have been emphasized the same as last year. The training of at least one demonstration team for every club has been urged by club leaders. As a result of this effort 319 canning demonstration teams were organized and trained with more than 700 public demonstrations in canning fruits, vegetables, and meats by the members of canning clubs. Three hundred twenty-two bread teams gave 650 demonstrations in the making of yeast breads and quick breads. Fifteen counties trained poultry teams and seven of these were sent to the State Fair for public demonstrations in the culling of flocks and other interesting features of the work.

The state champion bread team was represented by Redwood County at the Minnesota interstate contest, Sioux City, Iowa.

Boys' and girls' club work in Minnesota has been carried on under thirteen different home and farm demonstrations as indicated below:

Corn club demonstration
 Potato club demonstration
 Home garden club demonstration
 Home canning club demonstration
 Poultry club demonstration
 Baby beef club demonstration
 Pig club demonstration
 Dairy calf club demonstration
 Sheep club demonstration
 Bread club demonstration
 Sewing club demonstration
 Dairy stock-judging club demonstration
 General livestock-judging club demonstration

Summary of work for 1920:

Clubs organized.....	1,273
Total state enrolment.....	26,437
Total members reporting.....	13,034
Value of all products by members reporting.....	\$365,869.63
Cost of production.....	\$135,512.68
Net profit to members reporting.....	\$230,356.95
Demonstrations given by club members.....	4,818
Attendance	143,039
Demonstrations given by leaders.....	863
Attendance	69,234
Number of demonstration teams trained.....	617
Number of standard clubs.....	145

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

Farm-management demonstration.—Farm-management demonstration work has been continued along the following lines: first, construction and farm management through meetings; second, promotion of farm accounting; third, assisting county agents and farm bureaus to secure local demonstration material in farm management; fourth, giving assistance in coöperative marketing of wool; sixth, providing county agents with information as to cost of production investigations, and some time has been given to land leasing.

During the year 74 farm-management meetings were attended, with a total attendance of 3,700 people; 10 meetings were held to promote wool-marketing with an attendance of 132. Several meetings were held dealing with farm-accounting, and the work of distributing farm account books and, wherever possible, checking up farm records has been continued. A

number of circular letters have been prepared for county agents interpreting some phase of farm management or farm marketing for their ready use.

Extension work with women.—On July 1, 1920, the state staff consisted of the state leader, the assistant state leader, and specialists in nutrition, poultry, clothing, and general home economics. The household management specialist who had been granted a year's leave of absence January 1, 1920, resumed her work January 1, 1921. The specialists have developed definitely organized projects based on five lessons to be given at one-month intervals. When a home demonstration agent reported the project most desired by their women, the specialist in that line was assigned for three days a month for five months.

Counties not employing home demonstration agents but interested in home development were also assigned a specialist for three days a month for five months provided certain conditions were fulfilled.

The counties coöperating with the state office in this way were: Cass, Beltrami, Cottonwood, Fillmore, Waseca, Lyon, Pine, Blue Earth, Jackson, Caryer. Twelve other counties have made application for a five-month project.

The state leader and assistant state leader have divided their time between organizations and supervision.

Home demonstration agents.—Home demonstration work has been continued in Clay, Dakota, Morrison, Olmsted, and St. Louis counties and in the cities of Duluth, Minneapolis, and St. Paul. In October, 1920, Martin County employed a home demonstration agent. Anoka County resumed home demonstration work in March after a lapse of a year.

The agents have divided their time between work in organization and the carrying on of definite projects. An effort has been made to concentrate on not more than two projects during a given period.

Statistical report of projects carried on by state staff and home demonstration agents.—

Organization: This project dealt with the following phases: organization of a county for a home demonstration agent; organization for the work of a specialist; farm-bureau, county, township, and community organization—510 meetings, 21,908 reached.

Food and nutrition: The major part of this project consisted of nutrition work. Some time was given to food preservation and rural hot lunches—248 meetings, 8,358 reached.

The nutrition specialist contributes the following data:

Anti-constipation project: Fifty-five individuals report cure; 10 individuals report relief. These found that diet would help and feel that they can return to the "cure" when it is needed; 354 mothers report increased use of vegetables.

St. Paul states that 640,000 bottles were taken by children in the 39 schools where milk stations were maintained—this since October, 1920. Highest number during April—125,000.

Minneapolis reports an average of 13,000 half-pint bottles of milk taken daily in the 49 schools where milk stations were maintained. Highest number any one day—15,000.

Mothers throughout the counties where the project has been followed report less coffee and more milk.

Seventy-two teachers report more efficient pupils as a result of nutrition work.

Clothing: The gummed-tape dress form, short cuts in sewing-machine attachments, altering commercial patterns, cutting and fitting, and decorative touches comprised the main phases of this project. Six hundred eight meetings were held, 15,452 reached.

The clothing specialist reports the following saving: number dress forms made, 3,684; estimated saving on dress forms, \$55,560; other savings reported, \$2,982.96.

Poultry: Effort throughout the year was concentrated on culling, housing, feeding, diseases, marketing, incubation, and brooding—392 meetings, 7,264 reached.

The poultry specialist notes the following results:

Number of flocks culled during demonstrations and as result of demonstrations	1,060
Number of birds culled out	53,000
Saving in feed	\$79,500
Number of houses built and remodeled	42
Number of people adopting dry mash because of class instructions	76
Increased income from flocks because of dry mash feeding	\$3,375

NOTE: Average flock in Minnesota—50. Results that more birds in state are receiving dry mash. Average egg production for each bird in Minnesota—75. Estimated increase of egg production when dry mash is fed—33½ per cent. Estimated increase of egg production—7,500 dozen. Average price of eggs per dozen—45c.

Number of feed hoppers built following plan provided	79
Number of records kept on regulation cards	234
Number of farm visits made where information was requested as to care of flocks	127
Number of poultry clubs for women that have been organized in the state	23
Membership of clubs	420
Stock introduced for improvement of flock cockerels to head flocks	84
Settings of eggs obtained with idea of using chicks as foundation stock	234

An egg circle has been formed in Orchard Gardens with a membership of eighteen, and the eggs are being sent to a direct market twice a week. Each egg is stamped and packed in a carton and ten cents above local market price is being received.

A poultry-production contest is being carried on in St. Louis County and 87 people have entered. The contest ends September 1, and seven cash prizes have been offered.

Household management: The aim of this project was to get the average home-maker to study the problem of doing her work in either an easier, a shorter, or a more efficient way. A well-arranged kitchen sufficiently well-equipped to do efficiently the required work and a plan of work were the fundamentals—163 meetings, 6,444 reached.

The state specialist in household management reports the following interesting results of the work:

Forty-four women changed plans to save time and steps, allowing a few minutes at least for rest periods.

Ten have tried to utilize help of children to better advantage.

Ten have tried using a dish-drain and not wiping dishes and report it satisfactory and time saving.

Twelve report ball-bearing castors installed under wood-box or beds.

One remodeled a storage closet fitted with much-needed shelves.

One raised floor of storage closet to level of kitchen.

One changed bracket lamp to give better light on work table.

Twenty tables, cabinets, or wash benches raised to proper height.

Five devised methods to remedy sinks which were too low but could not be raised because of plumbing.

Six drop shelves installed.

One hundred twenty-nine fireless cookers made and used.

Two iceless ice-boxes made and used.

Twenty-three wheel trays installed.

Ten kitchen stools installed.

Thirteen rubber or shoe racks installed.

One electric mangle installed.

Two installed hose to reach from pump in the house to reservoir, thereby doing away with lifting pail of water.

Eight kitchens visited and equipment rearranged to save steps and strength.

Seventeen power washers installed.

Two water systems.

One furnace.

One screened porch.

One wash room.

Community activities: This heading covers such activities as girls' club work; community sings, recreation, county fairs, farm-bureau picnics, and the like—262 meetings, 23,122 reached.

Livestock and dairying.—The livestock and dairy extension service has been received with great interest throughout the state among the leaders in agricultural development. This is due largely to the change from grain to livestock and dairy farming. Therefore, the division has been handicapped on account of lack of men. Three men have been in active service throughout the year, taking charge of cow-testing associations, bull associations, assisting the county breed organizations in their development work, also taking care of the various phases of livestock production and marketing. There should be added to this department at least a veterinarian, with one additional livestock man, and a dairy specialist.

The work of this section has been closely affiliated with the state breed and breeders' associations and the state marketing organizations. The junior livestock work carried on by the boys' and girls' club leader, in cooperation with the Minnesota Livestock Breeders' Association, was one of the most valuable projects for the development of the livestock industry. These contestants are scattered throughout the state and have a very marked influence in their communities. Thirty-one counties participated in the baby-beef club work, with 711 contestants.

The hog and lamb project was developed by the boys' and girls' club department. Sixty-two counties have participated in hog-feeding with over 1,000 contestants; and the lamb contest was promoted in fifteen counties in northeastern Minnesota with 210 contestants. This section was instrumental in developing a state show where the highest winners in each county contest competed with each other for state honors, which has been a very valuable and popular feature of the work. A junior sale was held at South St. Paul following the show, where very satisfactory prices were received for the exhibition animals.

The dairy feeding project, as a state issue, was started in 1919. In 1920 twenty-six counties put on the dairy-calf feeding work with 686 contestants. In the fall of 1920, in connection with the Junior Livestock Show held at South St. Paul, the two calves standing highest in the local contests were placed in competition with each other.

Another junior project was that of livestock and dairy judging. A total of 48 county contests were held with these two projects, the Minnesota Livestock Breeders' Association offering liberal prizes in each county. This work has been a great educational feature in studying breed type and economical production by conformation. State contests were held and the highest winners were given a free trip to the National Dairy and International Livestock shows.

The Junior Livestock Show, which was the consummation of the year's efforts in dairy, livestock feeding, and judging work, was considered by outside authorities as being the most popular and well organized of any in the country. Over \$9,000 was spent in prizes and expenses of the contestants. A total of more than 3,000 boys and girls participated in these projects.

A member of the Extension Division has been secretary of the Minnesota Central Coöperative Shippers' Association since its organization. Some time has been spent in organizing and reorganizing local livestock shipping associations. This work has been developed by the Extension Division and at the present time nearly 80 per cent of the livestock shipped into South St. Paul is marketed through coöperative shipping associations. This has resulted in a saving of approximately 50 cents per hundred weight on nearly 40,000 cars. As a result of this successful coöperative movement, a coöperative livestock marketing association has been organized for the terminal market in order more economically to market the livestock from the local coöperative shipping associations.

The Extension Division and the Minnesota Livestock Breeders' Association have coöperated in organizing county breed and breeders' associations in connection with the county agents. Assistance has been given in sending speakers to 45 county meetings. A program of work is usually presented for these organizations to follow and assistance offered for the carrying out of these various phases of work. The state breed associations have been assisted in their work wherever possible. A member of the extension staff has been secretary of one of these organizations and put on a very successful state sale.

This section has made all arrangements to furnish livestock judges for more than 60 county fairs, these men being furnished by the Extension Division, the county agent staff, and the teaching staff of the Animal Husbandry and Dairy divisions. Members of the staff have been called out of the state, attending farmers' short courses, in four states, have acted as judges of livestock at five state and national shows. The National Farm Bureau Federation has called for the services of a member of this staff through appointment to the National Livestock Marketing Committee of Fifteen, to outline national plans for the livestock industry.

The hog pasture project has been given able assistance by a member of the staff in fourteen counties. Forty-one demonstrations were held through the efforts of the county agents, with the assistance of the extension staff. Similar projects are under way for 1921. Our livestock specialist has attended baby-beef tours in ten counties, in each case visiting from 10 to 15 farms where hogs and baby-beef calves were on feed, giving instructions on better methods of feeding and management. A colt show project is now being developed by the Minnesota Livestock Breeders' Association and the Extension Division in twelve counties. Prizes are offered by the state association. This is giving a greatly added stimulus to horse production in the state.

The marketing of wool has received attention and the wool-pooling project developed in 26 counties in coöperation with the Farm Bureau Federation. Wool was pooled at the National Wool Warehouse, Chicago. This project is inaugurated for 1921 and will be carried on in nearly all sections.

Cow-testing association work has been stimulated the past year as good men have been more easily procured as testers than in the past. Twenty associations have been operating with 8,156 cows. Excellent results have been obtained and about 619 cows have been eliminated. Assistance has also been given in the purchase of dairy calves, 105 having been placed in various communities. Special work has been done with the cow testers. Three conferences have been held discussing the latest information on association management.

Bull associations have been given special attention with the assistance of the county agents in the northeastern part of the state. After the forest fires of 1919, a special campaign for purebred sires was put on. The breeders of Holstein and Guernsey cattle furnished 52 bulls without interest for two years. Forty-one of these have been organized into breeding blocks where a permanent improvement of dairy stock will be brought about. One man should be spending full time on this project to assist in the organization of new associations, stimulating old ones for better conditions, and the development of cow-testing associations in these breeding blocks.

The annual meeting of the Minnesota Livestock Breeders' Association and nine affiliated organizations met at University Farm the first week in January. These meetings were carried on with the assistance and direction of this department. Nearly 2,000 livestock and dairy breeders were in

attendance during the three days. Outside speakers of prominence were called in to discuss the vital problems confronting livestock producers.

Coöperative creameries.—During the past two years, work with the coöperative creameries has been directed with the object of getting the creameries to coöperate with one another for the standardization of Minnesota coöperative creamery butter and the general upbuilding of the coöperative creamery business. To this end the creameries have recently organized a state-wide association—Minnesota Coöperative Creameries' Association, Inc. This may be considered the most important step taken by the creameries in coöperation since they first organized.

Work with the coöperative creameries during the past year shows that the 600 coöperative creameries of the state manufactured between ninety and one hundred million pounds of butter. Their gross business in butter amounted to nearly sixty million dollars.

Notwithstanding the fact that the price of nearly all farm products was greatly reduced in 1920, the coöperative creameries paid a price for butterfat equal to the price paid in 1919. The average net price paid for butterfat for the year was approximately 65 cents per pound.

During the past year greater effort than ever before was put forth by the coöperative creameries to improve the quality of butter made. Improvement was undertaken by means of cream grading and paying for cream according to quality. This section has urged this movement by monthly letters to all of the coöperative creameries of the state.

The monthly letters to the creameries kept under consideration, not only the quality of butter, but the different factors that influence the coöperative creamery business, such as the amount of butterfat received, the amount of butter made, and the markets to which the butter was shipped.

Data received from the creameries shows the average amount of butterfat received per creamery to be 120,000 pounds for the year. Creameries that received less than 120,000 pounds of butterfat during the year were less successful in paying a high price than the creameries that received over 120,000 pounds.

The coöperative cheese factories of the state have also organized a state association during the past year.

For the first time in the history of Minnesota dairying, there was serious competition during the past year from foreign dairy products and during the past few years there has grown up serious competition from imitation dairy products. The coöperative creameries and cheese factories of Minnesota have organized state-wide associations at an opportune time to meet this competition and their thirty years of experience in coöperation will aid them in meeting this competition successfully.

Poultry extension work.—Poultry extension work during the year has been conducted under two sections of the extension service. The general poultry work has been handled by Mr. Chapman, who devoted full time to the work, and Mr. C. E. Brown, in Crookston, who devoted half time to the work.

The other branch of poultry extension work has been handled by Miss Campbell under the office of extension work with women. The object of dividing this work has been a desire to connect the extension work with women with some branch of work that will tend to increase the income of farm women. Most of the extension work with women having to do with better living really requires expenditure of money rather than earning of money and we have felt that we must connect with this branch of the work something that has to do with increasing income so that we may better justify home economics extension work.

During the year Mr. Chapman and Mr. Brown conducted 442 poultry culling demonstrations at which 9,840 people were in attendance. They gave 142 lectures on poultry, total attendance 10,090. They had charge of boys' and girls' poultry work at the State Fair at which 21 boys and girls representing 7 teams of 3 each took part. They attended and took part in 23 farmers' institutes, 4 poultry short courses, judged at 21 poultry shows, and 2 county fairs. They held 23 conferences relative to poultry work in the state, attended 32 farmers' clubs, 9 boys' and girls' clubs, and presented poultry work in 19 high and graded schools.

Close contact has been maintained with the poultry demonstration community at Barnum, where the production of poultry and eggs has reached its highest development in the state. A start has been made in establishing similar county poultry demonstration communities at Walker, Cass County; Kingston, Meeker County; Long Lake, Hennepin County; and Orchard Gardens, Dakota County.

This section of the work has also given a great deal of help through correspondence and through circulars to the various county poultry associations enabling them to put on county poultry shows, in which work they are materially aided through special state appropriations for such shows. A weekly news letter on poultry work has been supplied to county agents, officers of county poultry association, and teachers of agriculture in high schools.

Poultry extension work with women is reported under extension work with women.

Horticultural work.—Horticultural extension activities were limited to demonstration in pruning and spraying. In 1920, twenty demonstrations were held in coöperation with the county agricultural agents and agricultural teachers in central and southern Minnesota. In 1921, forty demonstrations were held in thirteen counties. Increased interest is being taken in controlling orchard pests.

Farmers' clubs.—Work with farmers' clubs has been continued. There are approximately 1,000 farmers' clubs in the state now. An attempt is made to keep in touch with these through the county agricultural agents and give them every assistance possible in maintaining worth-while programs and meetings.

During the year the problem has arisen of the proper relationship between local farmers' clubs and local farm bureau units. In many cases the two are combined, but even if the local farm bureau unit in some

counties does supersede the farmers' club the work of the farm bureau unit will be just the same as that done by the farmers' clubs, so we shall continue to have farmers' clubs active local units organized for social, educational, and business purposes,

Plant pathology.—During the months of July and August of this fiscal year Mr. Frolik, who was then extension specialist in plant pest control work, spent considerable time holding field meetings to acquaint growers with the common potato pests and control measures for same.

Mr. Raymond Rose took up the work as specialist in plant pest control during the latter part of September and on account of the lateness of the season, was unable to accomplish much in the way of demonstrations during that fall season.

Potato improvement.—An effort has been made to get potato growers to pay more attention to quality in their seed stock. The value of standard varieties, seed treatment, seed selection, spraying, and seed plots has been especially emphasized. Sixty-seven potato meetings with a total attendance of 1,152 were conducted in twelve counties.

Timely news articles have been sent out from time to time on different phases of potato pest control.

Three potato spraying and dusting plots have been established in different parts of the state to demonstrate the value of insecticides and fungicides for potatoes and to compare dusting methods with liquid sprays. Official seed plots have been designated in various counties for summer meetings to acquaint growers with field symptoms of various diseases.

Estimates by county agents in 24 counties indicate that there will be 1,129 potato seed plots in their counties this year as compared with 483 for 1920.

Cereal diseases.—Two demonstrations of the hot-water method for controlling loose smut of wheat, have been conducted in a section of the state where the disease caused a loss of 25 per cent of the crop last year. The treated grain has been planted in demonstration seed plots and the results will be checked over at the end of the season.

Miscellaneous crop pests.—Numerous inquiries by mail and telephone have been answered on the control of various crop pests. Government bulletins and circulars have been sent out in reply to requests for literature on various crop diseases.

Soils.—The principal projects receiving attention during the year 1919-20 were fertilizer demonstrations on potatoes, demonstrations with acid phosphate in Pennington County on mineral soil, and demonstrations with acid phosphate on peat soils, and the liming demonstrations with alfalfa have received some attention.

Demonstrations with commercial fertilizers on potatoes were conducted in coöperation with twenty-seven farmers on 31 different sets of plots in the following counties: Anoka, Clay, Hennepin, Isanti, Mille Lacs, Ottertail, Sherburne, and Wadena.

The American Agricultural Chemical Company coöperated with the farmers, the county agricultural agents, and the Agricultural Experiment

Station in these demonstrations. A representative of the Extension Division assisted in laying out the plots, applying the fertilizer, and in harvesting the potatoes so as to determine the yields. The extension representative also visited some of the fields during the growing season to see what effects of the fertilizers could be observed.

The yields obtained on the various plots, untreated, manured, and fertilized, demonstrate that commercial fertilizers can be used in Minnesota with potatoes at least to supplement the supply of manure. The increased yield, apparently due to the fertilizer applied at the rate of 800 to 1,000 pounds per acre, varied from about 20 bushels to 136 bushels per acre on land that had not been manured for the 1920 crop and from 19 bushels to 113 bushels on land that had been manured for the 1920 crop. The fertilizer cost per bushel of increase varied from 20 cents to \$2.13. The results of the demonstrations will be made available for those interested in the use of fertilizers with potatoes. Some potato growers are finding it more and more difficult to obtain sufficient manure for all their land and are very much interested in the use of commercial fertilizers either as a supplement to the manure available or as a substitute for manure which they have been buying.

In Pennington County the county agent, and the Extension Division coöperated with twenty-one farmers, in conducting demonstrations with acid phosphate on mineral soil in fields along the Elwell Road east of Thief River Falls. The county agent and a representative of the Extension Division laid out and marked the plots, applied the acid phosphate, kept the plots under observation during the summer and determined the yields on a number of the fields. Wheat was grown on the greater number of the plots, barley was sown on two sets, oats on two, and rye on two.

With wheat there was a variation from no effect to an increase of 10.6 bushels per acre. In the case of oats the increase due to the phosphate varied from 10.5 to 23.5 bushels per acre. The two fields in barley showed no effect and with rye there was apparently an increase of 4.5 to 8.0 bushels per acre.

The demonstrations showed that with fair prices for grain profitable crop increases can be obtained by using acid phosphate on a number of the farms where the demonstrations were conducted and probably on many adjacent farms.

The plots will be kept under observation another season at least and probably the yields determined in some cases.

The results of the demonstrations have been made available and are being brought to the attention of the farmers in the county.

The 1919 demonstrations with phosphate on peat soils in the northwestern counties of the state have been kept under observation and a limited number of new demonstrations have been conducted.

Most of the peat land farmers in the state have met failure after failure in trying to grow crops on peat soils. Many of them can not buy other farms and the acid phosphate demonstrations in the northwestern part of the state bring to their attention a method whereby at least some of the

peat soils can be made to produce profitable crops. It appears that this is a line of work which should be continued and extended.

As a result of the experiments with phosphate on peat soils at Golden Valley and the demonstrations on the farms referred to above a large number of farmers in northwestern Minnesota are now using phosphate on both common mineral soil and peat. Several carloads of phosphate have been used this season.

The liming demonstrations with alfalfa have received some attention, but no new demonstrations have been started. A number of the fields were visited during the summer by the extension representative, about twenty in all, and results noted. The results of the demonstrations are frequently used when considering what recommendations to make to farmers seeking information about liming.

THE EXPERIMENT STATION

The work of the experiment station has been intensified in many directions during the year. The return of the station men from war duties and from service in other lines has made it possible again to give full attention to experiment station work. An attempt has been made to bring about coöperation of effort and to eliminate duplication. There is a growing tendency for the organization of larger projects, including two or more divisions on a coöperative agreement with the workers in each division contributing from their field of science. It is believed that this method of handling research work will result in the accumulation of more accurate knowledge and in more rapidly and completely solving the problems in hand.

Experiment station staff meetings held monthly are devoted to a discussion of the work under way in the various divisions and coöperatively; to discussions of important movements in the agricultural research field in other states and in the Department of Agriculture. Some attention has also been given to a study of the agriculture of the state as a whole with a view to putting before the experiment station workers the problems of the farmers. It is hoped also that such discussions will give an insight into the research field and that it may permit the development of research work which will have a direct bearing on the problems of the farmers. These monthly meetings stimulate discussion among the workers which develops in them an understanding of the work of other divisions and of the workers in other fields and appears to lead to whole-hearted coöperative effort. Special attention has been given to the development of the research spirit, to the perfection of methods, and to accuracy in investigations, all of which tends to eliminate mistakes and incorrect conclusions. A knowledge of the activities of the central station can best be obtained by reviewing the projects which have been approved and on which work is being done.

There are in effect at the present time 138 projects on which investigations of more or less importance are being actively pursued. Six projects

have been completed or discontinued during the year. Twenty-four new projects have been initiated. The active projects are divided into four classes, namely: (1) research, (2) experimental, (3) demonstration and survey, (4) regulatory. The research projects are those organized to cover a long period of time and to deal with the fundamental sciences underlying agriculture. Those classed as experimental usually cover shorter periods of time and relate to questions arising out of general practices about which information is needed or doubt has been raised. The demonstration and survey projects are calculated to serve a useful purpose in carrying to the farmers or others the results of the experimental and research work. The regulatory projects are being eliminated as rapidly as it is possible to transfer this sort of work to the State Department of Agriculture. The regulatory projects now carried by the experiment station are only such as are assigned to it by past legislation.

Of the 138 projects now in effect, 68 may be classed as research, 40 as experimental, 25 as demonstration and survey, and 5 as regulatory. It should be stated in this connection that frequently the investigation called for in the project leads into two or more fields and thus the classification is only approximate. The number of projects carried through the year is slightly larger than the number carried in previous years. This is due to the fact that one or two divisions of the station which have not previously been doing much investigational work have inaugurated a number of projects. The investigations of the soils department have been expanded considerably by special state appropriations for further studies of the peat land soils and the sandy land soils of the state. This work has also been undertaken on the low-lime upland soils in southeastern Minnesota. The soils division of the station is also to participate in a reconnaissance soil survey in the northern part of the state in cooperation with the State Department of Agriculture. The legislature also charged the biochemistry division with the responsibility for investigations in the manufacture of syrup from sweet cornstalks. Various other lines of activity have been suggested and required from other divisions so that the work of the experiment station, as a whole, has been somewhat increased. The station has been considerably handicapped by high wages for labor during the early part of the year and also by high prices for supplies. It was necessary in some divisions requiring imported chemicals and apparatus to limit the amount of work done and in some cases temporarily to discontinue work on important projects.

Encouragement is given the staff members in concentrating on a few projects with the view to completing them as rapidly as possible. It is believed that this leads to the accomplishment of more work and also that the publication of results will be more timely and better received. It should be stated in this connection that there are a large number of research projects which have been organized with the expectation that they will cover a long period of time and on which work must be continued indefinitely. As far as possible, however, the research is organized with

definite objectives in view and with the purpose of bringing the investigations to fruition as rapidly as possible.

The results of investigations have accumulated rapidly. On account of lack of funds it has been impossible to publish a considerable amount of bulletin material which has been prepared. The station is continuing to use the columns of research journals and scientific periodicals for the publication of the results of special studies and reports bearing on the investigational work. The results of the completed projects are published in the experiment station bulletins. During the year one bulletin only has been approved for publication in the regular Experiment Station Series. There have been three reprints. Two bulletins have been approved for publication in the newly established Technical Series. Fifty-six articles have been approved for publication in the Journal Series. The members of the station staff prepare numerous articles and papers for the public press. During the year fifty-nine articles have been prepared and published.

The funds expended for experiment station work amounted to a total of \$249,023. Of this the Federal government provides under the Hatch Act, \$15,000, and under the Adams Act, \$15,000. The balance is furnished from general University support and certain revolving or special funds. The annual report of the experiment station to the United States Department of Agriculture shows the distribution of these funds among the various divisions of the experiment station and the amounts expended by each division. It also covers fully the progress on the various projects and states in a brief manner the most important findings made during the year. Extracts are therefore omitted from this report.

The substations.—The investigational work at each of the substations has been carried on along the lines followed during the past years. It is the aim of the substations to solve the problems particularly significant in the regions in which the stations are located. There is therefore at each substation a number of local or regional projects on which work is being done. The substations also serve as supplementary trial stations for much of the work originated at the central station. Close coöperation exists between the workers at the central station and the substations, greatly to the benefit of both. Projects have been originated and plans perfected for coöperative testing of field and garden crops, for the distribution of important seed stocks and for livestock investigations and management. It has been necessary to establish some special trial stations in various parts of the state for the study of varieties of grain and special cultural methods. The peat land tracts and the sandy land tracts are used as far as possible in this connection. The work done in the past has been very useful in developing types of farming which are more certain on these types of soil. The projects of a local nature at each substation are handled by the superintendent in charge. Investigational projects of the substations are organized in the same way as those at the central station. The leaders are named at each substation and the parties from the central station coöperating are included. The director of the station and chiefs of the divisions,

THE PRESIDENT'S REPORT

together with the superintendents of the substations, have during the past year brought about much improvement in the methods of work at the substations and have standardized the methods of investigation so that the publications of the substations and the central station agree at least in their general features.

Respectfully submitted,

R. W. THATCHER, *Dean and Director*

NOTE: The foregoing report was prepared after I severed my connection with the University by Dr. E. M. Freeman, dean of the College of Agriculture, Forestry, and Home Economics, from the material presented by the dean of the college, the vice-director of the experiment station, the director of agricultural extension work, and the principals of the schools of agriculture. I have personally gone over the report as finally compiled by Dr. Freeman, and find it to be a thoroly satisfactory review of the work of the year, and am in hearty accord with the statements and recommendations made by the administrative officers who have prepared the report. I wish to acknowledge my indebtedness to these officers for the service they have rendered in preparing this report.

THE LAW SCHOOL

To the President of the University:

SIR: I have the honor to submit the following report of the work of the Law School during the session of 1920-21.

Attendance.—The total registration of the year was 269, an increase of 3 over the preceding year. Table I shows the registration by classes and the proportion of regular and special students, as compared with 1919-20. The entering class was considerably smaller but this was more than compensated for by the larger registration in the second-year class. The best index of the growth of the school is the number of the entering class. This is shown by Table II, covering the period from 1911, when the entrance requirement was raised to two years of college work, down to the present time. The table shows a slow growth until interrupted by the war. The entering class of 1919-20 was larger than would have normally been expected, probably due to retardation of the war. Altho the entering class this year was smaller, the class of 1921-22 will probably exceed that of 1919-20, as the number of students registered in the sophomore pre-legal course is almost double that of any preceding year. The effect of the great increase in attendance in the colleges and universities will only begin to be felt in the Law School during the coming year, and the full effect of the increase will not be had until 1924-25.

Preliminary education of students.—The entering class falls into three well defined groups: academic seniors and graduates, students having the two years of college work required for regular standing, and special students who have less than two years of college work, many of whom have not gone beyond high school. Table III shows the relative scholarship standing of these several groups. The percentage of failures and conditions to the number of examinations held, for example, is 10 per cent of the first group, 24 per cent of the second, and 31 per cent of the third, while the percentage of successful students to the total enrolment in each group is 66 per cent, 44 per cent, and 26 per cent respectively. These results show the superior attainments of the better prepared students and confirm past observations. The scholarship record here presented, combined with the growing demand on the limited facilities of the school, have led the faculty to take certain steps towards getting better prepared entering students.

Without raising the entrance requirements, efforts are being made to induce students to extend their preliminary education. The University offers a combined six-year course in Arts and Law, leading to the two degrees of Bachelor of Arts and Bachelor of Laws. Students from other colleges can not avail themselves of this course unless they transfer to the University of Minnesota at the end of their second year in Arts. The tendency of the students who make the transfer is to go at once into the Law School. During the year the school invited the degree-conferring colleges of the state to cooperate with the Law School in offering this com-

bined six-year course. Three colleges, St. Thomas, Hamline, and Macalester, have agreed to offer it. It is hoped that the inducement of the Arts degree will lead some students who would have transferred to the Law School at the end of the second year, to remain in their colleges for an additional year of preparation. Many excellent students came from the colleges of the state, and the University Law School is pleased to stand in the same relation to these colleges as to the College of Science, Literature, and the Arts of the University.

TABLE I. REGISTRATION

Class	REGULAR		SPECIAL		TOTAL	
	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21
First year	90	73	57	46	147	119
Second year	46	60	19	30	65	90
Third year	51	52	2	8	53	60
Unclassed .....	..	..	..	..	1	..
Totals					266	269

Students in the University are being urged to remain longer in the College of Science, Literature, and the Arts. An address at the beginning of the school year led a number of students who had registered in the Law School to transfer back to the College of Science, Literature, and the Arts, for further preparation. An assembly of pre-legal students was called in the spring term with the same object in view, which has evidently been productive of good results. The faculty believes that much can be accomplished along this line by competent advice.

Table II shows that an average of about 40 per cent of the entering classes are special students. The admission of special students is at the discretion of the faculty, and it has now definitely adopted the policy of scrutinizing very carefully the qualifications of these applicants for admission. The tendency is to admit as special students only those who can give evidence of superior natural ability.

TABLE II. ENTERING CLASSES (1911-1921)

YEAR	REGULAR	No.	SPECIALS		TOTAL
			PER CENT OF TOTAL		
1911-12	31	44	59%		75
1912-13	55	27	33%		82
1913-14	44	30	40%		74
1914-15	51	29	36%		80
1915-16	61	31	34%		92
1916-17	68	44	39%		112
1917-18	42	24	36%		66
1918-19	45	15	25%		60
1919-20	90	57	39%		147
1920-21	73	46	39%		119

TABLE III. PRELIMINARY TRAINING AND SCHOLARSHIP
(FIRST YEAR CLASS)

	REGULAR		SPECIAL
	Acad. seniors and graduates	Having two years of college	Less than two years of college
1. Total enrolment	24	49	46
2. Number taking examinations....	23	48	32
3. Number passing all examinations	16	22	12
4. Number delinquent in three or more subjects	1	12	11
5. Per cent of failures and condi- tions to examinations taken..	10%	24%	31%
6. Per cent of successful students to total enrolment.....	66%	44%	26%

Ex-service men.—Under the resolution of the Board of Regents, which allowed as a qualification for regular standing in the Law School the substitution of a certain amount of military service for one year of academic training, 13 returned soldiers were this year admitted who had not completed the regularly required two years of collegiate work. There was also a number of returned soldiers admitted as special students who were lacking the one year of college work required for regular standing, even the requirement of a complete high-school education having been dispensed with in at least one of these cases. Of the returned soldiers 21 were under the Federal Vocational Training Board. Every consideration possible has been given to these disabled men and it is gratifying to report that a large proportion of them have made excellent progress in their studies.

Summer Session.—The Law School offered six weeks of summer instruction for the first time in 1919. A full quarter of instruction was given in 1920 and is being given again this year. This instruction was first offered to enable returned service men to make up time lost. It was continued last summer primarily to provide facilities for men under the Federal Vocational Training Board who are required to study throughout the year. In the notice of the present session it was stated that attendance at the Summer Session could not be used hereafter to lessen the period of residence in the school, but could be available only to supplement the Law School course or lighten the burden of the regular session. The faculty expected that this notice would reduce the attendance to a minimum, but the attendance, which was 39 in the session of 1919, and 29 in the session of 1920, has increased this year to 58, of whom only 11 are under the Federal Vocational Training Board. This is more surprising because no work has been offered for beginning students but the course was restricted to those who have already completed one year of law school work. It was not the intention of the faculty to continue summer instruction in law after the present year but the increased registration this year may necessitate reconsideration.

The first consideration of the faculty is to provide the best standard course during the regular session that is possible with the resources at its command. Experience proves the desirability of conducting the Law School on the year basis, admitting students only at the beginning of the year. For law, at least, it is better to teach several subjects for two or three hours a week each through the year, than to teach fewer subjects the hours necessary to complete them in a quarter and then drop them. But this plan requires that students be admitted only at the beginning of the academic year and that they remain in school through three entire academic years. Any sacrifice of these considerations, important to the great body of students, for the convenience of those who might wish to shorten their Law School residence by one or two quarters, would not be justified. The faculty is consequently unwilling to allow the summer instruction to lessen the period of residence, but if a considerable number of students desire summer instruction to enable them to supplement the regular Law School course or to enable those who are employed to lighten their work in the regular session in order to do it more effectively, the faculty will be disposed to endeavor to provide the instruction desired.

Employed students.—The Law School tries to encourage employed students who are seeking adequately to qualify themselves for the profession. This class of student, however, presents a problem. There is a tendency on the part of such students to attempt more work in the school than they can successfully carry. A considerable proportion of the failures and conditions received are doubtless due to excessive burdens which these students are carrying. The better night schools are now requiring four years of study for a degree. The average student in the University Law School who has substantial outside employment can not hope successfully to accomplish the Law School course in three years. The attempt to do so is often disastrous, resulting in the student failing in all or almost all of his subjects and losing credit for the entire year or being dropped from the school. Every effort is being made by the faculty to induce such students to carry less work but they sometimes conceal their outside burdens and go on with the full course in the hope that they may struggle through in some fashion. Such students should extend their course over four or more years. The action of the Board of Regents in reducing the fees for part-time students will enable them to extend the period of study without large additional cost for tuition. The faculty wishes it to become widely known that students who have to earn their own way through school may have the advantages of the University Law School training, provided they are willing to extend their work over a sufficient period of time to enable them to fit themselves for the profession. For this standard the school must remain firm.

Scholarship.—The work done during the year has been of a very gratifying character. There have been evidences of a revival of interest in study, which has not been manifest since before the war. While the percentage of successful students is not so large as we should wish, these students have done work of exceptional quality. Table IV shows the percentage of successful students to the total enrolment and the percentage of conditions and

failures to the total examinations taken. Those students who pass successfully all examinations, as shown numerically in item 3, are deemed successful students, while those who are delinquent in three or more subjects, as shown in item 5, are to be deemed failures. Table V shows the failures and conditions in the several classes. The improvement in the second and third year classes is most marked. The large proportion of conditions and failures shown by these tables is made up of several groups: first, students lacking the natural ability necessary for the study of law; second, students lacking the preparation necessary to maintain the required standard; third, students whose outside employment is too burdensome to enable them to carry on the work in the Law School successfully; fourth, a considerable group of students that does not realize the difficulty of the subject and does not apply itself; and fifth, some students who are seeking a smattering of law for business purposes who forget that the only standard in the Law School is that required for the strictly professional course.

TABLE IV. SCHOLARSHIP

	FIRST YEAR	SECOND YEAR	THIRD YEAR
1. Total enrolment	119	90	60
2. Number taking examinations	103	89	59
3. Number passing all examinations.....	50	54	50
4. Number delinquent in one subject only..	16	22	6
5. Number delinquent in three or more subjects	24	8	0
6. Percentage of conditions and failures to total examinations	23%	10%	3%
7. Percentage of successful students to total enrolment	42%	60%	84%

TABLE V. CONDITIONS, FAILURES, AND INCOMPLETES

	REGULAR	SPECIAL	TOTAL
First year class			153
Conditions	72	46	118
Failures	12	15	27
Incompletes	4	4	8
Second year class			67
Conditions	37	23	60
Failures	3	3	6
Incompletes	1	0	1
Third year class			13
Conditions	10	3	13
Failures	0	0	0
Incompletes	0	0	0

Minnesota Law Review.—The standard of the *Minnesota Law Review* has been fully maintained during this, its fifth year. The quality and quantity of the student work has unquestionably excelled that of any previous year. It is the testimony of students who go out of school that the work done on the *Law Review* has been an invaluable part of their course. It is an excellent thing that about a score of the ablest students in the school should voluntarily, without any reward either in the way of credits or pecuniary compensation, devote many hours each week to study, research, and writing on special live topics of the law suggested by recent decisions. The *Law Review* is rapidly becoming one of the most valuable compendiums of the law of the state. But even more valuable is the scholarly interest in the law which it arouses in this group of excellent students. This work, under the direction of the editor, Professor Henry J. Fletcher, is one of the best courses in research that could be devised. The financial standing of the *Review* continues on a sound basis, thanks to the excellent business acumen of Professor James Paige, the business manager. While the University of Wisconsin pays \$2,500 for the publication of four issues of its law quarterly, and the University of Iowa had increased the appropriation for its law bulletin, Minnesota has continued successfully to publish seven issues per year of its *Law Review* without any direct contribution whatever by the University, and with a surplus at the end of 1920-21 of over \$400.

Library.—During the present session there were added to the library 3,203 volumes as compared with 1,419 in 1919-20, 673 in 1918-19, 1,967 in 1917-18, 1,144 in 1916-17, 1,639 in 1915-16. During the year many of the duplicate casebooks purchased when textbooks were loaned to students, were sold and library books for the permanent collection were bought with the proceeds, thereby making the accessions for the year above the average for the past five years. The total number of volumes in the law library at the close of the session was 33,701 or about double the number in the library when the present librarian took charge in September, 1912. The balcony constructed in the reading-room in the summer of 1920 to furnish additional space for books, has been filled by the accessions during the present session. Several hundred volumes are stored in the basement and as we are at the end of our resources for the storage of books in the reading-room and stackroom, future accessions will have to be stored uselessly in the basement.

Adverting to the probable growth of the school mentioned under "Attendance," the lack of reading-room space also becomes a question of most serious consideration. The work on the *Minnesota Law Review* has increased the use of the library very greatly. Furthermore there has been a large increase in the number of students from the Business School who use the law library reading-room. During the past year there were occasions when twenty students might be seen standing about the reading-room with no seats available. What will the condition be if registration increases, as it probably will, in the next three years to over four hundred students? This leads to the matter adverted to in previous reports of a new building.

New building.—The necessity for a new building has been so often and so forcefully put in the reports of the last several years that I will merely

summarize a few of the arguments here: a valuable library maintained in a most inflammable building; shelf space for the library utterly exhausted; reading-room space already inadequate; classrooms too small and most deficiently ventilated. A law school is not an expensive unit of a university. The students pay an unusually large part of the cost of maintaining their school. It is difficult to make comparisons but it is scarcely believable that any other department in the University is in greater need of improved facilities for the conduct of its work than the Law School, and indeed if the school continues to grow a condition will be reached where satisfactory work will not only be difficult but practically impossible.

Faculty.—The resignation of William R. Vance, dean and professor of law, became effective at the close of the academic year, 1919-20. During eight years' incumbency Dean Vance made a large contribution to the school as an administrator and teacher. His ability, culture, and personality made their impression on the professional work of the school and on the ideals and aspirations of the students. His work for the improvement of the administration of justice in the state was also fruitful. To him is largely due the conciliation court of Minneapolis, and in some measure, an awakened sense of public responsibility on the part of the bar.

Henry W. Ballantine, formerly dean of the Law School of the University of Illinois, was appointed to the vacant professorship. Professor Ballantine came to the school with a reputation as a legal scholar and stimulating teacher, which he has fully maintained. His work here has won the enthusiastic approval of the whole school.

Judge Homer B. Dibell, of the Supreme Court of Minnesota, continued to give his valuable courses on Real Property and Mortgages as usual without compensation. The school is also indebted to Judge Bert Fesler, of Duluth, for an excellent course of lectures on Legal Ethics, which he has given the last three years, without charge for his services.

For the next season the teaching force has been strengthened by the appointment of George E. Osborne as assistant professor of law. He holds the degrees of B.A. from the University of California, and LL.B. and S.J.D. from Harvard College. He was president of the Editorial Board of the *Harvard Law Review* in 1919-20 and assistant professor of law and editor of the *Law Quarterly* in West Virginia University in 1920-21.

Of the full-time faculty in the Law School in 1916-17 but two remain. The loss from this change in personnel is very great. The Law School faculty should contribute to the improvement of the law of the state. It is obviously impossible for a faculty to accomplish anything along this line if by the time they have secured a grasp of their subjects and are reasonably familiar with the peculiarities of the state law they are to be lost to the school. It is to the highest interest of the state that conditions in the University Law School be such as to secure and to hold a group of the ablest men that may be had in the profession. The students in law schools are able and mature and demand a high type of instruction. They are, moreover, certain to be leaders of public opinion and in public action in the

coming generation. No work in the profession is of greater importance than the training of these men. Both for their direct contribution to the law and for the training of the future leaders in the government of the state, the University Law School requires more permanency in its faculty than it has had in the past few years.

Respectfully submitted,

EVERETT FRASER, *Dean*

THE MEDICAL SCHOOL

To the President of the University:

SIR: During the year a committee appointed by the Medical Alumni Association, under the chairmanship of Dr. George D. Head, of Minneapolis, made a report on the Medical School. The report contained excellent material and many constructive suggestions. It emphasized many needs of the school of which the faculty has long been aware and often presented to the regents. It is hoped that this report coming from the outside will assist in the early realization of our plans for development.

Certain features of the report raised questions of policy which seemed to demand consideration by the best available experts. On authority from the Board of Regents, the president appointed Drs. Frank Billings, of Chicago, Victor C. Vaughan, of Ann Arbor, and J. M. T. Finney, of Baltimore, to investigate and report upon these matters. This committee spent several days at Minneapolis and Rochester and their report is awaited with much interest, as it is believed it will contain constructive material which will be of value to medical education all over the country.

The following faculty changes are recorded:

Resignations.—Professor L. G. Rowntree; assistant professors James W. George, Paul F. Brown; instructors Margaret Hoskins, T. G. Clement.

The Medical School sustained a real loss by the resignation of Dr. Rowntree, chief of the Department of Medicine. However, as he has accepted a position in the Mayo Clinic, he retains his professorship in the Graduate School and will serve the University in its very important task of training medical specialists.

Death.—Dr. Arthur J. Gillette, professor and chief of the Division of Orthopedic Surgery.

Dr. Gillette, an alumnus of the school, was a pioneer and recognized leader in orthopedic surgery in the Northwest. He was the founder and chief surgeon of the State Hospital for Crippled and Deformed Children at Phalen Park. He was a strong teacher and will be greatly missed by the faculty and community.

Promotions.—Dr. S. Marx White, professor of medicine, as chief of the Department of Medicine; Dr. E. T. Bell, from associate professor to professor of pathology; Dr. J. F. McClendon, from associate professor to professor of physiologic chemistry; Dr. C. J. V. Pettibone, from assistant professor to associate professor of physiologic chemistry; Dr. F. B. Kingsbury, from assistant professor to associate professor of physiologic chemistry; Dr. F. C. Rodda, from assistant professor to associate professor of pediatrics; Dr. A. T. Henrici, from assistant professor to associate professor of bacteriology; Dr. J. P. Schneider, from assistant professor to associate professor of medicine; Dr. Emil S. Geist, from assistant professor to associate professor of orthopedic surgery; Dr. Charles A. Reed, from assistant professor to associate professor of orthopedic surgery; Dr. Franklin

R. Wright, from assistant professor to associate professor of urology; Dr. Max Seham, from instructor to assistant professor of pediatrics; Dr. A. H. Beard, from instructor to assistant professor of medicine; Dr. E. L. Gardner, from instructor to assistant professor of medicine; Dr. F. W. Wittich, from instructor to assistant professor of medicine; Dr. Margaret Warwick, from instructor to assistant professor of pathology; Dr. Gilbert J. Thomas, from instructor to assistant professor of urology; Dr. James F. Hammond, from assistant to instructor in obstetrics and gynecology; Dr. Thurston W. Weum, from assistant to instructor in obstetrics and gynecology; Dr. Herbert Wynne, from assistant to instructor in obstetrics and gynecology; Dr. Ernest S. Mariette, from assistant to instructor in medicine; Dr. J. C. Michael, from assistant to instructor in nervous and mental diseases; Dr. Roscoe C. Webb, from assistant to instructor in surgery; Dr. Kenneth A. Phelps, from assistant to instructor in ophthalmology and oto-laryngology; Dr. Elizabeth Pierce, from instructor to instructor and assistant superintendent of the school of nursing.

It gives me pleasure to mention in particular the promotion of Dr. White to the chiefship of the Department of Medicine, in place of Dr. Rowntree, resigned. Dr. White has been associated with the department for a long time. His ability as a teacher, prominence as an internist, deep interest in medical education, and admirable breadth of character fit him for leadership in the very important department over which he will preside.

Appointments.—Dr. Conrad Jacobson, associate professor of surgery; Dr. William Lerche, associate professor of surgery; Dr. J. A. Myers, instructor in medicine; Dr. Thomas E. Clements, instructor in medicine; Dr. C. W. Waldron, instructor in medicine; Dr. Manley H. Haynes, instructor in obstetrics and gynecology; Dr. Ralph T. Knight, instructor in surgery; Dr. James S. McCartney, instructor in pathology; Dr. Charles C. Gault, instructor in physiology.

Prize in anatomy.—Dr. Emil Geist, associate professor of orthopedic surgery, has given the Medical School the sum of \$220, as an annual prize for the best research work done in anatomy by an undergraduate student. This is a splendid stimulus and showed its results in the excellent theses presented at the end of the last session. Upon recommendation of the committee of judges the prize was divided between Halbert L. Dunn and Alfred N. Bessessen.

Prize in pathology.—The Minnesota Pathological Society offered a prize of \$100 for the best work in pathology done by undergraduates during the year. This prize was divided between David Lewis and Esther Greisheimer.

It is to be hoped that other prizes, particularly for original investigation, may be offered in the Medical School.

Limited registration.—At the beginning of the year, in accord with the regents' action, 90 freshmen were selected from the 150 or more applicants. Choice was made on a scholarship basis. Probably 25 more of the applicants would have made satisfactory students.

Ninety students are really more than we can handle satisfactorily in our laboratories and far more than we can rightly train in our small hospital. The number of well prepared applicants is increasing yearly. It is hoped that the laboratory and hospital facilities may soon be increased so that we can give a thoro medical education to classes of one hundred each. Our position in the great Northwest puts this duty upon the University of Minnesota.

Attendance.—The attendance for the year 1920-21 was as follows:

Summer quarter, 206; fall quarter, 327; winter quarter, 304; spring quarter, 258.

In addition, 59 were registered for the seventh or graduate intern year.

There were also 42 special students (physicians) and nine unclassified students (undergraduates).

Seventy-six students received the degree of Bachelor of Medicine, and fifty-two students received the degree of Doctor of Medicine during the year 1920-21.

Short courses for practitioners.—In May 1921, in coöperation with the Extension Division, the Medical School offered four-week courses for practitioners. Four courses were presented, namely, Medicine, Surgery, Pediatrics, and Obstetrics and Gynecology. A total of thirty-eight students was in attendance. The courses consisted of lectures, demonstrations, and clinics. An attempt was made to present the newer developments in the various fields. Members of all departments freely coöperated, so that a broad view of medicine, both in its scientific and also in its practical aspects, was presented. It is believed that on the basis of the experiences gained, better courses can be offered in following years, and that a real service can thereby be rendered to the alumni of the school and physicians of this and neighboring states. While the committee in charge worked hard and ably, special mention should be made of Dr. N. O. Pearce, assistant professor of pediatrics, who conceived the plan and did a large amount of the detailed work.

The new plan of clinical teaching.—The revised curriculum under which the junior and senior medical classes are each taught in two divisions, one six months in advance of the other, is working more smoothly and giving uniform satisfaction. A prominent feature of the plan is the student internship under which seniors in their last six months get clinical opportunities believed to be without a parallel in this country. The success of the plan in preparing safe and self-reliant doctors is shown by the reports concerning our men in intern positions all over the country.

In this connection the thanks of the University are due to Dr. Arthur B. Ancker, superintendent of the City and County Hospital, St. Paul, and to Dr. Walter E. List, superintendent of the General Hospital, Minneapolis. Without the cordial coöperation of these men the plan could not be carried out. It is a pleasure to record their sympathetic and willing aid in all plans for the betterment of medical education at the University of Minnesota.

Dr. Ernest S. Mariette, superintendent of Glen Lake Sanatorium, and Dr. Carl C. Chatterton, of the Hospital for Crippled and Deformed, have

also opened up their institutions for the training of student interns, as also have the authorities of St. Mary's Hospital, the Swedish Hospital, the Northwestern Hospital and the Abbott Hospital, Minneapolis, and St. Joseph's Hospital, St. Paul. To all these the Medical School offers thankful acknowledgment.

December commencement.—As a result of the successful working of the new plan, the first mid-year class was graduated on December 15, 1920, on which occasion 28 students received the degree of Bachelor of Medicine.

Legislation.—The last legislature passed the general hospital bill advocated by the president and approved by the Administrative Board of the Medical School and the Board of Regents. The new law puts upon judges of probate the duty of investigating and sending to the University Hospital worthy indigent persons in need of medical service. Such cases are to be paid for jointly by the county and state. Under the statute, the name of the University Hospital system is fixed as "the Minnesota General Hospital," the Elliot Hospital, and the Students' Hospital taking places as units in the system. It is hoped that the statute will bring about, not only unification in the University's hospital organization, but also relieve the University budget of a large measure of support which might better be devoted to teaching and research.

The bill for a State Psychopathic Hospital, as a part of the University Hospital system received sympathetic consideration but did not pass. It should be vigorously pushed before the next legislature as a necessity not only to medical education but in the broadest interests of the state. The support given this measure by the State Board of Control is in line with the broad policy and social vision of this able board.

The report of the University Hospital and the School of Nursing is appended hereto.

Respectfully submitted,

E. P. LYON, *Dean*

THE UNIVERSITY HOSPITAL

The following report of the University Hospital is submitted for the year ending June 30, 1921.

COMPARATIVE STATISTICAL REPORT I. HOSPITAL

GENERAL	1919-20	1920-21	Total	Average
Patients in hospital at beginning of the period—July 1, 1919 to July 1, 1920	159	160	.....	.....
Patients admitted during the year.....	2,480	2,444	4,924	.....
Patients treated during the year.....	2,639	2,604	5,243	.....
Total days of hospital care.....	55,998	54,750	110,748	.....
Average days per patient.....	21.14	22.4	.....	21.76
Highest daily census.....	173	179	.....	.....
Daily average number of patients.....	153	150	.....	151.50
Costs				
Daily average cost per patient.....	\$2.37	\$2.65	.....	\$2.51
Daily cost per capita for provisions for all persons supported.....	\$0.385	\$0.474	.....	\$0.429

II. OUT-PATIENT DEPARTMENT

New patients treated	15,696	15,647	31,343	.....
Total patients' visits made.....	65,528	69,133	134,661	.....
Average visits per day.....	214.32	288.16	.....	251.24
Daily average cost per patient's visit...	\$0.094	*\$0.188	.....	\$0.141
Total prescriptions issued, drug and optical	26,483	25,470	51,953	.....

* Increase due to transfer of part of social service support from the Medical School to that of the hospital.

From the above it may be observed that the number of patients admitted during the year was 36 less than were admitted the previous year and that the daily average number of patients was smaller by three.

The daily per capita cost of operation was \$2.65, which is \$0.28 higher than that for the preceding year.

The Out-Patient Department shows a small decrease in the number of new patients treated, but a relatively large increase in the average number of visits these individuals made to the dispensary. This increase is due in larger part to the activities of the Social Service Department and local agencies in securing better attendance on the part of the patients.

The cost per patient's visit was largely increased by the addition to the hospital budget of social service support items formerly carried by the Medical School budget.

Reports of the School of Nursing and of the Social Service Department of the Hospital are presented herewith.

Respectfully submitted,

L. B. BALDWIN, *Superintendent*

SCHOOL OF NURSING

There have been several rather interesting developments in the School of Nursing during the past year.

A smaller number of students than usual matriculated in September 1920, which the committee decided might be due to the expense to the student of the preliminary course, an expense greater than obtained in any other school in the country.

The committee appealed to the Board of Regents to remove from the student the expense of maintenance during the first three months of the nursing course.

This request was granted, with the result that the number of students matriculating in April 1921, was four times that of the preceding year.

During the winter the University was approached by the C. T. Miller Hospital of St. Paul and the Minneapolis General Hospital with a proposition that the nursing schools of these two hospitals be merged with the School of Nursing of the University. The plan agreed to was that all students should enter the University presenting educational entrance requirements as well as the requirements of health and age demanded of

students in the University School of Nursing; after the required three-month preliminary course in the University the students to be allowed on a basis of scholarship to choose the hospital in which there were vacancies, in which they would take the major part of their hospital training, all students to be rotated in order to give them the benefit of the variety of service afforded by the increased clinical facilities.

If this experiment succeeds, which will depend on an adequate number of students being attracted to the school, and on provision being made for proper administration and supervision, it will be the first central school of nursing under university control in the country.

Seven students who are now in the University taking the combined Arts and Nursing Course will be ready to enter the hospital in January. It is believed that the number entering for this course will steadily increase and that they will be much benefitted by the enlarged field for laboratory work afforded by the additional hospital facilities.

The number of students in the Public Health Course, while not so large as in the previous year, comprised more who took the eight-month course and a larger number who are continuing to do public health work.

The University school was asked by the authorities of the Asbury Hospital Training School for Nurses to finish the training of their senior and intermediate classes, when their hospital was turned over to the United States Public Health Service. Forty-three students were admitted, the larger number of whom were assigned to the Miller Hospital. These students have been given a rotating service between the Miller and the University hospitals in order to give them the services they needed to complete their training.

It is hoped that by the end of another year the University Greater School of Nursing will be established on a basis that will ensure its permanent success, and that it will not only serve to raise the standards of nursing education in Minnesota, but will serve as an example to be followed in the future as in the past by other university schools of nursing.

Students matriculated, three-year course.....	40
Students accepted, three-year course.....	14
Students matriculated, five-year course.....	7
Students matriculated, Public Health Course, 4 months.....	27
Students matriculated, Public Health Course, 8 months.....	7
Students in school, third year.....	23
Second year.....	12
First year.....	11
Preliminary second term.....	17
Preliminary first term.....	7
Affiliates	59
Graduates	19

Respectfully submitted,

LOUISE M. POWELL, *Superintendent*

SOCIAL SERVICE DEPARTMENT

The following statement of the work of the University Hospital Social Service Department covers the period ending June 30, 1921.

Work within the Out-Patient Department.—Special emphasis has been placed on social service work in the clinics caring for maternity cases, syphilis, adult cardiacs, and diabetics. The next largest groups came from the children's clinic, the nervous and mental clinic, and the cases referred by the hospital for after-care. Outside of these groups only such other cases were taken as were referred specifically to the department for service either from within the institution or by outside agencies.

Services rendered to agencies outside the institution.—Services requested by outside agencies interested were various but the majority were requests to "steer" patients through clinics or to secure reports and recommendations from the physicians. It has been of special interest to see the spread of this service through the field outside the Twin Cities.

New work.—The plans of last year for work with adult cardiac patients and some nutritional cases have materialized. All cases of adult cardiacs are now under supervision of this department and the clinic has shown a marked growth in new patients and attendance as a result of intensive medical and social work done.

All diabetic cases and a group of nutritional and home management cases have been followed up by the department through a part-time service on the department staff of two instructors from the Division of Home Economics. This arrangement makes available a field for practical student work in exchange for special trained services of the student in behalf of the patient. We hope this interesting experiment may be of such mutual value that some such exchange of services may continue.

Student work.—The opportunity for field work in this department has been utilized this year by a total of 37 students, namely one from the Sociology Department; 7 public health nurses; 29 from the Division of Home Economics. The organization and supervision of work for these students has consumed, of course, time and effort out of all proportion to the direct returns to the department's primary task of work with patients and for the staff. It is, however, a phase of the work which can not be overlooked.

Lectures have been given and conferences held throughout the year.

Plans.—With a curtailed budget we can not safely make plans but we can say that the work should be immediately extended to cover at least the children's clinic, the general medical, and nervous and mental groups. If these clinics had regular workers assigned, the proportionate amount of work which could well be done in other clinics would be larger than at present because now each worker must spend so much time with patients referred to other departments for consultation. Aside from the importance of this expansion to the patient and physician, we should be able to offer this particular work to our students. It is a laboratory facility which is very necessary.

We believe that a field work affiliation should be developed in relation to the School of Nursing. That this is not only desirable but feasible has been demonstrated in many other localities.

Our plans must necessarily be for efficiency rather than expansion; intensive rather than expansive.

Statistical.—The results in social work, as in medical, are impossible to measure in figures. The following facts may be suggestive:

Number individual families worked with (intensive).....	1,395
Number instances of cases of additional assistance (clinic cases)....	4,788
Number visits made.....	3,035
Number reports given agencies.....	1,977
Number agencies coöperated with.....	174
Number letters written.....	3,069
Number pieces of literature distributed.....	3,004

Personnel.—The workers in the department during the past year have been Miss Marion Tebbets, Miss Lydia Christ, Miss Corrinne Plouf (left September 1, 1920), Mrs. Frances Cushman, Miss Caroline Manger, Miss Marie Watson (left April 15, 1921), Mrs. Mildred Robinson (left October 1, 1920), Miss Gwen Owen (left July 1, 1921).

New workers: Miss Cynthia Smith, September 20, 1920; Miss Lydia Madsen, October 1, 1920.

In closing the year we wish to thank all those who have coöperated with us so fully and who have thus made the work possible.

Respectfully submitted,

MARION A. TEBBETS, *Director*

THE COLLEGE OF DENTISTRY

To the President of the University:

SIR: I beg to submit the report for the College of Dentistry for the year 1920-21.

The first class of dental mechanics is nearing the completion of its course and the dental hygienists will finish next year. The result of releasing trained assistants to aid well qualified graduates will be watched with great interest. It is believed that with such skilled assistance available the highly trained dentist with sound scientific foundation as well as technical skill will be able to multiply his usefulness several-fold. Other extension work of one form or another has gone on throughout the year. Summer extension courses in prosthetic dentistry have been especially successful under the direction of Dr. M. M. House, of Indianapolis.

The five-year course is in full operation, with as many candidates for admission as there have been for the four-year course.

During the year the government established in the University a dental branch of the Reserve Officers' Training Corps. All classes eligible for entrance have matriculated in this corps in gratifying numbers, over fifty per cent being now enrolled. A number of advanced students are already taking camp training at Carlisle, Pennsylvania. The purpose of the course is to train a reserve body of dentists for help in any future military crisis. These men are commissioned as first lieutenants in the Reserve Corps, Dental Branch, two years after graduation, or immediately, in case of war.

Of great significance to dental education in general is the inquiry into methods of dental education throughout the country recently undertaken by the Carnegie Foundation for the advancement of teaching. It is believed that much can be accomplished by this impartial and disinterested investigation toward the ideal of the university dental schools, the reuniting of dentistry with its mother profession, medicine.

Respectfully submitted,

ALFRED OWRE, *Dean*

THE SCHOOL OF MINES

To the President of the University:

SIR: I herewith submit my report for the University year 1920-21.

STATE MINES' EXPERIMENT STATION

Personnel.—No change in the personnel of the station has been made during the year.

New equipment.—Little permanent equipment has been secured during the past year. The Mesabi Iron Company has loaned to the station for testing purposes, a Mitchell vibrating screen and a Hummer vibrating screen.

A request for \$60,000 for equipment for the new Mines' Experiment Station has been submitted to the Board of Regents.

Ore-washing machine.—The installations at the plant of the Tennessee Iron and Coal Company and at the Mariska Mine of the Bowe-Burke Mining Company on the Mesabi Range were completed and operated for a short time before the close of the ore shipping season. The results produced on a commercial scale were even more satisfactory than those secured with the small experimental machine originally constructed at the Mines Experiment Station. A revival of the iron and steel industries would result in the installation of a number of these machines, which are now being manufactured by the Dorr Company, of Denver, Colorado. A royalty of four per cent of the purchase price of each machine installed is to be paid to the University.

Magnetic concentration.—Eleven magnetic log-washers, 18 feet long and 6 feet wide are now being constructed at Babbitt, Minnesota, by the Mesabi Iron Company for use in their iron ore concentrating plant. This plant will produce an exceedingly high grade iron concentrate from material which heretofore has been considered valueless. The plant of the Mesabi Iron Company will be in operation early next spring and if satisfactory results are secured, a very large low grade iron ore industry will immediately develop on the East Mesabi Range. This industry not only will make taxable a very large amount of ore land, but also will eventually give the state the direct income from certain state lands which are located in this district. The University will also receive certain sums of money on account of a contract with Mr. Davis regarding magnetic log-washers.

Activities.—The work of the Mines' Experiment Station may be grouped as follows:

A. Work submitted by citizens of the state:

a. Large scale tests ($\frac{1}{2}$ ton or more).....	71
b. Small scale tests (less than $\frac{1}{2}$ ton).....	104
c. Samples submitted for assay and examination.....	250
d. Number of samples referred to other departments.....	10

B. Special experimental work:

- a. Investigations are being carried on in connection with the following problems. In some cases, the Lake Superior Station of the United States Bureau of Mines has offered its coöperation.
 1. Mechanical concentration of Lake Superior hematites. Bureau of Mines coöperates.
 2. Concentration of the iron and manganese in the Cuyuna manganiferous iron ores. Bureau of Mines coöperates.
 3. Concentration of the iron and the titanium in the titaniferous iron ores. Bureau of Mines coöperates.
 4. Magnetic concentration of the Lake Superior magnetites. Bureau of Mines coöperates.
 5. The consideration of the cost of the removal of silica from iron ores. Mechanical means versus blast furnace. Bureau of Mines coöperates.
 6. Magnetic roasting and concentration of the Lake Superior hematites. Bureau of Mines coöperates.
 7. The agglomeration of fine iron ore. Bureau of Mines coöperates.
 8. The design of an efficient roasting furnace for hematite ores. Bureau of Mines coöperates.
 9. The smelting of fine iron ore. Bureau of Mines coöperates.
 10. Technological investigation of peat.
 11. The development of a high-power wet magnetic separator.
 12. Magnetic head motion for tables.
 13. Magnetic assayer.
 14. Methods for determining the amount of iron in the magnetic state in iron ores.
 15. A proper design of magnetic poles for magnetic separators.
 16. Lixiviation of manganese iron ores. Bureau of Mines coöperates.
 17. The use of air lifts for pumping mixtures of ore and water.
 18. The use of pipe launders for conveying mixtures of ore and water.
 19. The development of apparatus for rapidly cooling red hot sinter.
 20. Sharpening and tempering churn drill bits. Bureau of Mines coöperates.
- b. The Experiment Station has agreed to coöperate with the Lake Superior Station on the following Bureau of Mines' problems:
 1. Experimental smelting of manganese ores.
 2. Beneficiation of low grade iron ores from the Birmingham district.
 3. Design and construction of experimental blast furnaces.
- c. In coöperation with the Department of Geology of the University of Minnesota, the following investigation has been made:
 1. Microscopic study of sintered and partially reduced iron ores.
- d. In coöperation with the Department of Experimental Engineering, the following investigation has been made:
 1. The removal of shale and other light material from gravel.

Assays.—The total number of assays made in connection with all these activities during the past year was 12,874.

Publications.—The *Mining Directory for 1920* was published and distributed in July, 1920. The 1921 edition is now in proof form and will be ready for distribution early in July.

Bulletin no. 8, a supplement to the *Bibliography of Minnesota Mining and Geology*, which originally appeared as *Bulletin* no. 4 by Winifred Gregory, was published and distributed in March, 1921.

Bulletin no. 9, *The Magnetic Concentration of Iron Ore*, will be in the hands of the printer before the first of July, and should be ready for distribution during August.

New Mines' Experiment Station.—The Board of Regents has definitely authorized the erection of this building, work on the plans has begun, and actual construction should start in the near future. The building will be located north of the present Experiment Station. In order that it may contain the latest types of machinery and conform to the best practice, extensive plans and data have been secured as to modern ore dressing and metallurgical laboratories by Mr. Davis and myself, who made an extended trip for this purpose.

UNITED STATES BUREAU OF MINES

Object.—The Lake Superior Station, now North Central Experiment Station of the United States Bureau of Mines was established in July, 1917. The station has as its object the study of iron ore problems of the entire country and the investigation of mining and metallurgical problems of the Lake Superior district, including Minnesota, Michigan, and Wisconsin. It also conducts the general administration of Bureau of Mines' mine rescue and first aid work in the Lake Superior district. Mine rescue car no. 10 is employed in this service.

Personnel.—Mr. C. E. Julihn is the superintendent of the North Central Experiment Station and district engineer. He has been assisted by Mr. P. H. Royster and Mr. F. B. Foley, metallurgists; Mr. T. L. Joseph, chief analyst; Mr. J. F. Fleischut, chief clerk; Mr. G. E. Ingersoll, assistant metal mining engineer; Mr. R. B. Ageton, engineer in charge of car no. 10; and nine others serving in various capacities.

Activities.—The problems now engaging the attention of the station include:

1. Reaction rate in reduction of iron oxide.
2. Performance tests on coke in blast furnace.
3. Effect of physical characteristics of the charge in blast furnace operation.
4. Effect of furnace lines on blast furnace operation.
5. Experimental blast furnace design.
6. Influence of rate of cooling upon physical properties of carbon steel.
7. Effects of carburization in tubes of oil stills.
8. Heat treatment of rock drill steels.
9. Neumann bands in mild steel—their production and detection.
10. Heat treatment of churn drills.
11. Steel from sponge iron, properties of.
12. Administrative organization in iron mining industry, Lake Superior district.
13. Organization for handling rock drill steel in iron mines of Lake Superior district.
14. Miscellaneous field investigations, first aid and mine rescue training and assistance at mine disasters.

All work of this station is conducted in closest possible coöperation with the State Mines' Experiment Station.

MINNESOTA TAX COMMISSION

Object.—The School of Mines still continues its service to the State Tax Commission. The ore estimates, as checked and submitted, are used as a basis for the valuation of mineral properties in the State of Minnesota.

Services.—Owing to the fact that our report to the Tax Commission is made biennially, it is not possible to make a separate report for the year 1921.

During the biennium ending September 1, 1920, the School of Mines reported to the Tax Commission on a total of 137 properties. These reports involved a total tonnage of Bessemer, non-Bessemer, and manganiferous iron ores of 342,909,846 tons. This is a net increase for the biennium of 40,685,223 tons.

In addition to the above tonnage, they have reported 80,107,449 tons of non-merchantable ore material, consisting of paint rock, lean ore, and highly siliceous ore, occurring in sixty-five of the above mentioned properties. As time goes on and the present reserves of high grade ores become exhausted, if current furnace practice changes, and if new processes of beneficiation are developed, or the cost of mining and beneficiation of lean ore is reduced to show a margin of profit, much of this tonnage may be made merchantable and will then be added to the merchantable tonnage.

Technical information not involving the question of tonnage was furnished the commission whenever requests were made.

Twelve trips were taken to the mining districts of Minnesota, requiring fifty-five days of field work for two men. This large amount of field work is essential, as with most operating mines it is advisable first to make a personal examination of mining conditions before estimating and reporting on the tonnage involved.

Personnel.—Mr. E. M. Lambert, assisted by Mr. A. J. Carlson, continues in charge of the work. The cordial relations with the officials of the various mining companies continue to be maintained and expressions of appreciation of this branch of service to the state come to us, both from the Tax Commission and the mining companies.

EDUCATION

Registration.—The total registration during the year was one hundred sixty eight, distributed as follows:

Graduate	1
Seniors	17
Juniors	21
Sophomores	74
Freshmen	55
Total	168

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

Aitkin	1	Meeker	1
Becker	1	Morrison	2
Clay	1	Ottertail	1
Crow Wing	5	Pipestone	1
Dakota	1	Pope	1
Douglas	1	Ramsey	21
Fillmore	2	Red Lake	1
Freeborn	1	Redwood	1
Hennepin	71	Rice	1
Isanti	1	Rock	1
Itasca	1	St. Louis	20
Lake	1	Traverse	1
Lyon	2	Wabasha	1
McLeod	2	Winona	2
Martin	1		

Students registered also outside of the state as follows:

China	6	North Dakota	3
Iowa	2	South Dakota	1
Michigan	2	Spain	1
Montana	1	Wisconsin	5

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

Seniors	1
Juniors	0
Sophomores	7
Freshmen	11

The reasons for these withdrawals were as follows:

Financial	3
Ill health	4
Personal	2
Unknown	10

Faculty.—All members of the faculty continued to serve throughout the year. Two additional instructors were added to the teaching staff.

Mr. Louis S. Heilig, a graduate of the School of Mines of the class of 1915, was appointed instructor in mining. Mr. Heilig, since graduation, has had experience in iron mining operations and for three years was engaged in mining exploration work in connection with large concessions in the Belgian Congo.

Mr. E. H. Kersten, a graduate of the School of Mines, was appointed instructor in metallurgy. Mr. Kersten has had experience in geological work, in iron mining in Minnesota, and in metallurgical work in the Black Hills.

Curriculum.—Minor changes in the curriculum have been made for the coming year.

Attendance.—Total attendance during the year showed a small increase, but there was a very large increase in the sophomore class. A large increase of engineering students taking courses in metallurgy, as well as students of dentistry, engineering and chemistry, taking courses in metallography, was noted.

Respectfully submitted,

W. R. APPLEBY, *Dean*

THE COLLEGE OF PHARMACY

To the President of the University:

SIR: I herewith submit my report of the College of Pharmacy for the University year 1920-21.

Registration.—The college completed the twenty-ninth year on June 15, 1921, which was also the twenty-eighth commencement date of the college. A total of thirteen students was graduated. The names and the degrees of the graduates are as follows:

Pharmaceutical Chemist (Phm.C.)

Abrahamson, Myrtle	Nisbett, Beulah
Blair, J. H.	Nichols, Josephine
Geib, Irene	Roberts, James E.
Johnson, Ruby	Sanderson, Mildred
Nelson, G. N.	Taylor, Angus

Walechka, Louis

Bachelor of Science in Pharmacy (B.Sc.Phm.)

Bajpai, R. B.	Jones, Ruth
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Three students did not complete their work in time for commencement but will be candidates for graduation at the end of Summer School. Their names and respective degrees are as follows: T. H. Abbotts, Phm.C., W. C. Baines, Phm.C., and Charles V. L. Netz, B.Sc., Phm.

The total registration during the year was one hundred thirteen. This enrolment tho less than that of last year, more than taxed the capacity of the building and equipment. This year, as last year and the year before, the freshman class had to be limited. Fewer students dropped out during the present year than is usual so that on the whole a larger teaching load was carried by the faculty than last year.

Instruction.—The division of the school year into three quarters was continued. The three-quarter plan entails much more work in many respects than the two-semester plan. The instructional work began under more normal conditions last fall but on account of high prices and a small supplies budget, the conduct of the various laboratories was carried on with much difficulty and confusion during the second and third quarters. The hope that the supplies budget, which became exhausted at about the end of the first quarter, would be strengthened by the emergency request made of the legislature, had to be abandoned because the legislature took no action upon the request. The college was then obliged to change much of its laboratory work to fit whatever supplies were on hand. This depleted, in a very large measure, the normal stock of supplies of all kinds. The course in pharmaceutical chemistry had to be abridged very measurably because of lack of supplies. The instruction given under these circumstances while competent and efficient was not identical with that given in the courses under normal conditions. The two vacancies that existed during the year in the instructional ranks could not be filled satisfactorily. One was filled

temporarily by a graduate of this college, Mr. C. W. Folkestad. The work of the other instructorship was done by the rest of the faculty and several student assistants. The following named students assisted but of course did not instruct: Verle Bryan, George Rud, Earl Hodel, Ruth Jones, George Lark. Mr. Charles V. L. Netz assisted in Dr. Rogers' work in teaching. Because of this economy, \$3,200 was transferred from the pharmacy budget to reserve during the second quarter. These arrangements were not at all satisfactory and resulted in the doing of less efficient work than usual, but the best kind of work possible under the circumstances. No special lectures were given during the year. The usual educational trips to botanical fields and to drug laboratories and mills were made by the students under competent guidance. As in former years, the several classes attended the sessions of the Scientific and Practical Section of the Minnesota State Pharmaceutical Association in St. Paul during February. The usual instruction in medicinal plant culture was given. Mr. Martin Burton Chittick was appointed instructor in pharmacy by the Board of Regents at their meeting of May 12. The appointment will go into effect with the ensuing year. Early in the winter Leopold Peters, laboratory assistant, was killed in an automobile accident. No suitable successor was found but Arthur Cragg became temporary successor until June 15 on which date he left the college. The position has not yet been permanently filled. Mrs. A. DeWitt filled the position of service woman from about the end of November.

Pharmacy prizes.—Melvin L. Reid was the winner of the Minnesota State Pharmaceutical Association scholarship prize of \$90. No student entered the competition for the Fairchild scholarship prize.

Free Dispensary.—In December, Instructor O. J. Blosmo resigned and was succeeded by Miss Hallie Bruce, her appointment following her recommendation by Dr. Baldwin who did so without first conferring with the College of Pharmacy according to the existing agreement that the pharmacist in charge of the Free Dispensary drug room shall be appointed upon the joint recommendation of the medical and pharmaceutical schools. Later I approved tentatively Miss Bruce's appointment.

The total number of physicians' prescriptions dispensed largely by the senior class under the supervision and instruction of Instructors Blosmo and Bruce and assistants is exhibited by the following table:

July, 1920	1,922
August	2,078
September	2,086
October	2,014
November	1,864
December	2,226
January, 1921	2,187
February	2,182
March	2,286
April	1,921
May	1,888
June (estimated as).....	2,205
Total	24,859

This prescription practice supplements and corresponds with the didactic and laboratory work in the regular college course in dispensing and incompatibilities and affords valuable practice and experience for the senior class.

Departmental library.—The library was kept open as usual daily, an hour in the morning and one hour at noon and on Tuesday and Thursday evenings. The library reading-room was frequently used for instructional purposes to the disadvantage of those who used the library often but there was no alternative since the Pharmacy Building has only one lecture-room and one recitation room. No additions were made to the library except the regular periodicals annually subscribed for and such new books on pharmacy or related subjects as were published during the year.

Pharmaceutical service.—The activities and service of the college are increasing in all directions. The demands upon the college by the University Hospital, Free Dispensary, Dental College, Health Service, Veterinary, Pharmacological, and other departments, by the Athletic Association and by many pharmacists of this and other states for pharmaceutical preparations and for college-grown drugs, especially *digitalis purpurea* and *digitalis lutea*, were greater than those of last year. The usual demand for identification of wild medicinal plants and for the analysis of proprietary preparations continued. The educational service given by the college included instruction in pharmaceutical processes to seventy-six medical students and occasional lectures to high-school students and nurses in connection with our medicinal plant culture. The usual service by faculty members to the Minnesota State Pharmaceutical Association and pharmacists at large, consisting of examination of official drugs and preparations found on the open market, was continued and reported to the state association.

Outside activities.—The faculty engaged in the usual outside activities (to which a full reference was made in the several last annual reports). Two members of the faculty attended the annual convention of the American Pharmaceutical Association. One member attended the annual convention of the state pharmaceutical associations of Wisconsin, Iowa, North and South Dakota. All members attended the Minnesota State Pharmacopoeial Convention and contributed in a large measure to the proceedings. One member of the faculty was reelected to the secretaryship of the association. Another became the retiring president of the association and member of the executive committee. One member was reelected for the sixteenth time to the chairmanship of the scientific section of the state association. One member attended the annual meeting of the Association of Urban Universities at Philadelphia, Pennsylvania, in December, as representative of the University. Outside and association committee work is increasing. One member of the faculty was elected to the chairmanship of the Northwest Drug Conference and presided at the conference at St. Paul in early June. All members of the faculty contributed largely toward the work of revising the *United States Pharmacopoeia IX* and the *National Formulary IV*.

Geographical distribution.—The student body came from the following political divisions in the numbers indicated: Illinois 1; North Dakota 1; Montana 2; South Dakota 6; Wisconsin 2; Russia 1; and the rest from Minnesota from counties as follows:

Chippewa	1	McLeod	1
Crow Wing	1	Olmsted	1
Chisago	1	Ottertail	2
Dodge	1	Ramsey	12
Grant	1	Renville	2
Goodhue	2	Rice	1
Hennepin	44	Steele	4
Houston	3	Stearns	1
Itasca	2	Swift	1
Kandiyohi	2	Sibley	1
Kanabec	1	Todd	2
Koochiching	1	Winona	1
Lincoln	1	Waseca	1
Lac qui Parle	2	Wright	1
Lyon	1	Wabasha	1
Meeker	1	Yellow Medicine	1
Merrison	1		

Respectfully submitted,

FREDERICK J. WULLING, *Dean*

THE SCHOOL OF CHEMISTRY

To the President of the University:

SIR: I beg to submit my report for the School of Chemistry for the year 1920-21.

The resignation of Dean Lauder W. Jones to accept a professorship of organic chemistry at Princeton University was followed by the appointment of the writer in July, 1920, as his successor in the deanship of the School of Chemistry and the College of Engineering and Architecture. The school has just passed through a year of abnormal growth. In addition to an unusual increase in its own students it has been called upon, in its capacity as a service department of the University, to accommodate the large increase in the student body of most of the other colleges. As a result of this increase in students, the more general courses and laboratories were so crowded as greatly to impair the efficiency of instruction.

During the present year the situation has improved. The registration was smaller and the facilities for instruction were increased. It is the general opinion that the quality of instruction has improved as a result.

FACULTY

The following changes in the faculty have taken place during the year. Outstanding among them is the appointment of Dr. Paul H. M.-P. Brinton as professor of analytical chemistry. Professor Brinton was an instructor in this school during the years 1909-12 and received his Doctor's degree in 1916. He served during the war as chief of the Analytical Research Unit, Research Division, in the Chemical Warfare Service. Dr. Brinton comes to us from the University of Arizona where he has held the professorship of analytical chemistry for the past three years. He has made a very creditable record in research.

New appointments.—O. M. Leland, dean of the School of Chemistry and the College of Engineering and Architecture.

General inorganic chemistry: Instructors, C. Fosse, N. C. Pervier, and N. W. Speece.

Analytical chemistry: Professor, P. H. M.-P. Brinton; instructor, L. A. Sarver.

Organic chemistry: Instructors, W. M. Lauer and L. I. Smith.

Technological chemistry: Instructor, S. Leavitt.

Promotions.—The following were promoted from the rank of instructor to assistant professor: L. H. Reyerson, general inorganic chemistry; L. I. Smith, organic chemistry.

Leave of absence.—E. P. Harding, associate professor of technological chemistry, sabbatical furlough, February to June, 1921, for study of petroleum technology at the University of Oklahoma.

Resignation.—N. W. Speece, instructor in general inorganic chemistry, December 22, 1920, to accept commission in the United States Army.

STUDENTS

The registration of students in the School of Chemistry during the past year is shown in the following tables. The totals for the preceding year, 1919-20, are also shown. It will be seen that there has been a decrease in the total registration of about 15 per cent. This has taken place in the freshman year. In the upper years there have been increases in several cases.

The present tendency in the direction of chemical engineering is shown by the fact that the registration in the various classes is four times as great as in the four-year course in chemistry.

REGISTRATION
Fall Quarter, 1920-21

CLASS	CHEMICAL ENGINEERS	FOUR-YEAR	TOTAL	1919-20 TOTAL
Freshmen	41	10	51	79
Sophomores	33	4	37	39
Juniors	18	5	23	25
Seniors	18	8	26	23
Post-seniors	14	..	14	5
Total	124	27	151	171

Winter Quarter, 1920-21

CLASS	CHEMICAL ENGINEERS	FOUR-YEAR	TOTAL	1919-20 TOTAL
Freshmen	26	6	32	63
Sophomores	29	2	31	37
Juniors	18	5	23	25
Seniors	16	10	26	24
Post-seniors	12	..	12	4
Total	101	23	124	149

Spring Quarter, 1920-21

CLASS	CHEMICAL ENGINEERS	FOUR-YEAR	TOTAL	1919-20 TOTAL
Freshmen	23	6	29	54
Sophomores	29	2	21	32
Juniors	19	5	24	26
Seniors	15	8	23	22
Post-seniors	12	..	12	4
Total	98	21	119	138

The relatively large number of post-seniors in chemical engineering should be noted. These students receive the degree of Bachelor of Science in Chemical Engineering at the end of their fourth year and of Chemical Engineer at the end of their fifth year. The great majority of the students remain for their fifth year. Beginning next year, this work for the degree of Chemical Engineer will be under the control of the Graduate School. This arrangement corresponds to that between the College of Engineering and Architecture and the Graduate School.

The number of graduates from the School of Chemistry is shown below. The chemical engineering degrees were conferred at the commencement in June upon the recommendation of the Graduate School for the first time.

DEGREES CONFERRED, 1920-21

	December, 1920	June, 1921	Total
Bachelor of Science in Chemistry .....	..	9	9
Bachelor of Science in Chemical Engineering..	..	9	9
Chemical Engineer	1	12	13
	—	—	—
Total	1	30	31

Instruction.—The above registration figures refer only to students registered in the School of Chemistry. By far the greater amount of the instruction in the School of Chemistry is given to students registered in other colleges. In the fall quarter of this year the amount of instruction given in this school was 8,291 student credits. In the corresponding quarter last year this amount was 8,789 student credits. Thus the decrease is about 6 per cent. Here, again, the decrease lies in the freshman courses while the higher courses in many cases have shown increases.

EQUIPMENT

During the past year there has been a loss of efficiency in instruction owing to the lack of the proper amount of apparatus and equipment of various kinds. Last year the need was even greater. The extreme size of some classes made it necessary to increase the supply of certain apparatus to an unprecedented degree. In some cases it was impossible to get the apparatus at any price owing to the state of the market, but in other cases the scarcity of funds in the University produced the same effect and the loss of students' time in waiting for apparatus which was in use by other students caused a serious reduction in the amount of work accomplished. In many cases entire laboratory experiments have had to be abandoned owing to the lack of a sufficient quantity of necessary material.

Repairs.—A large amount of apparatus has been recovered during the last year through the efficient labor of the mechanic, Mr. A. Mueller. Special apparatus also has been constructed in the shop which would have been obtainable in no other way. This new construction has included stock articles upon which more than 50 per cent of the market price has been saved. Much additional work of this kind could be performed very efficiently

if the mechanician were provided with the requisite tools and one or two pieces of instrument-maker's machinery. It is hoped that these may be obtained during the coming year.

A considerable saving in expense as well as increased facilities for research would be produced by the employment of a glass-worker for the repair and construction of glass apparatus. A large amount of this equipment is lost owing to the breakage of small parts which could be reclaimed at small expense by a glass repair man. I have no doubt that such a man would save more than his entire salary during the year in the School of Chemistry alone. Moreover, a large amount of time of the instructing staff and advanced students would be saved for research, and considerable delays avoided, if such a man were available.

BUILDING

The construction of the new portion of the Chemistry Building constitutes one of the principal events of the year in this school. Favorable progress is being made in the construction and it is expected that the completed building will be ready for use in the fall. Not only will this complete the building and provide more room for laboratories, but the ventilation system of the present building is to be completed and this will be of the utmost importance. The large laboratories have never been properly ventilated in accordance with the original plan. Only part of the ventilating machinery has been installed. When the large classes have been at work the conditions were almost unbearable. The completion of this installation will produce very much better working conditions which will increase the efficiency of the instruction.

In addition to the four floors of the new building, the roofhouse which extends over the entire building will greatly increase the room in the School of Chemistry and, for the present at least, will relieve the crowded conditions in the Main Engineering Building inasmuch as a great deal of this new house will be used for drafting-rooms for the College of Engineering and Architecture.

The useful space in the present building has been increased by the construction of rooms at the ends of the main corridor and by the removal of partitions so as to form larger rooms by a combination of two adjacent smaller ones. Also the accommodations for students have been increased at the expense of aisle space by the addition of extensions at the ends of laboratory desks. These extensions have provided additional lockers which considerably add to the capacity of the laboratory.

During the past year the close relations between the School of Chemistry and the College of Engineering and Architecture have continued and have resulted in uniformity of procedure and regulations which are of assistance in the correlation of the work of the two colleges. Through their various activities, also, the students of both colleges are closely associated.

Respectfully submitted,

O. M. LELAND, *Dean*

THE COLLEGE OF EDUCATION

To the President of the University:

SIR: I submit herewith my report as dean of the College of Education for the year 1920-21.

ENROLMENT, DEGREES, AND CERTIFICATES

There has been a substantial increase in enrolment in this college during the current year as will be evident from the following tables:

ENROLMENT BY YEARS, TERMS, AND CLASSES

	1919-20			1920-21		
	FALL	WINTER	SPRING	FALL	WINTER	SPRING
Seniors	50	53	50	134	139	130
Juniors	136	133	117	109	100	130
Sophomores	29	24	27	32	49	40
Freshmen	29	27	35	42	39	41
Unclassed	160	134	107	128	136	84
Total	404	371	336	445	463	425

TOTAL ENROLMENT BY YEARS

YEAR	MEN	WOMEN	TOTAL
1916-17	42	162	204
1917-18	40	159	199
1918-19	46	240	286
1919-20	110	386	496
1920-21	95	504	599

Summer Session.—Attention is called to the increased enrolment of students in education in the Summer School and the increasing importance of this work at the University of Minnesota.

ENROLMENT IN COLLEGE OF EDUCATION IN SUMMER SESSION

YEAR	MEN	WOMEN	TOTAL
1918	31	161	192
1919	71	171	242
1920	106	304	410
1921	152	453	605

TOTAL NUMBER OF STUDENTS IN REGULAR ACADEMIC YEAR AND SUMMER SESSION

YEAR	ENROLMENT
1919-20	906
1920-21	1,204*

* Including 88 also registered during the regular year.

ENROLMENT OF STUDENTS IN THE GRADUATE SCHOOL WITH A
MAJOR IN EDUCATION

	ENROLMENT
Year 1919-20	31
Year 1920-21	55
Summer Session 1920.....	49
Summer Session 1921.....	91

Advanced degrees.—Master of Arts, June, 1921, 10; Doctor of Philosophy, June, 1921, 1.

TOTAL NUMBER OF STUDENTS ENROLLED FOR UNDERGRADUATE AND
GRADUATE WORK IN EDUCATION

YEAR	ENROLMENT
1919-20	986
1920-21	1,350

From these figures it appears that the faculty of this college has rendered service during the current year to 1,350 students which is an increase of 364 individuals, 30 per cent over that recorded for 1919-20.

Degrees and certificates.—The degree of Bachelor of Science has been granted to 118 students since June, 1920.

The University Teacher's Certificate has been granted as follows:

Agriculture	8	Home Economics	38
Americanization	4	Latin	6
Animal Biology	7	Mathematics	8
Art Education	7	Political Science	11
Botany	12	Public Speaking	4
Chemistry	2	Public School Music	4
Commercial subjects	2	Scandinavian	3
English	17	Spanish	4
French	5	Supervision	13
German	3	Vocational Education	2
History	32		

Degrees granted without the Teacher's Certificate, 5.

CHANGES IN STAFF

New appointments.—The following new appointments were made to the staff for the current year: Jesse B. Sears, associate professor of educational administration; Helen Clark, assistant professor of educational psychology; Frederick Kuhlmann, professorial lecturer in educational psychology; Charles A. Prosser, professorial lecturer in trade and industrial education; Gertrude Duncan Ross, instructor in art education; M. R. Bass, instructor (part time) trade and industrial education; August Dvorak, instructor in science, University High School; Louis A. Tohill, instructor in history, University High School; Grace V. Wright, instructor in history, University High School; Della Thompson, instructor in Latin and French, University High School.

Leaves of absence.—The following members of the staff were granted leaves of absence for the year 1920-21: Frances Morehouse, instructor, University High School, to the University of Manchester, England; Dora

V. Smith, instructor, University High School, to Scotland; Georgina Lomen, assistant professor, Department of Agricultural Education, to Teachers College, Columbia University.

Resignations.—Samuel R. Powers, instructor in the University High School, to accept principalship of the Training School with rank of professor in the College of Education, University of Arkansas; John V. Ankeney, assistant professor in agricultural education, to accept associate professorship in agricultural education, University of Missouri; Sherman Dickinson, instructor in agricultural education, to accept professorship in agricultural education at the University of Idaho; Sybil Fleming, instructor in the University High School, to become instructor in the School of Business, University of Minnesota.

Retirement.—Albert W. Rankin, retired on a Carnegie pension.

SHORT COURSE

The annual Short Course and High School Conference was conducted at the University, March 23 to 26 inclusive. In addition to the members of the staff of the College of Education, the members of the State Department of Education and the public school principals and superintendents of the state, three invited speakers took part in these meetings. These speakers were, Professor Charles H. Judd, director of the School of Education, University of Chicago; Professor E. L. Thorndike, Teachers College, Columbia University; and Professor John W. Withers, dean of the School of Education of New York University.

The attendance at these conferences exceeded the attendance of previous years and the interest seemed as good as ever.

SPECIAL CURRICULA

The University now offers special curricula in the following fields:

- Agricultural education
- Americanization training
- Art education
- High-school rural training
- Home economics education
- Trade and industrial education
- Training for teachers of subnormal children
- Physical education
- Public-school music

In this connection it is important to note the agreement entered into during the year between the Board of Regents of the University and the State Board of Control regarding teachers of subnormal children. A copy of this agreement follows herewith:

It is hereby agreed by and between the University of Minnesota and the Minnesota State Board of Control, both subscribing to this agreement and plan of coöperation, as follows:

(1) That there shall be instituted a coöperative plan for the training of teachers of sub-normal children and for the training of similar and related workers such as clinical psychologists and social service workers.

(2) That the University of Minnesota, because of its general functions and equipment, is prepared to offer the fundamental training required for the above named types of service.

(3) That the State School for Feeble Minded and the Epileptic Colony at Faribault, Minnesota, because of its special functions and facilities, offers opportunity for certain forms of clinical and practice work which the University of Minnesota does not provide.

(4) That students pursuing courses in either of the institutions named shall be registered as students in the University of Minnesota and shall be entitled to all student privileges of such institution, including the granting of university credits and certificates for work properly performed.

(5) That the University of Minnesota will issue certificates to prospective teachers and other workers of the type above named in accordance with the laws governing the issuance of such certificates.

(6) That all courses offered at the State School for Feeble Minded and Epileptic Colony at Faribault, Minnesota, for which credit in the University shall be asked, will be subject to the approval of the University of Minnesota and will in every way meet the standards of the college in which such courses are located.

(7) That when any member of the staff of the State School for Feeble Minded and Epileptic Colony shall offer any course or courses for which credit in the University of Minnesota is given, that instructor shall be approved as qualified by the University authorities and that during the time that such courses are offered, such instructor shall be carried as a member of the faculty of the University of Minnesota without pay.

(8) That the State School for Feeble Minded and Epileptic Colony at Faribault shall make all possible provision consistent with the main function of the institution for the clinical and practice training of students of the University whose fundamental training enables them to profit by such courses at the State School for Feeble Minded and Epileptic Colony at Faribault.

(9) That the details of coöperation for the satisfactory execution of this agreement will be determined by the representatives of the University and the superintendent of the State School for Feeble Minded and the Epileptic Colony at Faribault.

(10) That either party may terminate this agreement by notice in writing to the other at any time. The notice shall specify the date when such termination shall occur and thereafter no new work shall be undertaken but all obligations then outstanding shall be met and fulfilled.

The arrangement with the Minneapolis and St. Paul schools concerning classes for cadet teaching still continues. During the year two students have availed themselves of the opportunity for appointment to these positions.

COLLEGE DEPARTMENTS

The College of Education now is organized into departments as follows:

DEPARTMENTS WHOLLY WITHIN THE COLLEGE OF EDUCATION

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

DEPARTMENTS PRIMARILY ORGANIZED IN OTHER COLLEGES BUT WHICH SERVE THE COLLEGE OF EDUCATION FROM THE STANDPOINT OF SUBJECT-MATTER

Agriculture	History
Animal Biology	Home Economics
Anthropology and Americanization	Human Physiology
Training	Latin
Astronomy	Mathematics
Bacteriology	Music
Botany	Philosophy
Chemistry	Physical Education (women)
Comparative Philology	Physical Education (men)
Economics	Physics
English, Rhetoric, and Public	Political Science
Speaking	Psychology
Geology	Romance Languages
German	Scandinavian
Greek	Sociology and Social Work

COMMITTEE ON APPOINTMENTS

During the year the activities of the College of Education in regard to the recommendation of teachers are represented by the following figures:

TEACHERS PLACED	NUMBER	AVERAGE SALARY	TOTAL SALARIES
Secondary teachers	197	\$1,417	\$279,319
Junior high school and grade.....	6	1,370	8,820
High school principals.....	20	1,738	35,165
Superintendents and grade school principals	18	1,980	35,640
Normal school and college teachers	9	1,811	16,300
Teachers of home economics	32	1,347	43,125
Teachers of agriculture	6	2,166	13,000
Total	288		\$431,369

STENOGRAPHIC SERVICE

A rearrangement of the stenographic service was made during the year so that the entire stenographic force is available for the entire college. Stenographers are not assigned to departments within the college but are regarded as a part of the college administration. The rearrangement has resulted in a more adequate service to the very great satisfaction of the faculty.

UNIVERSITY HIGH SCHOOL

The enrolment in the University High School continues at the maximum possible with the space and teaching staff at our disposal. The senior class this year numbered 32 girls and 21 boys, a total of 53.

The enrolment for the year is as follows:

CLASS	BOYS	GIRLS	TOTAL
Seniors	21	32	53
Juniors	18	34	52
Sophomores	28	27	55
Freshmen	30	30	60
Total	97	123	220

The school continues to serve as the chief place in which prospective teachers may do their practice teaching. During the year eighty-six teachers have been trained in this school. Twenty other teachers have done their practice teaching in the public schools of Minneapolis and St. Paul. Four teachers preparing for teaching trade and industrial subjects have received their practice work in Dunwoody Institute.

PRIZE AND SCHOLARSHIP

The prize and scholarship offered in this college in the year 1919-20 were again offered during the current year. The Elizabeth Carse Scholarship of \$50 which this year was won by Miss Gratia Kelley, a member of the senior class, has been made an annual scholarship until notice of its discontinuance is given by Miss Carse.

The Pi Lambda Theta prize of \$50 which was won this year by Miss Hope Mowbray, a member of the junior class, has been made a permanent prize offered annually by the Pi Lambda Theta Fraternity.

STUDENT COUNCIL AND HONOR SYSTEM

The Student Council, instituted in the year 1919-20, has been active during the year in a general way altho it has done but little in the way of student discipline.

Discussion in the faculty and in the Student Council in this college and among our students generally at the time when the honor system was discontinued in certain other colleges on the campus, was favorable to retaining the system in this college. As heretofore, therefore, the honor system is in vogue for all classes strictly within this college.

BUILDING

The building for which \$50,000 was appropriated by the Legislature of 1919 has not been built owing to the increased cost of building materials and other factors in construction. This \$50,000 is available but should be supplemented by an equal amount in order to build the proper sort of building under present conditions.

PSYCHO-EDUCATIONAL CLINIC

The work of the psycho-educational clinic may be viewed from two angles.

1. *Public service.*—During the year 1920-21 twenty-three different social and educational agencies have referred cases to this clinic. One hundred eighty-six individuals have been given intelligence examinations. These individuals were grouped by intelligence levels as follows:

Mentally deficient	59
Border line	15
Backward	42
Normal	23
Superior	5
Psychopathic	10

In addition to the above cases, 32 unmarried mothers were given intelligence examinations. In intelligence these individuals range from an I. Q. of 40 to an I. Q. of 99. Only seven, however, were above 90. Forty-seven per cent of them were clearly mentally deficient, and an additional twenty-five per cent were seriously retarded.

The work of the clinic is carried on in Millard Hall in close coöperation with the various clinics of the Medical School, and practically all of these people had one or more medical examinations.

2. The primary purpose of the clinic, however, from the standpoint of this college is the actual training in clinical work of advanced students in educational psychology. Only students with extended training in psychology are admitted to the work of the clinic. During the year, sixteen students were registered for this course and completed work securing credits towards their degrees.

In addition to the clinic conducted in Millard Hall additional clinics have been conducted by Dr. Kuhlmann in the Minneapolis and St. Paul schools.

Respectfully submitted,

M. E. HAGGERTY, *Dean*

THE GRADUATE SCHOOL

To the President of the University:

SIR: In submitting this report of the Graduate School for the year 1920-21, I am compelled by the statistics given below to note again as in recent reports the rapid increase in number. A total of 814 students was registered during the current year. Seven-eighths of this number were registered during the regular year. Despite the increase in the summer session, the great proportion are students during the regular academic year either in Minneapolis or at Rochester. This is a very substantial growth, about 470 per cent, since 1913 when the present organization was started. In the last three years the attendance has tripled and is almost twice what it was at the high point preceding the war. In other words the rate of growth of the Graduate School in the last few years exceeds that of any other unit of the University and for a period of eight years is exceeded only by the College of Education. In actual numbers it is the third largest group of students in the University, being exceeded in number by the College of Science, Literature, and the Arts and the College of Engineering and Architecture, and is one of the largest graduate schools in the United States. In certain fields such as the branches of clinical medicine, it is, and has been from the beginning, the leading school, strictly graduate basis, in the United States, if not in the world.

The adjectives of size have nothing to do with the realities in any graduate school. Those lie in the preparation and quality of the students, staff, and the adequacies of the material opportunities. I have cited the figures because they can not be ignored and because they are some measure of the responsibility that the University is assuming. Within a short time we shall have a thousand graduate students. Now, a graduate school with a thousand students, one hundred of whom will receive advanced degrees and go out in universities, colleges, normal schools, public schools, research laboratories, both public and private, who will be called on to lead in education, medicine, agriculture, engineering, and public life, is both too important and its students too numerous to be treated with acquiescent absent-mindedness. They are in increasing proportion going to give significance to what the University of Minnesota means to the state and nation. Their quality and preparation and spirit are not only fixed by what we expect of them, but they in their work are going to influence the ideals and determine the output of every plant, institution, and profession in which they labor. In the Graduate School the University may seem to some to be working less directly but no one can deny that the ultimate results of any work good, bad, or indifferent, come back upon us in geometrical ratios.

Upon the strength and scholarship of the graduate faculty, the care with which men are selected, promoted, and otherwise encouraged by freedom and adequate facilities depends the quality of our graduate work. In this particular, the University has held its own in the past year. The

development of younger men is one promising factor. To be specific, this would apply especially to the younger men who are so considerable a part of our staff in political science, psychology, and biochemistry. We can also congratulate ourselves on keeping the services of such men as Mr. R. A. Gortner in agriculture and Mr. Rasmussen in medicine, and adding to our college and graduate faculties such capable scholars and teachers as Mr. C. W. Alvord in history, Mr. Neale in education, Mr. Johnson in psychology and Mr. Brinton in chemistry, and the appointments on the Mayo Foundation of Mr. Helmholtz in pediatrics. It has been of advantage to the graduate students in education to have had during the past year contact with Mr. Sears, of Leland Stanford.

Graduate work has lost strong supporters in the resignations of R. W. Thatcher, A. J. Todd, Carleton Brown, and R. M. Dutcher.

When we turn to the problem of maintaining and increasing our strength, the very heart of it seems to me to be in keeping our own staff happy and content by giving them opportunities and support whenever need arises. I am delighted that our salary basis is to be henceforth where only the most captious can complain. I rejoice with all the teachers and graduate students that they will have in the near future in a new library, a place to work with the tools of their profession at hand in convenient form. Our limited graduate funds have been wisely distributed by the Executive Committee to help research in the past year and in some cases this fund has prevented the absolute collapse of promising work where department supply budgets were exhausted. The summary appended shows the work done or in progress supported by this fund. Printing costs have limited publishing activities. This is unfortunate for in many fields our staff and students are doing excellent and valuable work that ought to be made available to the public. This question of increased avenues of publicity for scholarship is so important that I am not sure that if an endowment without designation were offered the University it might not well go into the support of a real University press. However, the five publications we did put out were all creditable and make in importance one of the best years of production. Professor Anderson's monograph was by exception, mailed to members of the legislature and state officials free. Mr. Gerould's bibliography reveals that in the field of English history in the seventeenth century the University of Minnesota has one of the most extensive collections of material outside of the British Museum.

When one considers the size of the staff and student body, the activity of both in scholarly work, the question of conscious effort in recognizing and developing graduate work becomes concrete. A comparison of the funds available for this work in endowments and fellowships has just been published in the National Research Council. When the Mayo Foundation with a budget at present of over \$230,000 is added to the Graduate School research fund of \$15,000 (after cost of administrations is deducted) Minnesota makes a commanding showing. But it is somewhat deceptive for the service fellowships supported by the foundation are not quite the equivalent of the mobile endowments other leading universities have. A budget of

\$50,000 annually would enable us occasionally to pay the salary of some member of the staff during a time when he needed to be free for the completion of an important piece of research, to give similar support to students, and to come adequately to the aid of those who need apparatus, materials, books, and technical assistants in their research work. This it seems to me would be more defensible than permanent research professorships and fellowships except as the funds for these come from endowments.

There are two minor matters that have importance:

1. There should be a central place where valuable apparatus used by one department for a while might be drawn out by others. Graduate School funds have been used to purchase such material but it becomes in practice department apparatus and not easily found or used by other departments who then duplicate it. Any new storehouse should have a special room for this type of apparatus and a method of controlling it.

2. The second point is that of a unification of the method of appointing and using those graduate students who are appointed as teaching fellows, assistants, etc. Too many times the holders of such appointments who come here primarily as graduate students are overloaded with duties by the departments. Either their graduate work suffers and they are disappointed or the department attempts to protect them by lowering standards and making concessions so they can receive their advanced degrees in the expected period. Either system is indefensible.

I do not need to extend this report by comment on the tables. I can not help pointing out the marked increase of majors in the field of education as some indication of the increasing importance of this field and the growing recognition of the strength of our staff.

Certain developments of the year must be mentioned. First of all I should say was the action of the engineering faculty in putting under the Graduate School all work for the professional degrees and the School of Chemistry in turning over to the Graduate School the administration of the degree of Chemical Engineer. This completes the process of putting all work for advanced degrees under one organization.

It is gratifying as a proof of the quality of the research work done for the advanced degrees in medicine to state that a commercial publisher will soon issue a stout volume edited by Dr. Wilson and Dr. Jackson which will contain either in full or in abstract the theses offered for the degrees of M.S. and Ph.D. in Medicine.

Acknowledgement should be made of the establishment of two new fellowships for the study of tuberculosis known as the Pokegama Fellowships supported by Dr. H. Longstreet Taylor.

I hope shortly to lay before the regents an offer from the well equipped Miller Hospital Clinic in St. Paul to support four new fellowships in various fields of clinical medicine.

The graduate faculty reaffirmed its faith in the necessity of keeping the thesis as a requirement for the Master's degree. The decision followed the well considered report of a committee appointed a year ago. They have

further given evidence of their desire to maintain standards by ruling out of consideration for graduate credit any course work that falls below a grade of B.

I feel free to conclude this report by the unqualified statement that the condition and prospects of graduate work at the University of Minnesota were never better. I desire to express for the graduate faculty to yourself and the regents our appreciation of the support given this work and especially the increase of the graduate funds from \$20,000 to \$25,000. After deducting salaries and office expenses for the coming year this leaves free for research and publication the sum of \$18,160 as against \$14,420 for this last year.

REGISTRATION, 1916-21

YEAR	GRADUATE STUDY	MASTER	DOCTOR	ENGINEER	MEN	WOMEN	TOTAL
1916	31	206	139	..	270	106	376
1917	29	328	107	..	347	117	464
1918	21	200	155	..	248	128	376
1919	19	219	134	..	268	154	372
1920	24	358	226	..	443	165	608
1921	49	462	283	20	604	210	814

DISTRIBUTION ACCORDING TO YEARS OF GRADUATE WORK

FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
641	129	36	8

GRADUATE STUDENTS DOING FULL- OR PART-TIME WORK

	FULL TIME	PART TIME	TOTAL
Men	341	473	604
Women	58	152	210
Total	399	625	814

MEMBERS OF STAFF REGISTERED IN GRADUATE SCHOOL

	MEN	WOMEN	TOTAL
Instructors doing graduate work.....	140	29	169
Graduate students serving as assistants...	76	16	92
Graduate students holding scholarships...	18	12	30
Teaching fellows	28	23	51
Fellows (Mayo Foundation).....	170	12	182
Total	432	92	524

- 4 Professors.
- 23 Assistant professors.
- 2 Associate professors.

GRADUATE STUDENTS MAJORING IN THE VARIOUS DEPARTMENTS

DEPARTMENT	MEN	WOMEN	TOTAL
Agricultural Biochemistry	14	4	18
Agricultural Economics	11	..	11
Agricultural Education	4	..	4
Agronomy and Farm Management.....	9	..	9
Anatomy	8	5	13
Animal Biology	5	3	8
Animal Husbandry	5	..	5
Anthropology	1	4	5
Bacteriology and Immunology.....	5	5	10
Botany	4	5	9
Chemistry	35	5	40
Chemical Engineering	12	..	12
Comparative Philology	1	..	1
Dairy Husbandry	13	..	13
Economics	4	24	28
Education	81	20	101
English	10	27	37
Electrical Engineering.....	4	..	4
Entomology	9	..	9
Forestry	1	1	2
Geology	11	..	11
German	6	7	13
Greek	1	1	2
History	16	26	42
Home Economics .....	..	8	8
Horticulture	8	..	8
Latin	1	7	8
Mathematics	10	5	15
Mechanical Engineering	12	..	12
Metallography	3	..	3
Medical Biochemistry	2	..	2
Medicine	45	..	45
Neurology	2	..	2
Obstetrics	3	..	3
Oto-Laryngology	12	..	12
Ophthalmology	15	..	15
Pathology	4	10	14
Pediatrics	12	..	12
Pharmacology	2	..	2
Philosophy	3	1	4
Psychology	8	9	17
Physics	17	5	22
Physiology and Physiologic Chemistry....	5	3	8
Plant Pathology	15	2	17
Political Science	7	..	7
Rhetoric	1	2	3
Romance Languages	13	9	22
Roentgenology	3	..	3
Scandinavian	4	..	4
Sociology	10	13	23
Soils	5	..	5
Structural Engineering	3	..	3
Surgery	103	..	103
Veterinary Medicine	1	..	1
Total	604	210	814

MASTERS DEGREES GRANTED IN 1920 BY DEPARTMENTS

	MINNESOTA GRADUATES		OTHER COLLEGES		TOTALS		
	Men	Women	Men	Women	Men	Women	Total
Agronomy .....	..	..	2	..	2	..	2
Agricultural Education..	..	..	1	..	..	..	1
Agricultural Economics..	1	..	2	..	..	..	3
Anatomy	1	..	..	..	..	..	1
Analytical Chemistry...	..	..	2	..	..	..	2
Animal Husbandry.....	1	..	..	..	1	..	1
Bacteriology .....	..	1	1	1	2	1	3
Biochemistry .....	..	1	2	1	2	2	4
Chemical Engineering ..	12	..	..	..	12	..	12
Dairy Husbandry .....	..	..	2	..	2	..	2
Education	2	..	2	4	4	4	8
Educational Psychology..	..	..	1	1	1	1	2
Electrical Engineering..	1	..	..	..	1	..	1
English	1	1	..	..	1	1	2
Entomology	1	..	..	..	1	..	1
Farm Management.....	2	..	..	..	2	..	2
Home Economics .....	..	1	..	1	..	2	2
Horticulture	1	..	..	..	1	..	1
History	1	..	2	2	2	3	5
Latin .....	..	2	..	1	..	3	3
Mathematics .....	..	..	1	..	1	..	1
Mechanical Engineering..	7	..	..	..	7	..	7
Medicine	1	..	..	..	1	..	1
Metallography	1	..	..	..	1	..	1
Organic Chemistry.....	1	..	1	..	2	..	2
Ophthal. & Oto-Larynx...	1	..	..	..	1	..	1
Pharmacology .....	..	..	1	..	1	..	1
Physics .....	..	..	1	..	1	..	1
Physiological Chem.....	..	..	1	..	1	..	1
Political Science .....	..	..	1	..	1	..	1
Psychology .....	..	..	1	2	1	2	3
Romance .....	..	1	..	1	..	2	2
Surgery	1	..	5	..	6	..	6
Total	36	7	38	3	57	21	86

EDUCATIONAL INSTITUTIONS REPRESENTED IN GRADUATE SCHOOL

Alberta	1	Lafayette	1
Amherst	2	Lawrence	1
Augsburg	2	Liege	2
Augustana	1	Leland Stanford	1
Arizona	1	Lewis Institute	1
Baker	1	Luther	2
Beloit	6	McGill	6
Boston	1	Maryland	1
Bowdoin	2	Marquette	1
Brown	1	Madrid	1
Bryn Mawr	1	Macalester	14
California	2	Maine	1
Carleton	12	Manitoba	1
Catholic University	2	Michigan	16
Charleston	1	Michigan Agr. Col.	2
Chicago	17	Missouri	10
Chicago (Rush)	12	Monban	1
Cincinnati	1	Monmouth	2
Clemson	2	Mt. Holyoke	1
Clark	1	Morningside	1
Colorado	5	Nankin, China	1
Columbia	5	Nebraska	10
Connecticut	1	Nebraska Wesleyan	3
Cornell	15	New Mexico	1
Creighton	2	North Carolina	1
Dakota Wesleyan	2	North Dakota	1
Dartmouth	2	Northwestern	4
Davidson	1	Ohio State	4
Denison	2	Ohio Wesleyan	4
De Pauw	1	Oberlin	1
Des Moines	1	Paris, France	2
Drake	1	Pennsylvania	19
Dublin	1	Philippines, Univ. of	3
Earlham	1	Pittsburg	1
Fargo	3	Pomona	4
Geneva	1	Princeton	1
George Washington	1	Purdue	1
Georgetown	1	Queens	1
Gustavus Adolphus	5	Radcliffe	3
Grinnell	2	Reed	1
Hanover	3	Red Wing	2
Harvard	7	Ripon	2
Havana	1	Roanoke	1
Highland	1	St. Catherine	6
Hope	1	St. Johns	1
Huron	1	St. Lawrence	1
Illinois, Univ. of	12	St. Louis	2
Illinois Wesleyan	1	St. Olaf	18
Indiana	8	St. Teresa	2
Indiana State	4	St. Thomas	2
Indiana St. Normal	2	Saskatchewan	1
Iowa	4	Smith	4
Hamline	17	South Carolina	2
Johns Hopkins	15	South Dakota	3
Johnson Bible	1	South Dakota State	2
Kansas	2	Stanford	1
Kristiania	1	Sydney (Australia)	1

Syracuse	15	Western	1
Tennessee	1	Western Reserve	3
Texas	1	West Point	1
Toronto	5	West Virginia	2
Tufts	1	Whitman	1
Tulane	3	William Jewell	3
Trinity	1	Williams	1
Union	1	Wisconsin	21
Upper Iowa University.....	3	Wittenberg	1
Valparaiso	1	Woffard	2
Vanderbilt	3	Yale	2
Virginia	2	Yankton	2
Vassar	5	Zurich	2
Wabash	2		
Wartburg	2	Total colleges represented.....	150
Washington	4	Minnesota registration	300
Washington & Jefferson.....	2	Other colleges	514
Wellesley	1		
Wells	1	Total registration.....	814
Wesleyan (Connecticut)	2		

DOCTORS OF PHILOSOPHY, 1920-21

- Winifred Mayer Ashby, B.S. '03, Chicago, M.S. '05, Washington. Major, bacteriology (immunology); Minor, pathology (hematology). Thesis: *Destruction of Transfused Blood in Normal Subjects and in Pernicious Anemia Patients.*
- George Henshaw Childs, B.A. '14, M.A. '15, Minnesota. Major, animal biology; Minor, entomology. Thesis: *Some Observations on the Digestive System of Diplopods with Special Reference to Parajulus.*
- Raymond Otto Filter, B.A. '14, Baldwin-Wallace, M.A. '16, Wisconsin. Major, psychology; Minor, education. Thesis: *An Experimental Study of Character Traits.*
- John George Frayne, B.A. '17, Ripon. Major, physics; Minor, mathematics. Thesis: *The Anilateral Dynamic Characteristics of Three Electrode Thermionic Amplifiers.*
- Samuel Alexander Graham, B.S. '14, Minnesota, M.S. '16, Cornell. Major, entomology; Minor, animal biology. Thesis: *The Influence of Physical Factors of the Environment on the Ecology of Certain Insects in Logs.*
- Ada Frances Johnson, B.A. '17, Bryn Mawr College, M.A. '18, Minnesota. Major, physics; Minor, mathematics and chemistry. Thesis: *An Investigation of the Method of Measuring Ionic Mobilities by Observations on the Self-Repulsion of Ions.*
- Oscar Julius Johnson, B.A. '17, M.A. '18, Idaho. Major, education; Minor, psychology. Thesis: *The St. Paul Non-Verbal Intelligence Examination for Primary Pupils.*
- Homer Barker Latimer, B.A. '07, M.A. '08, Minnesota. Major, anatomy; minor, animal biology. Thesis: *The Postnatal Growth of the Body, Systems and Organs of the Single Comb Leghorn Chick.*
- Hjalmar Laurits Osterud, B.A. '09, M.A. '10, Washington. Major, anatomy; Minor, animal biology. Thesis: *The Postnatal Growth and Development of the Reproductive Tract in the Female Albino Rat.*

- Calvin Perry Stone, B.A. '15, M.A. '16, Indiana. Major, psychology; Minor, medicine. Thesis: *An Experimental Analysis of the Congenital Sexual Behavior of the Male Albino Rat.*
- Joseph Valasek, B.S. '17, Case, M.A. '20, Minnesota. Major, physics; Minor, mathematics. Thesis: *Piezo-Electric Activity of Rochelle Salt under Various Conditions.*
- Paul Work, B.A. '07, Tennessee, B.S. '10, Pennsylvania State College, M.S. '13, Cornell. Major, botany; Minor, soils. Thesis: *Effects of Nitrate of Soda on the Nutrition of the Tomato.*

Doctors of Philosophy in Nervous and Mental Diseases

- John Charnley McKinley, B.S. '15, M.A. '17, Minnesota. Major, nervous and mental diseases; Minor, anatomy. Thesis: *The Intranewral Plexus of Fasciculi and Fibers in the Sciatic Nerve.*
- Charles Edward Nixon, B.A. '08, Pacific Union College, M.D. '15, Southern California, M.S. '19, Minnesota. Major, nervous and mental diseases; Minor, pathology. Thesis: *The Substances Concerned in the Colloidal Gold Test and the Nature of the Reaction.*

Doctor of Philosophy in Obstetrics and Gynecology

- Leroy Adelbert Calkins, M.B. '18, M.D. '19, M.S. '20, Minnesota. Major, obstetrics and gynecology; Minor, anatomy. Thesis: *Morphometry of the Human Foetus with Special Reference to the Obstetric Dimensions of the Head.*

Doctor of Philosophy in Pediatrics

- Chester Arthur Stewart, B.A. '14, Missouri, M.A. '15, Ph.D. '17, Minnesota. Major, pediatrics; Minor, anatomy. Thesis: *The Vital Capacity of the Lungs of Children in Health and Disease.*

FELLOWSHIPS, 1921-22

Shevlin Fellows

- Agriculture: Robert Newton.
 Chemistry: J. Russell Winslow.
 Medicine: Edmond Newell Nelson.
 Science, Literature, and the Arts: Malcolm F. Farley.
 Du Pont Fellow in Chemistry: Frank C. Kracek.

APPROPRIATIONS FOR RESEARCH

Allotments from the Research Funds of the Graduate School have been made by the Executive Committee during the past year to the following persons for the purposes stated, with results as summarized:

- Karl S. Lashley, \$150 for supplies and apparatus. Study of behavior in animals. Paper to be published. Work to be continued.
- W. H. Emmons, \$400 for studies on the origin, accumulation and conservation of petroleum. Research assistant. Many experiments made—different conditions noted. Work in progress and to be continued.
- A. H. Hansen, \$150 for fluctuation of wages in organized and unorganized labor. Research assistant. Paper to be published in near future.
- F. B. Garver, \$425 for studies in Canadian taxation system. Expenses and clerical assistance. Book on the single tax in preparation.
- L. I. Knight, \$250 for studies on dormancy in bulbs. Research assistants. Experiments in artificial forcing on Peruvian daffodil. Work to be continued.
- O. E. Harder, \$400 for studies on the carburization of steels and related topics. Research assistant. Work on permanent magnets to be published soon. Work to be continued.
- L. L. Bernard, \$75 for survey of reading habits and cultural activity of a rural community. Clerical assistance. One paper "The Misuse of Instinct in the Social Sciences" published in March *Psychological Review*, 1921. Another paper in progress. Work to be continued.
- J. I. Parcel and G. A. Maney, \$400 for experimental studies in concrete and reinforced concrete. One paper given by Mr. Lagaard at the American Concrete Institute. Work on theoretical study of frames and arches in progress.
- C. M. Jackson, \$150 for continued studies on inanition on albino rats. Library research assistant. Many Russian translations made on inanition. Results to be published in book form during coming year.
- E. T. Bell, \$500 for study in nephritis. Technician. Paper to be published this fall.
- N. S. B. Gras, \$100 for study of storage problems in connection with a study of the evolution of metropolitan markets.
- M. E. Haggerty, \$500 for study of gifted children in upper grades. Research assistant. 540 public school children of Minneapolis tested—discovering 147 gifted children. Work to be continued.
- W. P. Larson, \$300 for bacterial and metabolic studies. Supplies. Studies on the permeability of membrane. Three papers ready for publication.
- F. B. Kingsbury, \$200 for development of functional tests for liver and kidneys. Apparatus and supplies. Analytic method of blood tests. Paper now in press in the *Archives of Internal Medicine*. Work to be continued.
- S. J. Buck and L. B. Shippee, \$150 for history research.
- A. T. Henrici, \$250 for investigations of relationship of nitrogen. Supplies. Statistical studies of growth of bacteria. Work in progress, to be continued.
- J. T. Tate and W. F. G. Swann, \$1,200 for physical investigations. Research assistants. Four articles published in *Physical Review*. One article published in *Astrophysical Journal* 53: no. 3, 224-30, 1921. Five papers presented at Chicago meeting of American Physical Society.

- One article published on pp. 327-33 of book "Einstein's Theories of Relativity and Gravitation." Selected as one of the essays in contest for \$5,000 prize offered by *Scientific American*.
- F. F. Grout, \$300 for studies of the values of Minnesota clay. Research assistant. Analyses of different clays made. Determinative tables being made. Work to be continued.
- Hal Downey, \$250 for studies in development of lymph nodes. Research assistant. MSS "The Structure and Origin of the Lymph Sinuses of Mammalian Lymph and Their Relations to Endothelium and Reticulum" accepted for publication in the Italian journal, *Haematologica* edited by Ferrata in Naples.
- L. V. Koos, \$180 for analytical study of high school curricula. Research assistants. Work in progress, to be continued.
- F. H. Swift, \$300 for comparative study of the methods of school finance. Research assistant. One paper on "Declining Importance of State Fund in Public School Finance" given at American Association for Advancement of Science. Four articles published: *Journal of Educational Research*, October, 1920, 647-67; November, 741-62. *American School Board Journal*, May, 1921; June, 1921. *London Times*. The Open Court, June, 1921; July, 1921. Another paper to be published in *School Review*.
- J. F. McClendon, \$300 for study of rickets. Experiments made on rats and children. Work in progress, to be continued.
- M. J. Van Wagenen, \$250 for investigations on intelligence testing in public schools. Assistance and materials. Two reading tests worked out in history and two in geography. To be published by Public School Publishing Company.
- J. P. Sedgwick, \$100 for investigations in breast feeding. Several reports and articles published.
- J. L. Gillett, \$170 for purchase of books and photostatic reprints. Valuable purchases made and bound for library.
- J. E. Tilden, \$300 for photographic work and research assistant on Pacific Ocean algae. Three volumes of source books to be published. Work in progress, to be continued.
- E. W. Olmsted, \$230 for books in Romance languages. Books purchased for library.
- R. A. Dutcher, \$250 for vitamins. Several papers published.
- A. D. Hirschfelder, \$100 for pharmacological studies. Research assistant. Work in progress, to be continued.

PUBLICATIONS

Since the last report the following have appeared:

Bibliography Series

James T. Gerould, *Sources of English History in the Seventeenth Century, 1603-1689, in the University of Minnesota Library.*

Current Problems

Frances Elizabeth Kelly, *A History of School Support in Minnesota, 1858-1917.*

Samuel Ralph Powers, *A History of the Teaching of Chemistry in the Secondary Schools of the United States previous to 1850.*

Social Science Series

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

William Anderson, *A History of the Constitution of Minnesota with the First Verified Text.*

Respectfully submitted,

GUY STANTON FORD, *Dean*

THE SCHOOL OF BUSINESS

To the President of the University:

SIR: I submit herewith my report for the year 1920-21.

This, the second year of the existence of the work in business education as a separate unit, has been marked by (1) the development of a more serious professional interest among the student body, (2) such revision of subject-matter and the manner of its presentation as was indicated by the first year's experience. The total registrations in the School of Business itself, for the entire year, increased from 97 in 1919-20 to 132 in 1920-21, while the average number of elections of courses in economics and other business subjects given by members of this staff increased from 1,818 in 1919-20 to 2,333 in 1920-21.

Scholarship.—In order to encourage the development of high standards of scholarship and capacity for leadership, chapters of two national honorary Greek letter societies were installed, one for men, Beta Gamma Sigma, the other for women, Gamma Epsilon Pi.

Resignations.—During the year two persons of professorial rank resigned, Dr. Thomas H. Sanders, who accepted an assistant professorship in accounting at Harvard College, and Dr. Clarence L. Holmes, who accepted the headship of the Department of Farm Management at Iowa State College.

Promotions.—Associate Professor Frederic B. Garver has been promoted to the rank of professor.

Appointments.—Two persons have been appointed to vacancies in the professorial ranks. Dr. H. Bruce Price, of Yale University, is to succeed Dr. Holmes as assistant professor of agricultural economics. Assistant Professor John Reighard, formerly with Stom, Thomson and Worley, of Detroit, Michigan, is to have charge of a course in accounting for seniors in the advanced seminar.

Needs.—The outstanding needs of the work in business education at Minnesota are: (1) suitable quarters and equipment for the carrying on of classroom and laboratory work and the housing of such books and technical journals as are in constant use; (2) the establishment of a Bureau of Business Research through which the research activities of the staff and students may be coordinated and directed into channels which will be most profitable to the commonwealth. Such an organization would render the same invaluable service to the small business man as is rendered to the farmer by the various divisions of our Department of Agriculture; (3) the inauguration by the College of Education and the School of Business, jointly, of a course for the training of commercial teachers. At present no facilities are provided by any of the state's educational institutions for the training of the large number of persons needed for this important field. As a result our high schools are compelled to bring in teachers from distant places or to employ persons with inadequate training.

Respectfully submitted,

GEORGE W. DOWRIE, *Dean*

THE DEAN OF WOMEN

To the President of the University:

SIR: The dean of women herewith submits the following report for the year 1920-21.

REGISTRATION OF WOMEN

Science, Literature, and the Arts.....	1,701
Engineering and Architecture.....	11
Law.....	7
Medicine.....	35
*Nurses.....	117
Dentistry.....	8
Dental Hygienists.....	9
Pharmacy.....	29
Chemistry.....	13
Education.....	504
Graduate.....	139
Business.....	20
Agriculture and Home Economics.....	334
War Specials.....	5
Total.....	2,932
During Summer Session, 1920.....	847
Total for the year.....	3,779

* Including 24 in Public Health Nursing courses.

The distribution 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 1920-21, is as follows:

At home.....	1,345
In private families: apartments.....	331
In approved houses.....	322
In sorority houses.....	124
In dormitories.....	145
In coöperative cottages.....	39
†In home management houses.....	22
In nurses homes.....	90
Working for room and board.....	50
Total.....	2,468
Wholly self-supporting.....	218
Partly self-supporting.....	353
Wholly dependent.....	1,550
No reply.....	347

† Permanent residents: 16 different workers each quarter.

Delinquents.—The dean of women has coöperated as far as possible with Dean Nicholson and Dean Shumway, in dealing with delinquent students.

Absentees.—The dean of women has written excuses for all absences due to sickness. Students habitually absent or tardy have been interviewed.

Houses for women.—Sanford Hall: The addition to the two wings of the dormitory was completed about January 1, 1921. The rooms in the addition were not occupied until March 29, owing to the lack of furniture. The original building housed 88 students; the addition takes care of 100 students, making a total of 188 students. As anticipated, many girls from the poorer rooming houses moved into Sanford. Miss Ruth Phelps is the chaperon of East Sanford, and Miss Ruth Raymond of West Sanford. Miss Mary Jackson is the house director.

Home management houses.—These houses furnish a laboratory for the practical working out of the principles laid down in the courses on foods and nutrition, textiles, clothing, and child-training.

Coöperative cottages.—Northrop, chaperoned by Mrs. Gertrude Pitts, houses ten girls, all of whom are medical students. Loring houses sixteen girls and is chaperoned by Miss Jean Alexander. Winchell and Winchell Annex together house thirteen students. Mrs. Mary E. Staples is the chaperon. Room rent in the cottages ranges from \$7 to \$10 a month, and board is from \$15 to \$20 a month. These cottages fill a real need, and the rooms are much in demand. The students live in the cottages at small expense, and they also gain experience in practical home management, in that all the work of the cottages, with the exception of the cooking, is done by the students. As we may lose these cottages, in the near future, it is hoped that some way will open, by which we may have *permanent* coöperative cottages. The Mortar Board and the Alumnae Club are working to this end. The coöperative cottages are under the direct supervision of the dean of women.

Sorority houses.—We have twelve sorority houses now. These houses are useful in providing better accommodations than are found in the boarding houses.

Boarding houses.—We have many excellent boarding houses. We are constantly trying to raise the standards of living and to provide suitable house-mothers.

Mrs. Staples, the head of the Housing Bureau, has done much to improve conditions in the rooming houses for both men and women. The houses are graded A, B, and C, according to their desirability. Thoro and frequent inspections are made. The householders are coöperating fairly well. Students are often obliged to live in unattractive rooms, and to board at cafés and restaurants. More dormitories and coöperative cottages are needed to do away with this method of living. The need is urgent.

This spring, a backyard survey has been made by Mrs. Staples for the Health Department.

Summer School.—No printed lists were sent out. Arrangements for rooms were again made through the Housing Bureau. This has proved to be very satisfactory. Shevlin Hall was open for the social activities of the women. The Minnesota Union served meals to both men and women.

WOMEN'S ORGANIZATIONS

W.S.G.A.—All women students belong to the Women's Self-Government Association, which is a most important and useful organization. The Big Sisters Organization, the Tutoring Bureau, the Shevlin Hall Committee, the House Council, the Vocational Committee, the Book Exchange, with a business amounting to \$2,500 yearly, all are managed by the W.S.G.A. This organization supports all movements for the betterment of Minnesota.

Woman's University Club.—The W.U.C., an organization formed by the teaching faculty, has a membership of sixty-three. The club has furnished a pleasant clubroom in Shevlin Hall. This provides a meeting place, and an "opportunity for social and professional contacts" for the faculty women. Plans are being worked out for a faculty house, and in the meantime, efforts are being made to increase the membership, and to assist new members to find suitable homes. The conditions for membership are broad, including active, associate, and honorary members. Mrs. Sara H. Van Dusen, of the Extension Division, is the president of the club.

Women's Athletic Association.—The W.A.A. is an organization to stimulate interest in athletics, and to arrange for the various athletic events. It has a membership of sixty-nine.

Social activities.—The dean of women held open house for all University women on Sunday afternoons during March. "Examination teas" were given during all examination periods. They proved to be of real value to the students.

The fireside reading hour has been held on Wednesday afternoon throughout the year. This reading hour has been carried on for fourteen years.

Picnic suppers have been given to various groups at the home of the dean of women.

Student activities.—Twenty sunlight dances and fifteen social hours have been given, sponsored by the W.S.G.A. The Big Sisters have arranged for parties and teas. Thanksgiving and Christmas parties have been provided for the women students by the W.S.G.A.

Chaperonage.—We have had semi-monthly meetings of the chaperons of the sorority houses and also of the householders. These meetings have proved pleasant in more than a social way, as they have been helpful in solving various problems.

Evening parties on the campus, and in the sorority houses, have been confined to Friday and Saturday evenings. With the coöperation of the W.S.G.A., a satisfactory method of managing the chaperonage for these evening parties has been worked out.

Financial aid to students.—With the exception of the Duluth Loan Scholarship, all of the following loan scholarships are administered through the office of the dean of women:

THE PRESIDENT'S REPORT

The Faculty Women's loan fund.....	\$700.00
The Faculty Women's emergency loan fund.....	250.00
The W.S.G.A. loan fund	200.00
The Minnesota Alumnae loan fund.....	100.00
The Minneapolis College Women's loan fund.....	200.00
The Puritan Colony loan fund	200.00
Minnesota Federation of Women's Clubs, loan scholar- ships	350.00
Duluth Branch of the Association of Collegiate Alumnae loan scholarship	

From the Faculty Women's loan fund, from February 1, 1920 to February 1, 1921, thirty-three students borrowed a total of \$1,734.63; twenty-eight students paid back \$1,156.88. We also have the interest from \$2,000 invested in two Britain and Ireland bonds, to add to the loan fund. With a few exceptions, the students are very honorable in repaying their loans.

Scholarships.—Following is a list of the scholarships handled by this office:

Mrs. Elbert L. Carpenter scholarship.....	\$100.00
Mrs. George C. Christian scholarship.....	100.00
Nina Morais Cohen scholarship.....	100.00
George H. Partridge scholarship.....	500.00
College Women's Club of Minneapolis	450.00
College Women's Club of St. Paul.....	900.00
Faculty Women's Club	100.00
Women's Club of Minneapolis.....	100.00
Women's Self-Government Association	400.00
Total	\$2,750.00

Respectfully submitted,

JESSIE S. LADD, *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 1920-21.

Conditions in the student body this year have shown a material improvement over the general condition of last year. The difficulties which have arisen this year have been minor in character. Judging from reports from other institutions I am led to feel that we are in a comparatively healthy condition.

Student councils.—The councils in practically all colleges have been quite active this year and have as a rule actively coöperated with the administration in all matters where they properly could.

I wish to call especial attention to the good work of the Academic Council and the All-University Student Council.

Student publications.—There have been on the campus this past year the following publications officially recognized: the *Minnesota Daily*, the student daily paper; the *Gopher*, the junior annual; the *Minnesota Technologist*, published by the association of engineering students; the *Minnesota Farm Review*, published by the students of the College of Agriculture; and the *Minnesota Law Review*, published by the law students and faculty.

All of these publications are in a healthy condition, with the exception of the *Daily* which has not received the support which it should from students or faculty.

At the beginning of the year there were requests for permission to reestablish the old *Minnesota Magazine* and the *Minnchaha*. The students met a request that all consideration of additional publications be postponed for this year, in a fine spirit of coöperation. This spring this request has been formally submitted and after careful consideration with the Senate Committee on Publications, has been approved for a trial period of a year, details of organization to be worked out by the students and this office.

Finances.—All of the publications with the exception of the *Daily* have completed the year in a financially sound condition. The *Daily*, chiefly through lack of campus support shows a comparatively small deficit at the close of the year, this deficit is cared for out of a small reserve which was created a few years ago and has been held for just such a purpose.

I wish at this point to call particular attention to the *Gopher*, our junior annual. This publication has closed each year for the last seven years with all bills paid and a balance to its credit, in most cases a small one it is true, but in this differing from similar publications in other institutions. Another very distinctive feature of our annual is the fact that it is the only one of its class which has not carried a dollar's worth of advertising for four years. Also the price to students is materially less than the price in other institutions—three dollars and a half here as against five dollars elsewhere. These three facts have aroused considerable favorable comment from representatives of other colleges and universities.

Other student activities have paid their way during the year with the exception of one of the classes. The indebtedness of this class will undoubtedly be cared for satisfactorily during the next year. Arrangements have been made with the creditors for the future care of the debts, as has been done in the past, with satisfaction to all concerned.

In the case of the fraternities, there have been few calls for assistance in collecting bad accounts. I expect a decided decrease in this number in the future as there has been started this spring a system of fraternity buying and accounting, new to Minnesota but well tried out elsewhere. This is the handling of these problems through a central agency outside of the fraternities. The system has been worked out by Mr. Paul Warner, of Wisconsin. It has been in operation there for some years, has been installed at Illinois and Michigan this past year, and will probably be installed at Ohio this coming year. There has been for some years a systematic effort to get the fraternities and sororities to put in such a system here. At the present time some fourteen of our fraternities and sororities have entered into this plan.

Dramatics.—There are four formally recognized dramatic clubs: the Masquers, the Players, the Garrick Club, and the Agricultural College Dramatic Club. This last, tho its membership is drawn from one college, becomes fairly university in character in its activities off the campus.

In the past these clubs have lived their own lives with no particular recognition or assistance from the University. Now they are coached and assisted in every way by a member of the teaching staff who has been trained for such work. The work of each of these clubs has this past year greatly improved as shown by general comment and public criticism. In addition each club is in sound financial condition.

General social activities.—Of the formal recognized affairs, the Senior Promenade, the Junior Ball, the Common People's Ball and the Military Ball, have continued with their usual popularity and success. The Sophomore Vaudeville has been discontinued. It appeared to be impossible to conduct this affair in such a manner as not to make too great a demand on the time and energies of those participating, or to finance it so that there might not be a deficit after each performance.

Added to the functions listed above each of the fraternities and sororities has given one formal party. In addition to these formal affairs there have been many informal affairs given largely by fraternity, sorority, and class groups.

There have been added to the group of recognized organizations a number of semi-social groups this year, organized chiefly to promote acquaintanceship and friendship among the members of the groups. Each of these has been entitled to hold one party each quarter on the campus.

Fraternities and sororities.—The general condition of these organizations will be covered in the reports submitted by the dean of women and the president of the Inter-Fraternity Council.

I wish at this time to call attention to the fact that the fraternities have for the year 1919-20 maintained approximately the same slight advance

in scholarship over the general average which they have held for the past seven years, while the sororities have maintained a slightly lower average than the general average for women.

In the case of professional fraternities and sororities their average has been clearly higher in all cases than the average of the non-fraternity men and non-sorority group of the individual colleges.

There have been added two new general sororities this year and three general fraternities, in two of which the membership is restricted to negroes.

There is no report to be submitted this year covering the problem of absences as all colleges have abolished the keeping of any systematic absence record.

Military.—The number of men applying for credit for University drill has of course greatly decreased from last year, tho at the beginning of the year there were quite a few and probably will continue to be for a year or so.

In coöperation with the Military Department there has been a serious attempt this year to control absences. In the past it has been a common practice on the part of a fairly large group to cut drill and take a failure for the term, continuing this practice until the student had passed into a college where drill was not required or until the student left this institution to enter another. In cases where this tendency was shown this year the student was required to return to drill for the balance of the quarter with the understanding that there would be no credit for that quarter, and if the agreement was not lived up to the student was dropped. This last action was taken in very few cases.

Self-support.—About 10 per cent of the number of men in the University are self-supporting; practically 32 per cent are partly self-supporting. About 6 per cent of the total number of women in the University are self-supporting; about 11 per cent are partly self-supporting. Of the fraternity men, 11 per cent are self-supporting; 22 per cent are partly self-supporting. Of the sorority women, .05 per cent are self-supporting; .06 per cent are partly self-supporting.

Loan fund.—Through the generosity of a group of men over town there has been put at the disposal of this office a loan fund amounting at the present time to \$600, ultimately to be \$2,000. This fund is to be used for small short loans. Many students have been found at various times when the use of from five to twenty dollars meant staying in or withdrawing from college. This fund is to be used in assisting this group.

Federal Board students.—There have been in attendance here this year four hundred and seventy-four students under the supervision of the Federal Board for Vocational Training. Of these sixty-five have for one reason and another been transferred during the course of the year.

This group of students divides itself into two groups, those who can not meet the entrance requirements of the University and are therefore not candidates for a degree, and those who can meet the entrance requirements. Taken on the whole the work of both of these groups compares very favorably with the work of the main student body.

It is surprising to find men who have progressed in school no farther than the eighth grade, who are carrying college subjects along side of men who have had the full high-school course, and are apparently more successful than the high-school graduate. As, for instance, two men, eighth grade, have completed practically two years' work with practically all grades of A and B, one pursuing engineering subjects.

A study of all the information in the case of the Federal Board men shows that they average well with the general student body. Also that the men who normally would not be accepted by the University have made a surprising showing.

There is a small percentage of the number who are approaching their work in an immature, irresponsible manner, differing in no way from a similar group in the non-Federal Board group. This group must be carefully studied and those who can not be enthused and directed into the right channels should be removed. The work with these men has been exceedingly interesting and pleasant. No one, who is in touch with this group of men and their work, can feel otherwise than that it is a great work and well worth while; a work which most certainly will later make a large return to the country in the form of useful and contented citizens.

Respectfully submitted,

EDWARD E. NICHOLSON, *Dean*

THE GENERAL EXTENSION DIVISION

To the President of the University:

SIR: This is a report of all the activities of the General Extension Division of the University of Minnesota for the year beginning July 1, 1920, and ending June 30, 1921. In the following pages will be found statistical tables, summaries, and comparisons with previous years, by whole years, and by semesters. Each activity of the division is treated separately and in detail.

As usual, the great bulk of the activity of this division has to do with the conduct of evening extension classes by members of the University faculty in classrooms on the University campus and down town in the cities of Minneapolis, St. Paul, and Duluth. This year some classes were also conducted in Virginia and Hibbing, two towns on the Iron Range. More work of this type in outside cities might be done if we had more full-time men on our own staff. A man who has regular class work on the University campus finds it difficult to leave town and return without neglecting his regular duties. One or two additional full-time men might easily be employed in conducting University classes in outside centers. The classes in the following detailed report are listed by cities under the three divisions of collegiate, business, and engineering or industrial subjects. The report is made by semesters with a summary and set of comparisons for the year. It is interesting to observe that the increased enrolment still continues. In the year, 1919-20 it was thought that the high-water mark had been reached with an increase of semester registrations over the preceding year of 112 per cent, but the registrations for the year 1920-21 represent an increase of 25 per cent even over the preceding high figures. Six thousand five hundred forty-one semester registrations in evening extension classes for one year represent a very considerable widening of the University's sphere of usefulness and activity. It is highly probable that these registrations will increase steadily from year to year and we must make provision accordingly.

For next year we plan to establish the work in Duluth on a little more stable basis. Mr. G. G. Glick, now of our Minneapolis staff, has obtained his law degree and proposes to open a law office in Duluth next September. At that time we propose to employ him as our resident manager, appoint him to teach three of our evening extension classes in that city and thereby make his office our headquarters for information, registration, and publicity. We hope to accomplish two things by this plan. First, we shall economize on the traveling expenses of the men we have been accustomed to send back and forth between Minneapolis and Duluth each week. Second, our work will have a permanent basis and we shall be enabled thereby to plan intelligently our programs from year to year.

The expansion of the work of our department of Correspondence Study still continues. For the year under review there was an increase of about

40 per cent in the registrations for correspondence study over the number for the preceding year. These are the figures for new registrations during the year and yet the figures for 1919-20 represented an advance of 132 per cent over the similar figure of the preceding year. Progress is being made in the preparation of standardized correspondence lessons and in the development of new courses. The only setback that this department has received was conveyed by the action of the faculty of the College of Engineering and Architecture during the year in refusing to accept the credits of correspondence students for work in that college without the infiction of a so-called comprehensive examination. This action was taken in the face of the fact that the subjects in question are taught through correspondence by members of the engineering faculty. The action in effect makes it virtually impossible longer to offer any correspondence courses in engineering subjects.

The work undertaken for the Extension Division by Judge Frank T. Wilson in organizing community development is meeting with moderate success. Communities all over the state are getting alive to the fact that they need welding together, that they need solidarity, and that above all they need a community consciousness that shall embrace the farmers and rural workers in all the territory tributary to the town or village. Judge Wilson has established his work under the title "Community Service." He has already developed three promising experiment stations at White Bear, at Cloquet, and at Northfield. He is busy addressing audiences all over the state on the subject of community coöperation and at the same time acting as adviser and counselor to those communities that have taken up and organized a well planned scheme of development with membership campaigns, an adequate budget, and a definite plan of work. Judge Wilson has been employed on a half-time basis in this division. In January, 1921, the commercial organizations of Minneapolis and St. Paul united in contributing enough money to take up the other half of the Judge's time and also to provide additional stenographic help and printed material. It is doubtful, however, if that kind of coöperation will be continued for another year.

Our Bureau of Visual Instruction has worked under a considerable handicap during the year. It will be remembered that the secretary of the bureau was Mr. J. V. Ankeney, who devoted to its development such time as he could spare from his duties as instructor in agricultural education on the campus of the Agricultural College. His salary was paid by the Department of Agricultural Education, and this division contributed only enough to pay him for two summer months. Early in the year Mr. Ankeney accepted a position at the University of Missouri and since that time the bureau has had to get along with such services as Mr. Field of the Department of Agricultural Education was enabled to give outside of his own very busy schedule. Mr. Field has contributed his services earnestly and enthusiastically without any additional compensation, but of course that method of handling our work can not be pursued after this year. It now needs a man who will give at least half of his time to it and who will receive half of his total salary from the budget of this division. At least

\$1,500 should be provided for that purpose. The circulation of films, slides, and charts is meeting with ready acceptance among the school men of the state. The work will grow very rapidly if it be given adequate support. At the present time there is pending a plan whereby we can buy outright ten complete programs of educational films at a very reasonable price and with the option of paying for them during six months of the coming year. These films could easily be paid for out of rentals and thereafter the films would belong to us and from them there might be accumulated a reasonably large revolving fund for the operation of the department in the future. With a revolving fund good films and slides could be bought and paid for and the fund reimbursed during the course of a year, leaving the films and slides the property of the University. I am sure that such a plan would enable us within a few years to accumulate a large library of the finest educational films without any expense whatever to the University, and at the end of that time we might well have a revolving fund of \$2,000 or \$3,000 with which to keep purchasing new and additional films. The merits of this plan are commended to your careful consideration. To carry it out, however, we should have a man who is definitely responsible for the circulation of these films and for the financial management of the entire enterprise. There should be provided \$1,500 a year for his salary and about \$3,000 a year for equipment and supplies.

Short courses in various lines are proving to be an increasingly popular form of extension activity. In addition to the well established short courses for retail merchants, for bankers, for dentists, and for women citizens, we have offered this year for the first time a short course of one month under the auspices of the Medical School. Four different branches were offered, each running for four weeks. These branches were pediatrics, medicine, obstetrics, and surgery. Only licensed practitioners were admitted and a man might take from one to four weeks as he chose. The object of these intensive short courses is to put the doctors in touch with the newest knowledge and the most improved technic in the several lines. Another short course administered this year for the first time by the General Extension Division is the course in embalming. This is longer than the other courses, running as it does through the entire twelve weeks of the winter quarter. This course is run under the auspices of the Medical School and in coöperation with the State Board of Health. In most of these short courses this division does only the administrative work and the interested departments supply the subject-matter and the teaching force. The exceptions to this rule are the course for bankers, the course for retail merchants, and the course in citizenship for women voters. In these cases this division organizes the subject-matter and procures the lectures as well as administers the course.

The Lecture and Lyceum Department is maintaining its service for about two hundred Minnesota towns. The towns buy their series of attractions from the University under a contract and the Extension Division makes the engagements with the lecturers and other artists. The University in this capacity, therefore, is acting as an agent between the interested

communities of the state and those who have their services to sell as artists or lecturers. This service of the University is meeting with commendation and grateful appreciation from the small communities of the state. The Extension Division aims to furnish this service at cost with a reasonable allowance for overhead expenses. The aim now is to reduce the number of attractions offered and to elevate the quality. Mr. A. William Olmstead as the head of this department, has had a very successful year of administration. I regret to inform you that his resignation is now in my hands, effective September 1, 1921. He is to go to the University of Kansas at an advance of salary and of rank. I am apprehensive that his position will be a very difficult one to fill.

The Drama Service of this division during the past year has been directed by Mr. G. G. Glick on a part-time basis. Mr. Glick has also been employed to teach two or three of our evening extension classes. He did this work while at the same time engaged in carrying a full program in the Law School. Mr. Glick leaves us at the close of the year and a successor, therefore, will have to be appointed for next year. A good library of choice plays is slowly being accumulated and the service rendered to inquirers is being strengthened.

The Municipal Reference Bureau is maintaining well its program of usefulness for the city officials of the state. The detailed report later will show that Mr. J. C. Taylor, the head of the bureau, has answered many inquiries, has drawn up ordinances, has assisted in drafting city charters, and in formulating municipal legislation. His work as editor of the official magazine of the League of Minnesota Municipalities has been greatly appreciated by city officers. In this bureau, however, I am convinced that we are not paying a large enough salary to secure the right type of man to make a permanent place. In the last four or five years we have lost three men from this position. I am, therefore, asking that for the next biennium the salary for this position be increased by at least a third. The arrangement with the Bureau for Research in Government by which the two bureaus maintain a joint office and employ jointly the services of a cataloger and a stenographer is working well. It is in the interest of economy that this arrangement be continued. Mr. J. C. Taylor, the present head of the bureau, will not remain with the bureau after July 1, 1921.

I must again remind you that for some years the General Extension Division has occupied very cramped quarters on the ground floor of the Main Engineering Building. These quarters are not now adequate for our use and they are also greatly needed by the College of Engineering. It is understood that this division is to be housed ultimately on the fourth floor of the new Administration Building. The erection of that building seems now to be indefinitely postponed. It might be well, therefore, when the remodeling of the present Library Building is undertaken, to see if there might not be arranged therein adequate quarters for the General Extension Division.

At the close of this report will be found a comparative statement of all the extension activities by years. This will enable the reader to follow the growth and development of the various forms of extension work.

The director of University Extension has been granted by the Board of Regents a sabbatical furlough from October 1, 1921, to July 1, 1922. He proposes to spend this academic year in the Graduate School of Education of Harvard University in the study of educational administration. During his absence it is proposed to appoint Mr. J. J. Pettijohn, assistant to the president of the University, as acting director.

I should like at this time to express my appreciation of the unqualified support and cooperation I have received in the administration of the Extension Division from the members of the clerical, administrative, and teaching staff of the division, from my colleagues in the several schools and departments of the University and from the general University administration. In the past eight years these elements have all contributed notably to bringing this division to its present position of influence and service.

This report with its tables and other statistical material is herewith respectfully submitted.

SUMMARY FOR THE YEAR

1920-21

NUMBER OF STUDENT REGISTRATIONS

DEPARTMENT	FIRST SEMESTER	SECOND SEMESTER	YEAR
COLLEGIATE			
Minneapolis	1,446	1,024	2,470
St. Paul	226	194	420
Duluth	51	162	213
Virginia	15	....	15
Total	1,738	1,380	3,118
BUSINESS			
Minneapolis	1,085	739	1,824
St. Paul	390	270	660
Duluth	132	57	189
Virginia	40	....	40
Total	1,647	1,066	2,713
ENGINEERING			
Minneapolis	383	264	647
Duluth	43	....	43
Hibbing	20	....	20
Total	446	264	710
Totals	3,831	2,710	6,541

THE PRESIDENT'S REPORT

SUMMARY FOR THE YEAR
1920-21
NUMBER OF EXTENSION CLASSES

DEPARTMENT	FIRST SEMESTER	SECOND SEMESTER	YEAR
COLLEGIATE			
Minneapolis	30	35	65
St. Paul	9	10	19
Duluth	2	1	3
Virginia	1	..	1
Total	42	46	88
BUSINESS			
Minneapolis	30	28	58
St. Paul	17	14	31
Duluth	6	5	11
Virginia	2	..	2
Total	55	47	102
ENGINEERING			
Minneapolis	21	20	41
Duluth	2	..	2
Hibbing	1	..	1
Total	24	20	44
Totals	121	113	234

COMPARISON OF THE ENROLMENT OF EXTENSION CLASSES FOR THE
YEAR 1919-20 AND THE YEAR 1920-21
SUMMARY OF STUDENT REGISTRATIONS

DEPARTMENT	1919-20	1920-21	GAIN
Total collegiate	1,952*	3,118*	1,166*
Total business	2,337*	2,713*	376*
Total engineering	927*	710*	-217*
Totals	5,216*	6,541*	1,325*
Total number of individuals.	3,335	3,987	652

SUMMARY OF FEES

DEPARTMENT	1919-20	1920-21	GAIN
Total collegiate	\$ 7,780.50	\$11,844.00	\$ 4,063.50
Total business	17,546.25	20,917.50	3,371.25
Total engineering	5,245.00	5,397.50	152.50
Totals	\$30,571.75	\$38,159.00	\$7,587.25

* This is the total number of student semester registrations for sixteen weeks each.

GRAND SUMMARY FOR THE YEAR
1920-21
NUMBER OF STUDENT SEMESTER REGISTRATIONS

DEPARTMENT	FIRST SEMESTER	SECOND SEMESTER	YEAR
Total collegiate	1,738*	1,380*	3,118*
Total business	1,647*	1,066*	2,713*
Total engineering	446*	264*	710*
Totals	3,831*	2,710*	6,541*

Total number of student semester registrations for the year 1920-21 was 6,541.
Total number of individuals taking work during the year 1920-21 was 3,987.

FEES

DEPARTMENT	FIRST SEMESTER	SECOND SEMESTER	YEAR
Total collegiate	\$ 7,022.50	\$ 4,821.50	\$11,844.00
Total business	12,145.00	8,772.50	20,917.50
Total engineering	3,417.50	1,980.00	5,397.50
Totals	\$22,585.00	\$15,574.00	\$38,159.00

* This is the total number of student semester registrations for sixteen weeks each.

CORRESPONDENCE COURSES

The number of registrations, 828, shows an increase of 233 or about 40 per cent over that of last year, and 219 per cent over that of two years ago. This means the large increase for the biennium came in its first year, when there was a growth of 93 per cent, the number practically doubling. To be sure, we can not expect the registration to double every year, but for a time we should expect a yearly increase in registration of about 50 per cent until the work is fully known, and until all those who are interested in adult education by correspondence whose wants we are ready and able to supply have come into the department. The smaller increase this year as compared to that of last is directly attributable to the smaller amount of circularization done. If the kind of growth I have indicated is to be maintained, there must be some steadily used means of keeping the work of the department before the public. The chief means we have for doing this is circularization, but this requires clerical work which must be available at any time during the fall and early winter when circularization is productive of the best results. This we did not have during the past year. It is to be hoped that the staff may be increased sufficiently to make possible a fairly extensive program of circularization in 1921-22.

The number of students whose courses have lapsed this year is out of proportion to those who have completed. This is largely due to the registrations under the War Service Tuition Act, an undue proportion of

the students registering under this act having failed to complete their courses; it is also partly due to the lack of time to get out follow-up letters. These had to be neglected during the busiest season, when they are most effective, as it was then a problem to keep abreast of the urgent needs of the working students.

Enough has been stated to show that the normal growth of the department requires additional clerical and stenographic assistance each year. It is to be hoped that arrangements can be made to supply this. The volume of business—\$8,010 actually paid in and nearly \$1,000 in War Service Tuition—warrants it.

It is axiomatic that piece-work does not give satisfaction in education. It is difficult to have good courses prepared and to keep courses revised and up-to-date when the teacher is paid only on the basis of the lessons corrected. During the past two years there has been some attempt to have more time put on the preparation of the courses by paying a small sum per lesson. This has worked successfully and has resulted in the preparation of some half-dozen courses that are in very good form. It, however, does not guarantee revision as time goes on and is not therefore an adequate solution of the problem of good courses in correspondence. The only real solution is placing the teaching on a part-time system with a definite salary consideration. The teacher will then be paid for the time that is given to the correspondence work on the basis of his residence salary, and will be relieved of part of his residence load of teaching. He can then give time to course preparation and revision without feeling that he is giving his leisure to the University without compensation. There is enough work in several departments, notably English-Rhetoric, Mathematics, Education, History, and Romance Languages, to make such an arrangement immediately advisable. It should be considered in any plan for future expansion.

The following table summarizes the correspondence work for the year

1920-21:

Number of students on roll July 1, 1920.....	508
Number of new students registered July 1, 1920, to July 1, 1921.....	731
Number of courses registered for July 1, 1920, to July 1, 1921.....	828
Number of expirations not reinstated during the year.....	312
Number of courses refunded or cancelled during the year.....	21
Number of reinstatements during the year.....	57
Number of courses completed during the year.....	226
Number of registrations in force during the year	
in business subjects	230*
in collegiate subjects	989*
in engineering subjects	98*
in preparatory subjects	128
Total	1,445
Number of active students sending four or more lessons.....	621
Number of active students sending less than four lessons.....	189
Number of students recently registered and not yet started.....	208
Number of inactive students whose terms have not expired.....	102
Number of students registered for two courses.....	97
Number of instructors carrying courses.....	51
Number of students on roll July 1, 1921.....	732
Number of courses active July 1, 1921.....	888

* Includes collegiate courses.

COMPARATIVE STATEMENT 1913-21

ALL COURSES	1913-14	1914-15	1915-16	1916-17	1917-18	1918-19	1919-20	1920-21
Number of classes.....	112	161	143	163	141	111	186	234
Number of instructors from Extension Division.....	6	7	6	5	5	5	5	4
Number of instructors from outside Extension Division	44	55	47	56	50	45	72	104
Number semester registrations	2,215	2,350	2,854	3,767	2,686	2,461	5,216	6,541
Fees received from registra- tions	\$11,833.50	\$17,221.00	\$15,544.75	\$20,422.00	\$14,943.75	\$13,458.00	\$30,571.75	\$38,161.50
Salaries paid to instructors on extension staff.....	.....	\$14,400.00	\$11,400.00	\$9,000.00	\$10,150.00	\$7,800.00	\$10,450.00	\$9,200.00
Fees paid to instructors not on extension staff.....	.....	\$15,130.50	\$14,435.00	\$19,011.50	\$15,625.75	\$14,427.52	\$26,548.00	\$38,627.30

THE PRESIDENT'S REPORT

COMPARISON OF ENROLMENT, 1915-21

	Aug. 1 1915	Aug. 1 1916	Aug. 1 1917	Aug. 1 1918	July 1 1919	July 1 1920	July 1 1921
Number of students on the roll	100	196	208	177	248	508	732

	1915-16	1916-17	1917-18	1918-19	1919-20	1920-21
New students	199	190	151	223	504	731
Number of active students dur- ing the year.....	182	247	210	312	464	958
Number of completions	86	110	99	91	124	226
Number of students carrying two courses	80	85	88	74	126	120
Number of instructors	35	41	40	39	52	51
Number of courses registered for	252	239	180	256	595	809

	Aug. 1 1916	Aug. 1 1917	Aug. 1 1918	July 1 1919	July 1 1920	July 1 1921
Number of students on the roll..	196	208	177	248	508	732
Number of students active.....	96	143	91	179	349	639

SHORT COURSES

SUMMARY FOR THE YEAR 1920-21

	NUMBER OF REGISTRATIONS	FEES RECEIVED
DENTISTRY		
Prosthetics (June 14 to July 10, 1920).....	19	\$ 4,750.00
Prosthetics (July 12 to July 24, 1920).....	32	4,800.00
MERCHANTS (January 31 to February 4, 1921).....	143	715.00
DENTAL MECHANICS (September 29, 1920 to June 14, 1921)	32	1,600.00
BANKERS (January 17 to January 21, 1921).....	227	489.00
CITIZENSHIP (January 24 to January 28, 1921).....	202	300.00
EMBALMING (January 4 to March 24, 1921).....	38	1,786.00
MEDICAL (May 2 to May 28, 1921).....	32	790.00
Total	725	\$15,230.00

LECTURE AND LYCEUM DEPARTMENT

Number of different attractions used.....	44
Number of members of University faculty.....	18
Number taken from outside the University.....	31
Total number of towns served	208
Total number of attractions	909
Total amount of fees	\$48,159.55
Total number of persons in audiences represented...	225,000

COMPARISON
COURSES

	1914-15	1915-16	1916-17	1917-18	1918-19	1919-20	1920-21
Number of towns having courses	100	110	136	180	176	178	208
Number of engagements filled	522	541	654	905	780	837	909
Price of courses	\$25,040.83	\$29,145.00	\$34,692.00	\$38,814.50	\$33,087.50	\$43,692.20	\$48,359.55

SINGLE LECTURES

Number of towns having lectures ...	89	42	14	12	16	48	25
Number of engagements filled	94	59	27	14	21	74	51
Amount of fees	\$2,784.49	\$1,785.00	\$560.00	\$280.00	\$275.00	\$880.00	\$330.00

Courses of from three to twelve numbers have been booked in 190 towns for delivery during the year 1921-22. Additional bookings will continue to come in until the last of September.

COMMENCEMENT ADDRESSES

In addition to the lectures and entertainments listed above, commencement addresses were arranged as follows:

Number of towns served	68
Number of different persons used in filling these engagements	36

BUREAU OF VISUAL EDUCATION

Towns having film service	101
Towns having slide service	86
Towns having both slide and film service.....	38
Number of film services	868
Number of slide services	629
Total attendance at meetings, films	186,017
Total attendance at meetings, slides	85,593
Persons reached by film service	35,522
Persons reached by slide service	15,856

COMMUNITY SERVICE

The work for the year 1920-21 has been a continuation of the presentation of the University plan of community service to various communities throughout the state. This has been done by extensive correspondence, many conferences, and numerous public addresses. The conferences have been held from time to time with representatives of various organizations

interested in community activities. Special monthly bulletins have been published without expense to the University which, with publicity slips issued by the University, have been widely circulated. The Minnesota Federation of Women's Clubs together with the Minnesota Retail Hardware Association have been very helpful in distributing this publicity matter. Both organizations have manifested a deep interest in the success of the community service program.

A special feature of the year's work has been an auxiliary organization known as the Minnesota Community Service. The following institutions have endorsed the community service project and have given assurances of a willingness to cooperate in every practical way:

1. The state departments of Agriculture, Highways, Health, and Labor.
2. Special organizations including the American Legion, the Minnesota Federation of Farm Clubs, the Minnesota Federation of Women's Clubs, Minnesota State Health Association, Minnesota Highway Improvement Association, Minnesota Association of Community Secretaries, Minnesota Retail Hardware Association, and the United Commercial Travelers.

The purpose of this auxiliary organization has been to cooperate with the University in giving publicity to community service and the establishment of community experiment stations. Special credit is due to the civic associations of St. Paul and Minneapolis for funds contributed and services rendered in promoting cooperation with the University. A notable result of the cooperation has been the establishment of community service organizations at Two Harbors, Cloquet, Carlton, White Bear, and Northfield. At White Bear, Cloquet, and Northfield special organization campaigns were carried on with great success. Special features of these experiment stations comprise widespread community interest, institutional membership, special programs of work, community service departments in the local press, and competent leadership.

The methods used in carrying on these community campaigns have proved to be sound and successful in practice.

Special attention has been given to organizing store bureaus for the purpose of securing community cooperation between merchants as a means of withstanding outside competition.

White Bear is doing a notable piece of work in the development and execution of plans to convert a former Y.M.C.A. building into a model community home.

These experiment stations have been under the active supervision and direction of the extension service. Cloquet and Northfield have had the special service of Mr. James M. Ford who has proved to be a skillful organizer. Mr. Ford has been a representative of the Auxiliary Organization.

The University program of community service has been received with unqualified approval wherever presented. Many communities are expressing a desire to reorganize and put in operation the University program. Several small communities have of their own motion proceeded along the lines suggested in the University booklet dealing with community service.

There is a great need for follow-up work or supervision of communities which undertake the community service plan. Closer coöperation and coördination with existing departments of the University and especially the Farm Bureau could accomplish this result with little or no extra expense.

Plans are being perfected which may result in a store bureau similar to the Farm Bureau which with close coöperation between these two bureaus will do much to solve the problems of the home trade and home markets.

In response to a special invitation the community service presented the subject of community markets at the summer school of the American City Bureau held at the University of Wisconsin in August, 1920. In response to another special invitation the Minnesota plan of community service was presented as a part of a merchants' short course of the University of Manitoba held at Winnipeg in March, 1921, and also at the same time to a convention of school trustees of the Province of Manitoba, and also to a social service circle of the same province. These meetings were held at Winnipeg simultaneously with the merchants' short course.

DRAMA SERVICE

The estimated total of inquiries is	390
The estimated total of plays sent out is.....	2,450
The estimated total of towns who have made a choice....	105
The number of towns making inquiries	225

Inquiries received.—During the year the service received inquiries from at least two hundred communities. Among these inquiries were requests for plays for reading, also requests for information regarding play selection and play-staging.

Plays sent for reading.—The drama service sent out over the state of Minnesota for reading at least 3,000 plays. The plan is to mail to each school making requests, a group of at least five or six plays suitable to the needs of that school. If the school finds it impossible to select from this first list, another group of plays is sent, until the school makes its selection.

Results of the service.—As a result of the drama service at least a hundred Minnesota communities made play selections during the past year—an increase of nearly 25 per cent over the number served the preceding year. The estimated number of people who saw the production of dramas was at least forty thousand.

New plays.—Through the generosity of a number of publishing companies including French & Company, Walter H. Baker, and Charles Scribner's Sons, the drama service added to its library during the year just past 76 new plays. These plays were sent to the drama service without charge.

Recommendations.—In order to enable the service to carry on its work effectively the next year, it will be necessary to add to the library a generous supply of pageants, children's plays, and operettas. The demand for these types of drama is growing from year to year, and the demand should be met. An allowance of \$100 a year would enable the drama service to supply the increasing requests for these and other types of dramatic material.

MUNICIPAL REFERENCE BUREAU

The following is the report of the Municipal Reference Bureau from July 1, 1920 to June 30, 1921.

Inquiries from Minnesota municipalities	119
Inquiries from municipalities in other states.....	17
	— 136
Requests for bulletins	11
Total loans	295
(Including 160 clips, 128 pamphlets, 5 books)	

Bulletins.—A bulletin service to all the municipalities of the state was undertaken January 1, 1921. Three bulletins have been issued. One descriptive of the work of the Municipal Reference Bureau and the service it offers to municipal officers; a five-page bulletin containing comparative taxation statistics of Minnesota municipalities for the year 1920; and a two-page bulletin descriptive of the new wheelage tax law. A fourth bulletin containing paving statistics of Minnesota cities is in preparation for the month of June.

Character of inquiries.—The following subjects indicate the kind of inquiries received: gambling and pool hall ordinances; paving; public utility franchises; milk regulation; filtration plants; public utility rates—gas, water, and electricity; special elections; charter drafting and amendment; dog licenses; railroad crossings in municipalities; liability of municipalities for their torts; non-partisan elections in Minnesota.

Ordinances were drafted on the following subjects: moving pictures; plumbing; excavations in public streets; gambling; electric wiring.

Public-utility rates.—A revision of the bulletin *Minnesota Public Utility Rates*, published by the University in 1914, is about complete and ready for reissue. At the present time there is a particular demand for information relating to public-utility rates and if this book could be made available at once, it would be a great service to the municipalities of the state. The date of the old edition makes the information contained therein more misleading than useful.

The municipal exhibit.—The Municipal Reference Bureau with the Bureau for Research in Government was asked by the League of Women Voters to produce a municipal exhibit at their state convention in December, 1920. The exhibit was displayed in one of the foyers of the Curtis Hotel, Minneapolis. It was under the direction of Miss Sophia Hall of the bureau.

Courses in municipal government.—The secretary of the bureau has in preparation a correspondence course in elementary municipal government for the Extension Division. The course consists of eight lessons: forms of municipal government, municipal administration, public health, police organization, education, public utilities, municipal aesthetics, and municipal finance.

A study outline course in municipal government was prepared by Miss Sophia Hall of the bureau for the women's clubs and individuals interested in civics. There seemed to be a need for something prepared with local

state conditions in mind. This outline may be used by the Correspondence Department as one of a series of study courses.

Talks.—The secretary made two talks during the year, one before the Charter Commission of White Bear, and one before the Minnesota Association of Community Secretaries. The former took up the problem of the local home rule charter, and the latter was upon the subject of the "Relationship of the Community Organization to the Municipal Official."

Miss Hall also made a talk upon municipal government before a Minneapolis woman's club.

League of Minnesota Municipalities.—The secretary of the bureau, as acting executive secretary of the League of Minnesota Municipalities, conducted the league's campaign for the adoption of the gross earnings tax amendment to the constitution at the last November general election. A series of four editorials was sent to all newspapers in the state. All municipal officers were circularized urging their coöperative effort in favor of the amendment. The election issue of *Minnesota Municipalities* of which the secretary of the bureau is editor, was sent to all municipalities, as well as to all commercial clubs. An appeal for support was addressed to all labor union posts. Five thousand posters were distributed.

A legislative conference of municipal officers was held in St. Paul on January 26, 1921. Over a hundred municipal officers and about sixty municipalities were represented. Resolutions were passed expressing to the legislature the sentiment of the league upon ten issues: refundment to cities for streets which are to become part of the trunk highway system under the Babcock Amendment, non-interference with the principle and practice of home rule, repeal of the Minette Law, refundment to municipalities from county road and bridge funds, amendment of the compulsory restroom bill, repeal of the watermain assessment maximum, reclassification of cities, municipal primary elections, increased compensation of election officers; and the non-passage of a pending bill providing for division of villages were recommended to the legislature. A printed copy of these resolutions was placed in the hands of every member of the legislature.

Not all of these resolutions were favorably acted upon, but the larger part achieved favorable results.

In the middle of April, 1921, after the telephone companies had appealed to the Federal Court from the order of the Railroad and Warehouse Commission denying the companies rate increase, the secretary of the bureau as acting executive secretary of the league addressed a circular letter to the league members to determine whether or not there was sufficient support among the municipalities to warrant the league in employing an expert for an investigation. Thirty-six municipalities answered; thirty-four expressed a willingness to contribute to such an enterprise. Pledges and contribution to the amount of \$555 were secured.

Unfortunately the amount was too small to undertake independent action, but it is hoped some investigation on the behalf of the municipalities may be commenced in the near future.

Miscellaneous.—A talk was delivered by the secretary on municipal government before a civic government organization in northeast Minneapolis.

The statistical table of comparative municipal taxation was prepared for the year 1919 also and printed in *Minnesota Municipalities*.

Two articles one upon the city manager plan, one upon commission government, besides short editorials, were written for *Minnesota Municipalities*.

The secretary as executive secretary of the League of Minnesota Municipalities made a two-day trip to Winona in May for the purpose of getting material for a convention issue of the league magazine, and to look over the ground in preparation for the annual convention, June 15 and 16.

Recommendations.—The secretary earnestly recommends that more funds be made available for the publication of bulletins from this office. Altho the mimeographed form of the monthly bulletin is satisfactory for material of temporary importance, certain publications of a more permanent nature ought to be made. The revision of Mr. Gesell's *Minnesota Public Utility Rates*, published in 1914 as one of the research bulletins of the Graduate School, is now ready, and the present demand indicates the desirability of its immediate printing. A code of model ordinances, the larger part drafted in this bureau, ought to be made available to municipal officers in printed form. A manual of the municipal law of the smaller municipalities ought to be published in intelligible form. As the statutes now stand, it is extremely difficult, if not impossible, for the average municipal officer to understand his legal duties and the way in which the law requires them to be handled. Such a publication would be a long step toward the much needed codification of municipal law in this state.

Respectfully submitted,

RICHARD R. PRICE, *Director*

COMPARATIVE STATEMENT OF ALL ACTIVITIES OF THE GENERAL EXTENSION DIVISION

	1913-14	1914-15	1915-16	1916-17	1917-18	1918-19	1919-20	1920-21
EVENING CLASSES								
Number of semester registrations.....	2,015	3,350	2,854	3,830	2,686	2,461	5,216	6,541
Number of individuals during the year without duplication.....	1,552	2,539	1,951	2,371	1,825	1,741	3,335	3,987
Number of semester classes.....	122	161	143	163	141	111	186	234
CORRESPONDENCE COURSES								
Number of registrations from July 1 throughout the fiscal year....	83	102	199	190	151	256	595	809
SHORT COURSES								
Merchants' short course.—Number of registrations.....	138	231	134	125	125	168	148	143
Social service courses.—Number of registrations.....	...	...	...	...	41	25	162	...
Trade and industrial courses.—Number of registrations.....	...	...	...	...	...	97	70	...
Short courses for dentists.—Number of registrations.....	...	...	...	...	50	76	125	51
Short course in citizenship.—Number of registrations.....	...	...	...	...	...	...	611	202
Bankers' short course.—Number of registrations.....	...	...	...	...	...	...	243	227
Dental mechanics.—Number of registrations.....	...	...	...	...	...	...	...	32
Course in embalming.—Number of registrations.....	...	...	...	...	...	...	...	38
Medical short course.—Number of registrations.....	...	...	...	...	...	...	...	32
LECTURE AND LYCEUM DEPARTMENT								
Number of towns having courses.....	37	100	110	136	180	176	178	208
Number of engagements filled at above towns.....	184	522	541	654	905	780	837	909
Number of single engagements.....	68	124	82	100	57	73	138	51
VISUAL INSTRUCTION								
Number of towns having slide and film service.....	11	52	80	108	62	37	126	187
Number of showings of slides and films.....	...	106	205	343	463	185	684	1,497
DRAMA SERVICE								
Number of towns served.....	...	...	...	193	226	178	142	105
Number of inquiries received.....	...	...	...	353	361	329	275	225
Number of plays sent.....	...	...	...	1,143	1,918	1,420	1,493	2,450
MUNICIPAL REFERENCE BUREAU								
Number of towns making inquiries.....	53	80	100	102	72*	96	88	119
Number of inquiries received.....	...	...	200	225	225	200	216	147

* This does not indicate a lack of interest in, or appreciation of, the service rendered by the Municipal Reference Bureau as it might seem at first glance. Inquiries were anticipated by questionnaires and the results, after being compiled, were sent out.

THE SUMMER SESSION

To the President of the University:

SIR: I submit the following report as director of the Summer Session from June 20 to July 30, 1921.

The total enrolment for the two terms of the Summer Session showed the following:

Total enrolment for the two terms.....	3,238
Total enrolment for the first term.....	2,587
Total enrolment for the second term.....	651
New students in second term.....	100
Total enrolment for two terms, less duplicates.....	2,687

The enrolment by colleges, less duplicates, and compared with the figures for 1920, was as follows:

	1920	1921
Agriculture	231	200
Business	12	62
Chemistry	41	52
Dentistry	116	164
Education	410	649
Engineering	170	96
Graduate	185	228
Law	28	61
Medicine	195	246
Pharmacy	6	6
Science, Literature, and the Arts.....	587	923
Total	1,990	2,687

Staff.—The Summer Session staff of instructors numbered 193, 18 of whom were not members of the regular University staff.

The following instructors from other institutions were employed: Frank T. Stockton, University of South Dakota, Department of Economics; Irving W. Jones, University of Texas, associate director of the Summer Session in charge of recreation; H. B. Hungerford, University of Kansas, Department of Entomology; Hazel Manning, University of Wisconsin, Division of Home Economics; H. H. Amos, high school, Sandstone, Minnesota, Division of Poultry Husbandry; J. B. Sears, Leland Stanford Junior University, College of Education; Fred B. Yoder, University of Missouri, Department of Sociology; Mrs. Eleanor Poehler, McPhail School of Music and Dramatic Art, Department of Music; Earl Baker, Minneapolis public schools, Department of Music; A. L. Keith, Carleton College, Department of Latin; M. M. Guhin, State Director of Americanization for South Dakota, Department of Anthropology and Americanization Training; W. C. Smith, University of the State of New York, Department of Anthropology and Americanization Training; R. E. Dugdale, director of Americanization in the Toledo (Ohio) public schools, Department of Anthropology and Americanization

Training; G. H. Woollett, University of Mississippi, School of Chemistry; Clara Burrows, Newark (New Jersey) public schools, College of Education; O. J. Johnson, St. Paul public schools, College of Education; Frederick Kuhlman, State School for the Feeble-Minded, Faribault, College of Education, George Selke, Minnesota State Department of Education, College of Education.

Recreation.—Recreational and allied activities on the campus were organized under the direction of Professor Irving W. Jones, and there developed a very wide interest and participation in these activities among the student body. Among the activities conducted were the following:

Four convocations, addressed by President L. D. Coffman; Professor Joseph Jastrow, University of Wisconsin; Honorable J. M. McConnell, Commissioner of Education of Minnesota; and Mr. John Seaman Garns, McPhail School of Music and Dramatic Art. Besides the convocation addresses about twenty-five lectures on various topics were delivered by members of the Summer Session faculty and by speakers secured from other educational institutions. Six weekly musical recitals were given by some of the best artists of the Twin Cities. Each Wednesday evening, from seven to eight, a song and play hour was devoted to singing and supervised plays and games. Four Saturday afternoon excursions to nearby places of interest were personally conducted. Five purely social gatherings were held on Friday evenings on the campus. The Shakespeare Playhouse Company presented two performances on the campus.

The second Summer Session.—Excepting in the Medical School and the Law School the Summer Session consists of a six-week term. For a number of years, however, at the close of the regular session, groups of students have petitioned the University to continue, for a period of five weeks, courses in the schools and colleges that have not conducted work beyond the Summer Session. In response to this demand classes have been established under the title of "continuation courses." This year the number of students petitioning was unusually large. Consequently on July 21 the director announced that a second Summer Session would be held. A curriculum and a schedule of classes were outlined and published in the *Official Bulletin* on July 21, 22, and 23. On August 1 a second session opened with an enrolment of 651 students, including the students in law and medicine. The rules and regulations of the first session were applied to the second.

General recommendations.—In view of the interest in the second Summer Session I recommend (1) that the Summer Session be changed from six weeks to eleven weeks, consisting of two terms, the first to continue six weeks and the second five weeks; (2) that students be enrolled by terms; (3) that the rules and regulations adopted for the Summer Session be applied to both terms; (4) that the program for both terms be announced in the *Summer Session Announcement of Courses*, the bulletin issued in March; (5) that the instructors be engaged for the first and second terms, and that all necessary preparation be made for both terms when the Summer Session budget is adopted.

The salaries for the Summer Session instructors at the University of Minnesota are slightly less than in any of our neighboring universities. I therefore recommend that the basis of salary be changed from one ninth to one eighth of the annual salary. Such an adjustment will place our salary schedule on a par with that of most other educational institutions.

The fees for the University of Minnesota Summer Session heretofore have been fixed on the credit hour basis with special fees for registration, and certain services such as health, recreation, gymnasium, and the post-office service. I recommend that these special fees and the credit hour fee basis be abolished, that a flat fee of twenty-five dollars per student be charged for registration, and that no special fees be charged excepting \$1.50 per laboratory course.

There have been no courses in physical education for men offered in past years. The growing importance of this subject in public education and the urgent requests of the Summer Session students make it essential that we offer a number of such courses in the next Summer Session. I therefore recommend that a number of courses in physical education for men be offered, and that our facilities for physical education and training be more fully utilized.

Respectfully submitted,

JOHN J. PETTIJOHN, *Director*

DEPARTMENT OF PHYSICAL EDUCATION FOR MEN

To the President of the University:

SIR: I herewith submit my annual report for the year 1920-21.

The chief tasks undertaken by the department were practically the same as in former years.

1. Physical examination of all new matriculants and all those using the privileges of the department, and medical inspection of same.

2. Administration of a special lecture on sex hygiene.

3. Lectures on personal hygiene for all freshmen in the University, excepting mining engineers.

4. Conducting organized classes in gymnastics and calisthenics for all freshmen in the College of Science, Literature, and the Arts and the School of Chemistry.

5. Conducting special course for physical defectives in all colleges of the University.

6. Promotion of intramural sports, such as baseball, basket-ball, tennis, handball, swimming, ice-hockey, track and field athletics, boxing and wrestling.

7. Promotion of miscellaneous sports and physical activities including gymnastics, track, and field events, Sigma Delta Psi (the honorary athletic fraternity), and basket- and volley-ball.

8. Promotion of minor intercollegiate athletics.

9. Organization and administration of special features of physical education.

Physical examinations.—1. Careful physical and medical examination was given all new students entering the University. This examination was given in conjunction with the University Health Service, and included the personal history of the student; inspection and examination of the heart, lungs, nose, throat, teeth, eyes, ears, skin, and body in general; prescription of corrective exercise where indicated.

2. Medical inspection was required of all students using the department privileges, such as shower baths, swimming pool, towel exchange, gymnasium, training quarters, and athletic field.

3. A second physical examination, at the end of the school year, was required of all students taking the regular physical education course.

During the year a total of 3,406 examinations was made, divided as follows:

Original examinations, with measurements.....	1,925
Reexaminations, with measurements.....	545
Medical inspections.....	936
Health consultations—referred to Students' Health Service	
First aid cases—referred to Students' Health Service	

Special lecture.—A total of 1,363 students attended the special lecture on sex hygiene, as required of all students entering the University for the first time.

This lecture was given in two divisions by Dr. H. L. Williams and Dr. Charles A. Erdmann.

Personal hygiene lectures.—There was an enrolment of 1,416 students for this course, consisting of twelve lectures, given twice a week. The course embraced the following subjects: the human body briefly considered, nutrition, general and corrective exercises, bathing, hygienic hints, including suggestions on rest, selection of student's living and sleeping room, care of the eyes, teeth, etc., sources of infection and control of same, and first aid to the injured. Themes were required during the course with a written examination at the close.

Gymnasium classes.—A total of 1,648 students was enrolled in organized groups and classes, conducted twice a week as required by the curriculum. Of this number 847 students were enrolled for gymnastics and calisthenics, 395 for swimming, 113 for boxing, 33 for wrestling, 31 for athletics, 214 for corrective work, and 15 for advanced class. All students taking the course, except defectives, were required to pass eight efficiency tests for credit in physical education. Three of these tests were required in the first and second quarters, and five in the third quarter. The former were in swimming, bar vaulting, and set exercises on apparatus; the latter in life-saving, running, jumping, and apparatus work. The standards required in all the exercises are such that the average student, with the training given, can meet them, and are the result of careful study by the department. The swimming test revealed that about 300 of the students, taking the required work, could not swim at the beginning of the fall quarter, and of this number more than 95 per cent have learned, and passed the first quarter test by swimming 120 feet.

The average attendance in the pool approximated 4,000 students per month, with a total attendance for the college year of about 36,000.

An extension class for women has been conducted in the pool, two hours per week, with an enrolment of 82.

Corrective gymnastics.—The defectives were grouped according to condition, and were under the direction of a medically trained instructor, who supervised the execution of the corrective exercises as indicated. These defectives were excused from the tests required of other students, but were required to come three times each week for exercise. A student whose petition for excuse from military drill on account of physical disability was granted was assigned to one of these groups.

Intramural sports.—Intercollege, interfraternity, and all-University contests were held in basket-ball, baseball, handball, ice-hockey, swimming, track and field events, tennis, boxing and wrestling, with a total participation of 1,452 students. (This number includes some duplications.) See report of Intramural Sports Committee.

Miscellaneous physical activities.—Sigma Delta Psi, the honorary athletic fraternity, is well established at Minnesota. Seventeen athletic

trials were held during the college year in the following events: football punt, baseball throw, running high jump, running broad jump, 100-yard dash, 220-yard low hurdles, pole vault, shotput, 2-mile run, 10-mile walk, and tumbling. Eighty-six students are candidates for the fraternity. Three senior and one junior grade certificates were awarded at the close of the year to the following named students: Seniors—George A. Schurr, senior academic; David A. Kribs, junior agriculture; Cyril S. Olson, freshman academic. Junior—John D. Severance, sophomore academic.

The department provides locker accommodations for 98 faculty members who use the handball and tennis courts, the showers, pool, and running track.

Promotion of minor intercollegiate athletics.—A. Gymnastics: The University gymnastic team participated in the annual Conference Gymnastic Meet held at the University of Indiana in March, and was awarded first place in the all 'round championship and third place in team championship. The team also participated in the annual Northwestern Gymnastic Society Meet and was awarded first place in class "A."

B. Wrestling: The wrestling team participated in two dual meets, one with the University of Iowa and the other with Ames, losing both meets.

C. Ski team: The University of Minnesota ski team defeated the University of Wisconsin ski team on February 12 and 13 at Minneapolis.

Recommendations for the future.—Too strong an emphasis can not be placed on the need for a new gymnasium and more ground for intramural sports. The Department of Physical Education shares the Armory with the Athletic Department, the Military Department, and the Committee on University Functions. The Athletic Department uses the building for football practice, basket-ball, and track athletics, while the Military Department, with its heavy schedule of drill periods, occupies the building the major part of the time, and about fifty miscellaneous functions are held in it during the year. This seriously embarrasses the Department of Physical Education in its efforts to carry out the regular program of class exercises and indoor intramural sports.

The promotion of intramural sports is greatly curtailed because of the lack of room both indoors and out of doors, and the work is carried on to the full capacity of the limited facilities, leaving the larger mass of students unprovided for means of physical exercise.

The recent movement started to acquire a stadium and more ground for all physical activities is a long step in the right direction, and it is hoped that a modern and commodious gymnasium may be realized at the same time.

Respectfully submitted,

L. J. COOKE, *Director*

DEPARTMENT OF PHYSICAL EDUCATION FOR WOMEN

To the President of the University:

SIR: I submit herewith my report on the work of the Department of Physical Education for Women for the year 1920-21:

The work of the department has progressed much as in recent years. Additional effort has been made to relate its activities to the general life of the student, as by focusing more attention on life-saving in the swimming classes, and by teaching the rudiments of tennis to 175 beginners. Many devices have been used to stimulate interest in posture and carriage, and for motivating the effort to acquire conscious, harmonious, neuromuscular control and skill without tension. Posture tracings in the spring have shown almost uniform improvement over those taken in the fall, strength tests have usually improved, and in the complete physical examination in the spring the freshmen have given gratifying evidence that the University year has not caused undue fatigue. In a large number of cases their health has improved.

The Women's Athletic Association instituted a change in the basis of membership, whereby membership is limited to students who have won certain stated athletic points. The number of members resulting was naturally smaller than in former years but the morale was improved.

The report on competitive sports appears in the report of the Committee on Intramural Sports.

The staff.—Miss May S. Kissock and Miss Gertrude M. Baker were away on leave of absence during the year. Miss Gladys A. Fellows resigned and Miss Henrietta Browning was appointed in her place.

Professional course.—The curriculum for the preparing of teachers and supervisors of physical education has progressed to its junior year. Forty-three students are now registered, distributed as follows: 9 juniors, 13 sophomores, 21 freshmen. These students should have a study room in this building and it is our plan to transform the rest room into a study room for next year.

ENROLMENT OF NON-PROFESSIONAL STUDENTS

Required work: freshmen, physical training.....	733
Sophomores	
Physical training	117
Swimming	350
Rhythmic expression	148
Organized games and folk dancing.....	65
Major sports	50
Total	730
Freshmen, hygiene	697
Elective exercise (excluding swimming).....	75
Number of "swims".....	1,775
Elective hygiene (2 quarters).....	20
University High School students.....	115

Summer Session	122
Extension Division	210
PHYSICAL EXAMINATIONS, total number.....	2,133
Entrance (fall)	902
Entrance (winter)	60
Entrance (spring)	23
(Follow-up appointments on account of findings at first examination, 126.)	
Juniors, College of Education.....	200
Seniors, College of Education.....	79
Spring reexamination of freshmen	495
Spring reexamination of sophomores	345
Spring reexamination of University High School.....	29
Upper class consultations for all juniors and seniors, except College of Education, 367	

It was with great appreciation that this department received the relief attendant on the assumption by the University Health Service of the physical examinations of the women students at Morris and at Crookston.

The building.—The transforming of certain storage space into three offices has given proper accommodation to an enlarging staff.

Needs.—I. With the professional course progressing to the senior year of its curriculum there is great need of an additional member of the staff to take care of additional courses and the supervision of the practice teaching.

II. May I repeat with urgency my former recommendation that the natatorium unit be completed. Every winter young women complain bitterly of the exposure to cold to which they must submit in passing in wet clothes from the warm pool room through a long draughty lobby to reach the dressing rooms. Every winter girls have painful falls as the result of hurrying with wet feet over the cold wet pavement, which grows very slippery.

The pool grows steadily more popular for extension classes. Recently the Extension Division has asked for its use on additional evenings. It has been impossible to approve the request since the use of the pool would mean the opening of locker and dressing rooms at times when they could not be properly safeguarded. When the natatorium unit shall have been completed and can be used as a separate entity, there is no doubt that it will be put to use for many more classes.

III. We have 1,238 lockers and this year we have had 1,555 girls using them. Since they are only six inches in width, it is both unhygienic and disorderly for them to be used for more than one person. We are in great need therefore of additional equipment.

IV. May I enter a plea for the retention of such open spaces as still remain in the vicinity of the Gymnasium Building. All will grant the advisability of carrying on as much as possible of the physical education work outdoors. With young women here who are studying to teach the subject, it becomes all the more necessary. The question arises, then, are we to have (1) a large athletic field at such distance from the gymnasium that two consecutive periods will be necessary in order to program the work, e.g., on the river flats or between the campuses, or (2) a large athletic field close to a gymnasium which will itself be so far removed from

the classrooms as to necessitate a double period, or (3) are we to use the small spaces near a gymnasium set so close to classrooms that a single period, properly handled, permits a half hour of exercise on the field, while classes can be scheduled from 9:30 to 5:30? I submit the opinion that, since we can not have the ideal thing, i.e., a gymnasium set close to classrooms and also surrounded by a large athletic field, the third plan is the most desirable.

At present this department utilizes spaces behind the Library and the Gymnasium Building, in front of the Pathology Building and behind the Education Building, including the tennis courts.

Respectfully submitted,

J. ANNA NORRIS, *Director*

COMMITTEE ON PHYSICAL EDUCATION AND INTRAMURAL SPORTS

To the President of the University:

SIR: The Committee on Physical Education and Intramural Sports respectfully presents its report for the school year 1920-21:

INTRAMURAL SPORTS FOR WOMEN

The following report on the activities of the women in the University in intramural sports is submitted by Dr. J. Anna Norris:

FALL ACTIVITIES

Hockey.—Number out, 130. Class teams chosen first week in November. Class tournament from November 4 to 22. Freshman teams were champions. A purely honorary team was chosen termed the Varsity team, which played the championship team.

Swimming.—December 7, Aquatic League exhibition.

WINTER ACTIVITIES

Basket-ball.—Number out, 10. Class team chosen, February 26. Class tournament, March 7 to 15. Final class game, March 15, won by juniors. Final house game won by Mrs. Cole's house. Odd-even tournament, 3 games. Color tournament from January 31 to February 21.

Ice-hockey.—Unable to pick teams or have tournament on account of unfavorable weather conditions.

Swimming.—January 12, life-saving class organized. February 18, exhibition and examination of girls for life-saving corps. Charter granted by Captain Albro of the Red Cross.

Gymnastic exhibition.—Held March 18. An exhibition rather than a competition, showing progression in gymnastics, games, and folk dancing. Three hundred participating.

SPRING ACTIVITIES

Baseball.—Outdoor rules with 10-inch ball. Fifty people out. Teams chosen May 14. Class tournament ran from May 16 to 27. House baseball tournament, with indoor rules ran from May 4 to 29, 14 houses participating.

Tennis.—Singles tournament, 28 people. Doubles tournament, 10 couples.

Swimming.—The annual swimming meet, open to all University women, occurred June 3. Forty-one students entered.

Field Day.—Unfavorable weather conditions on both of the alternate days set made it necessary to curtail plans for final contests to the extent

of giving up the track and archery contests. Final games in baseball and volley-ball were played on the regular fields, but no general field day in the East River Park.

INTRAMURAL SPORTS FOR MEN

The following report on the participation of the men in the University in intramural sports is submitted by Mr. Fred Whittemore, acting manager of intramural sports:

Following is the concise statistical report of intramural sports for the present school year to date. The interfraternity tennis schedule could not be carried through this spring on account of the late start made necessary by the unsettled weather.

Intramural sports this year were somewhat retarded by the unfavorable weather conditions, and by the conflicting programs of the Military Department during the baseball season. But not regarding these difficulties, wherever possible, tournaments were conducted in all the standard sports, excepting football, which was not arranged as per schedule on account of the unsettled weather last fall.

Basket-ball (Interfraternity).—A schedule of 63 games was arranged, including the semi-finals and finals, and about 200 students participated in the tournament. The championship was easily won by the Sigma Phi Epsilon Fraternity.

Ice-hockey (Interfraternity).—There were 15 fraternity teams that participated in an elimination series of games on the University rink at Northrop Field. About 90 men took part in these games, and the final game was won by the Phi Sigma Kappa Fraternity. All members of the University were permitted general use of the rink without charge.

Boxing.—An all-University boxing tournament was conducted at the close of the season, and participants, numbering about 25, were members of the regular boxing class in the Department of Physical Education. Championships in the following weights were decided: bantam, light weight, feather weight, welter weight, middle weight, light heavy, and heavy weight.

Swimming.—An all-University meet was conducted in which about 20 students took part. The events were the 40-yard dash, 220-yard dash, plunging, back stroke, diving, breast stroke, relay races, 80-yard novice race, and underwater swimming. Intramural "M's" were awarded to winners in each event.

Bowling (Interfraternity).—In the bowling tournament about 24 teams were scheduled for the tournament in four divisions and the schedule began operation early in the fall and lasted till early in January, 1921. About 125 men participated and the championship was won by Alpha Sigma Phi Fraternity, having won 7 straight games.

Tennis.—An all-University tennis tournament was conducted last fall and about 25 men participated. The schedule was arranged for direct elimination and the championship was won by Chester Bros. an Engineer.

(Interfraternity).—A schedule for interfraternity tennis matches was drawn up and about 25 fraternities were included, but owing to the weather conditions the schedule was not played as per schedule and the last games of the semi-finals and finals will have to be postponed till fall, as examinations will not permit the running of the schedule during the last week.

Skiing.—An appeal from some of the students of the University brought skiing into prominence, and a team was organized for practice, and proved to be of such rating that a meet between the Universities of Wisconsin and Minnesota was arranged. Eight students from Minnesota participated in this event and the meet was held at Glenwood Park, February 12, and was won by Minnesota.

Handball.—An all-University handball tournament was arranged this spring and about eight men entered the lists. The doubles were won by Honigman and Bartlett and the singles were taken by Bartlett.

Indoor track relay (Interfraternity).—The indoor track relay was held early this winter and the event was won by the Phi Psi Fraternity. About 80 students took part in this event.

Baseball (Interfraternity).—An interfraternity baseball schedule was drawn up and 24 fraternities showed their spirit by signing up and a series of 63 games was arranged in four divisions, and about 200 men took part. Inadequate equipment and conflicts with the military program caused a number of necessary postponements. But the spirit of the fraternities overcame these delays and the final game was won by the Alpha Tau Omega Fraternity.

(Intercollege).—Eight colleges responded to the original schedule and a series of 14 games was run off, including the finals and semi-finals. The schedule was arranged in two divisions and the final game was won by the Engineers.

Sigma Delta Psi (Honor athletic fraternity).—Trials for the passing of the Sigma Delta Psi requirements have been scheduled and this spring trials in all the twelve events were run off including a repetition of the following trials: baseball throw, football punt, swimming, and tumbling. About 78 men succeeded in passing two or more of the twelve events and 15 passed four or more and a remaining 20 passed one or more of the events but were only present for the first trials. Three students finished the requirements for full standing in the senior division and two men finished the necessary trials for admission into junior membership.

Intramural sports assuredly serve a distinct need in the University. Its aims and ideals have been discussed in the *President's Report* of the previous year.

A budget calling for an expenditure of \$5,000 per year was prepared and submitted to the president for the present biennium. If this amount is granted, much can be done to enhance the physical well-being of students. Our great handicap in the past has been the meagerness of financial resources. Until the present year an annual sum of \$500 donated by the Athletic Committee was our only income for intramural sports. During the school year 1920-21, the regents granted an additional \$500. Hence our

budget for this year was \$1,000. Heretofore the directors of intramural sports have been furnished by the departments of Physical Education. The staffs of these departments are already worked to the maximum in their particular fields. A full-time instructor and leader in intramural sports will do much to stimulate outdoor activity on the part of students. It is our aim to reach all students in the University.

Respectfully submitted,

JOHN SUNDWALL, *Chairman*

THE MILITARY DEPARTMENT

To the President of the University:

SIR: I have the honor to submit herewith a brief report of the Department of Military Science and Tactics for the year 1920-21.

The organization of the Reserve Officers' Training Corps was accomplished during the first week of the fall quarter. Actual training and instruction began the second week and continued throughout the year, terminating June 10, 1921. In the instruction and training of the students in this department as a whole, the progress made was satisfactory. Some confusion resulted from a slight change in the schedule for the spring quarter, but this will be obviated in the future. The schedule of instruction for the year was generally satisfactory and will be recommended for the next year without material alterations.

The two most important present needs of this department are more classroom facilities, enabling the instruction to be given to smaller groups, and therefore with greater thoroughness; and additional housing facilities for certain materiel essential to proper instruction in the Coast Artillery Corps unit.

The Advanced Course commenced with an enrolment of seven in the Infantry, eight in the Signal Corps and four in the Coast Artillery, or a total of nineteen in the various branches exclusive of the medical and dental units. This total was increased, during the year, to twenty-five and it is expected that next year it will be considerably greater.

The junior unit at the School of Agriculture completed its first full year of instruction with a very good record, under the immediate direction of Major Ben W. Feild, Infantry, with Sergeant Edmund T. McCann as assistant. In December, 1920, authority was obtained from the War Department to extend the two-year Basic Course as contemplated in regulations over the three-year Normal Course of two quarters each, at this particular school.

At the end of the academic year, there were, in this department, nine commissioned officers of the regular army as assistant professors of military science and tactics. An additional infantry officer has just been detailed and he will report for duty in the fall. There are also twenty-one non-commissioned officers on duty as instructors, which number will possibly be increased to twenty-four by the beginning of the new fall quarter.

During the year, two new units were established at the University: a medical unit and a dental unit. They were organized in February under Colonel H. H. Rutherford, Medical Corps, United States Army, and have made a very successful beginning. It is expected that increased interest will be shown in these new units during the coming year.

THE PRESIDENT'S REPORT

ENROLMENT 1920-21

University Proper (Senior unit)

Total number enrolled.....			1,803
Registration cancelled		311	
Special gymnasium work substituted on account of physical disqualification		150	
Discharged from R.O.T.C. for divers reasons.....		164	
Completed course			
Grade A	846		
Grade C	207		
Grade I	85		
Grade F	40		
	<hr/>	<hr/>	<hr/>
Total	1,178	625	1,803

Of the above number present at the close of the year, the distribution was as follows:

Basic Course	1,130
Advanced Course	48
	<hr/>
Total	1,178

Report of individual rating of each student has been made to the office of the registrar.

SCHOOL OF AGRICULTURE

(Junior unit)

Total number enrolled		249
Completed course of instruction satisfactorily.....	211	
Grade F	38	
	<hr/>	<hr/>
Total	249	249

The total value of the equipment issued by the War Department for the use of the Reserve Officers' Training Corps was approximately \$257,216.21.

List of the personnel detailed by the War Department and on duty at the University at the close of the college year is omitted as being already on record in the president's office.

The following named students were graduated from the University and satisfactorily completed the work contemplated for the two-year Basic Course and the two-year Advanced Course: Cadet Colonel Lisle B. Swenson and Cadet Major Andrew L. Miller. Both of these students have been recommended as second lieutenants in the Infantry Section of the Officers' Reserve Corps.

A great deal of difficulty has been experienced in the past in recovering our property issued to the students during the year for their use, especially various articles of uniform clothing. In order to obviate this difficulty, it is recommended that a deposit be made by each student upon registration, to cover the possible loss of such articles, as indicated in the department booklet which will be distributed to all future students, and of which a copy has been furnished the office of the president. This will be a distinct advantage both to this department and to the University.

The War Department now has under consideration, the desirability, with the concurrence of the University, of establishing an engineer unit at this institution. While it is felt that from general considerations, the University of Minnesota would be a good selection for such an establishment, it is believed that it should not be recommended while facilities for the instruction of the now existing units are not fully adequate.

Respectfully submitted,

G. STURTEVANT, *Colonel, Infantry, U.S.A.*

THE GEOLOGICAL SURVEY

To the President of the University:

SIR: I submit herewith my report as director for the period from July 1, 1920, to June 30, 1921.

Introduction.—The survey was allotted \$16,500 for the biennial period begun July 1, 1919. The work of the survey was carried on according to the plan outlined in previous reports to the president of the University, and published in the annual reports of the president. At the end of the fiscal year, 1920-21, there were under way or completed the following investigations:

1. Following the detailed survey of the eastern part of the Mesabi Iron Range, made by Professors F. F. Grout and T. M. Broderick, the survey has extended the work westward along the Mesabi Range. The early part of the work was conducted by Professor Broderick, under my supervision, but Mr. John W. Gruner assumed the burden of the work in the summer of 1920, and has carried the study to completion.

The active developments on the East Mesabi, including an enormous mine and a fair-sized mill, promise to make it profitable to mine a great many deposits of low grade magnetite along the whole Mesabi Range. Over most of the range the magnetite is concealed by surface gravels, and deposits are known only from drill cores which are in the hands of the Steel Corporation, the Great Northern Railway, and other private parties. Mapping of the deposits has thus involved a tedious and careful study of the cores. In this work Mr. Gruner had the assistance of Mr. S. C. Lin.

Through the winter season, draughtsmen have been at work preparing maps and sections which will show these deposits in detail. The United States Geological Survey is considering a proposition by which this map may be issued in several colors, and with its high standard of quality, at government expense.

2. The mapping of the Vermilion Iron Range some years ago by the Government Survey was extended only across the active producing mines. In 1920 the state survey assigned Professor F. F. Grout the problem of extending this mapping across several counties to the west. It was found that several private surveys had covered different parts of the district. The present problem is to map those areas which have not been touched, and attempt to obtain for publication the results of as many private surveys as possible. The party under Professor Grout included Mr. George Thiel, Mr. Stanwood Johnston, Mr. Franklin Hanley, and Mr. Maurice Adams. Mr. A. J. Tieje was with the party for a short time.

3. A survey of an area of complex geology in northern St. Louis County. This area contains large bodies of ancient granite with pegmatite veins, some of which contain magnetic iron ore. No large deposit has been found, but so much prospecting has been done and is being done, that it will certainly be profitable to issue a report after careful investigation.

Professor Grout's party, as above listed, spent some weeks in this territory, and will probably be able to complete the mapping of the northern part of St. Louis County this summer. This will involve the work of five or six men during the season, and a coöperative plan is being considered by which the Federal Survey may send a man to join the party.

The problem of the development of the rich iron deposits of the Mesabi Range has been attacked by Mr. John Gruner in the laboratory of the survey. Experimental chemical work and microscopic examinations have been conducted through the winter season. Mr. Gruner will spend the summer studying the actual conditions of the deposits on the Mesabi Range. This will require careful mapping of the fractures and joints in the rocks. Mr. Gruner will be assisted in this work by Mr. Harrison Schmitt.

5. The extensive program of highway construction approved by the legislature, requires such a large amount of gravel and rock that the survey has undertaken to assist the Highway Commission in the location and development of these materials. Mr. G. M. Schwartz and Mr. W. C. Werner have been appointed to do the work most desired by the authorities of the Highway Commission, but will at the same time be able to produce a better geological map of the formations in any region they undertake to study.

In addition to the more comprehensive investigations outlined above, many inquiries are received in the offices of the survey concerning the geological structure in various places, by those who contemplate drilling for water or ore. Numerous materials are also forwarded from different localities in the state to be examined to determine their availability for various economic purposes.

Respectfully submitted,

W. H. EMMONS, *Director*

THE ZOOLOGICAL SURVEY AND MUSEUM

To the President of the University:

SIR: I have the honor to submit the following report of the condition and activities of the Zoological Survey and Museum for the year ending June 30, 1921.

The work of the museum has proceeded along the same general lines as heretofore with, however, a marked increase in the lecture service given to school children and the general public so that this feature has during the past year outstripped other activities. A conservative estimate, based on the seating capacities of the various auditoriums in which lectures have been given, shows that nearly 7,000 persons have been reached directly in this way. A detailed list of the lectures is included in this report. They were all illustrated with motion pictures or slides chiefly from the library owned by the museum. A series of Sunday afternoon lectures given at the museum during the months of January, February, and March proved very popular and drew audiences that considerably exceeded in some instances the seating capacity of both lecture rooms combined.

A large part of the time of both the director and his assistant has been devoted to selecting, preparing, and assembling the new lecture material obtained during the year; to meeting the various engagements for lectures at and away from the museum; and in accompanying the constantly increasing groups of visitors to the museum and explaining the exhibits.

In November the director attended the annual meeting of the American Ornithologists' Union in Washington and took part in the program giving a talk on November 10 in the National Museum, entitled *Some Common Birds in Motion Pictures* presenting reels belonging to the museum. One sequel of this was a request for the loan of the films from the Massachusetts Audubon Society for its spring lecture course in Boston, which was granted. The films were shown on April 2 in Symphony Hall to a large audience and Mr. Winthrop Packard, secretary of the society, on returning the films expressed himself as follows: "I want to thank you for the great treat which your pictures gave our audience. The Itasca Park film, especially, it seemed to me, is admirable—one of the best and most interesting bird films I have seen." This was coupled with an inquiry as to whether the society might be permitted to have a copy made from the negative of the Itasca film. It seemed best to hold this request in abeyance for the present.

Mr. Charles Phillips, who had served as museum assistant since September 1, 1919, resigned on May 1, 1921. Mr. William Kilgore, Jr. was appointed in his place and began his duties in the museum on June 1, 1921, with the title assistant curator. Mr. Jenness Richardson has continued as museum taxidermist and has been reappointed for the ensuing year. Several students have been employed from time to time on an hourly basis to assist in labeling and arranging the study collections.

MUSEUM

Exhibits.—Work on the large Heron Lake bird group has continued throughout the year. It was found impossible to complete it in the time expected, as the magnitude of the task with Mr. Richardson working alone, proved much greater than anticipated. However, it is now in the final stage. Mr. H. W. Rubins, of this city, has finished painting the background which is a beautiful and artistic picture some 32 feet in length by 12 feet in height with a vaulted sky effect. Mr. Louis Agassiz Fuyertes, of Ithaca, New York, an artist who is renowned for his bird portraiture, kindly came to Minneapolis in October at the solicitation of the director and painted sixty birds into the background which will not only add greatly to the beauty and effectiveness of the group but will impart to it a special and historic value in the future. Mr. Fuyertes' paintings take first rank among bird artists and the museum is fortunate in possessing a fine example of his work. Dr. Frank M. Chapman, of the American Museum, the Nestor of modern bird groups in America, accompanied Mr. Fuyertes and very kindly volunteered much valuable advice.

Mr. Richardson's time being thus almost entirely occupied with the Heron Lake group, no exhibits of any note have been added to the museum during the year.

The winter visitant bird map and the spring wild-flower table have been maintained as last year, the latter with the very considerable assistance of Mr. Huff and others of the botanical department.

Study collections.—As will be seen by the list of donated material some additions have been made to the study collections of birds and mammals, kept in Room 315 on the third floor. These collections are for the use of students both in and out of the University who are specially interested in such subjects and who know how to handle the specimens without injuring them. The birds number at present about 7,000 and the mammals 325. The birds of the state are well represented but the mammal collection is very deficient and an effort will be made as soon as possible to make it representative of the species found in Minnesota. The collections have been consulted constantly throughout the year by students and teachers and the bird skins are used in teaching the class in ornithology, tho for close study in the latter connection a separate series has been prepared to avoid as far as possible the injury that would result to the main collection from untrained handling.

Donations of material.—The following gifts to the museum have been received during the past year, duly acknowledged, and the various donations taken care of as required, and assigned to their proper places in the collections.

Chicago, St. Paul, Minneapolis & Omaha

R. R.	1 white pelican (in flesh)
Mr. J. O. Ewing, Minneapolis.....	1 baldpate duck (in flesh)
Minnesota Game and Fish Commission....	1 male ring-necked pheasant (in flesh)
Mr. Paul A. Brooks, Minneapolis.....	7 live fish for aquarium
Mr. Lawrence E. King, Minneapolis.....	2 cotton-tail rabbits with "horns" (in flesh)

Mr. Ernest Kennedy, Minneapolis.....	1	parakeet (in flesh)
Minnesota Game and Fish Commission....		Several lots of live fish for the aquarium
Mr. Alfred Peterson, Pipestone.....	8	horned larks and 2 Brewer's blackbirds (in flesh)
Mr. Bernard Bailey, Elk River.....	1	sharp-shinned hawk, 1 solitary vireo and 1 Tennessee warbler (skins)
Mr. W. O. Winston, Minneapolis.....		Mounted group of three bobwhites in glass case
Purchased museum subscription fund.....	37	small mammal skins from Mr. Fred Barker of Parker's Prairie
Mr. John Jager, Minneapolis.....	1	sapsucker (in flesh)
Mrs. J. C. Hvoslef, Lanesboro.....	57	manuscript volumes of diaries and records of Dr. J. C. Hvoslef cover- ing the period from 1881 to 1918 inclusive
Dr. Arthur C. Strachauer, Minneapolis....	1	adult and 3 young flying squirrels
Mr. H. J. Jaeger, Owatonna.....	1	sharp-shinned hawk (in flesh)
Minnesota Game and Fish Commission....	2	golden-eyed ducks, 1 spruce partridge (in flesh)
Mr. Burton W. Thayer, Minneapolis.....	20	mammal skins with skulls, 3 bird skins, 1 beaver skull and 1 coyote skull
Mr. Jenness Richardson, Minneapolis.....	2	live lamprey eels, 3 live rattlesnakes, 19 negatives and several photographs
American Museum of Natural History, New York City.....	16	large photographs illustrative of the museum and its activities
Mr. Sewall D. Andrews, Minneapolis....	1	barrel fine plaster of Paris
Mr. Sumner W. Matteson, Milwaukee.....	5	photographs of gulls feeding
Mr. Chas. A. Bovey, Minneapolis.....	1	large mounted photograph of California gulls feeding
Mr. S. C. Swanson, Cannon Falls.....	6	photographs of birds
Mr. J. M. Eheim, Hutchinson.....	4	photographs of birds

The mammal skins presented by Mr. Thayer were collected by him in and about Itasca Park and are of interest as we have but little material of this kind from that region. They are as follows: 1 skunk, 1 Franklin's ground squirrel, 3 red squirrels, 1 gray chipmunk, 2 long-tailed chipmunks, 2 striped gophers, 1 woodchuck, 1 jumping mouse, 2 white-footed mice, 1 Loring's gapper mouse, 1 deer mouse, 1 bat (*Myotis l. lucifragus?*), 3 Minnesota varying hares.

A gift of more than ordinary importance and to which special recognition should be accorded is the journals and notebooks of the late Dr. J. C. Hvoslef who practiced medicine at Lanesboro, Filmore County, from 1876 to 1920. Dr. Hvoslef was a well-trained and careful student of natural history, giving particular attention to ornithology and botany and during his long residence at Lanesboro kept a continuous, detailed diary in which he carefully recorded all his observations with accompanying meteorological data. There are fifty-four volumes of diaries and three additional general notebooks. Dr. Hvoslef died October 11, 1920, at the age of eighty-one years and the following spring Mrs. Hvoslef very generously presented to the museum in complete form this life work of her husband, recognizing that it most appropriately belonged to the state to which it pertained. There is contained within the volumes a mine of natural history lore which will

increase in value as the years pass. No part of it has ever been published but from its pages were taken the bird migration records that Dr. Hvoslef sent to the Biological Survey at Washington over a series of years and concerning which Wells W. Cooke in one of the survey bulletins stated that the information from Lanesboro was the most complete and satisfactory that they had received from any source. The museum is fortunate indeed to possess these journals and is deeply grateful to Mrs. Hvoslef for the gift. A number of years ago Dr. Hvoslef donated his collection of birds—numbering some 400—to the museum and they form a part of the study collection. There is also on file in the museum a considerable series of letters from Dr. Hvoslef relating almost entirely to the bird life of south-eastern Minnesota. The earliest date back nearly thirty years and were received by the writer of this report during a long correspondence acquaintance with the doctor.

Publications.—No special publications have been issued the past year other than several articles in journals prepared by the director from museum data. Four hundred copies of the last museum report were separately printed with special cover and containing full-page half-tone illustrations of the four large groups with explanatory text. These, together with many copies of former publications, have been widely distributed. A considerable number of the group illustrations were printed separately and are being presented in sets to interested visitors to the museum. The *Review of the Ornithology of Minnesota*, issued in 1919, has been circulated by the University library except about 75 copies which have been sent out gratis from the museum. The edition of the paper on the *Water Birds of Minnesota; Past and Present* is nearly exhausted. The *Check List of Minnesota Birds* is in constant demand and incidentally has served to bring to the museum during the past year a larger number of well-arranged reports on the bird life of the state than has ever been received before.

An article prepared by Mr. Phillips giving a summary of the winter bird conditions in Minnesota for the season of 1919-20 and based on information received from the correspondents of the museum was published in *Fins, Feathers and Fur* for June, 1920 (No. 22).

Photography.—More attention than ever has been given during the year to securing motion picture films for the lecture work of the museum as this feature at present, whether wholly desirable or not, takes precedence of all others in attracting and holding audiences; adults as well as children. A rather wider range of subjects than heretofore has been included. The resulting reels have added greatly to the interest and popularity of this part of our educational work. Special credit is due Mr. Phillips for much painstaking work and thought in assembling the pictures in a satisfactory manner.

During the year nearly 10,000 feet of negative have been taken by the director and Mr. Richardson. A little less than one half of this has been printed, assembled, provided with appropriate titles, and placed in service. With this addition we have now 12 original reels, all dealing with natural history subjects and presented under the general caption *Out-Door Studies in Minnesota*. Several pieces of especially desirable and interesting film

have been added to our reels through the courtesy of Mr. Carlos Avery, state game and fish commissioner, who permitted the museum to have prints made from negative belonging to the commission.

There is in reserve a considerable amount of negative film that has not been printed either because it closely duplicates negative printed, is not needed at present, or is second-class. There is much unavoidable duplication and waste in taking wild life pictures. The only road to ultimate success is to keep at it, take what offers and then select the best. One of the foremost men engaged in this kind of work in this country stated that his shrinkage was 80 per cent which accounted for the unusual perfection of his films. A 50 per cent loss may be considered entirely reasonable.

Both of the motion picture cameras in use by the staff during the past year were much out of repair, which caused great annoyance and loss both in film and results. As it has been found impossible to get these cameras repaired satisfactorily a new outfit has been obtained without cost to the University and is in use this year.

Two hundred new negatives have been added to the museum's series during the year. One hundred twenty-five new lantern slides have been made, including a set illustrating the food habits of certain of our common birds. The latter are used for general lectures and class purposes.

Coöperation.—Every effort has been made to accord to the children of our public and private schools, scout organizations, and other groups of children, the service that, in the opinion of the director, is the most important part of our work. The education of the children of to-day along broad nature-study lines will result in generations to come in greatly increased numbers of intelligent and efficient conservationists of our natural resources. This will be an important advance over present conditions. The response from the public schools has been quite general and many groups of children have come to the museum accompanied by their teachers. The lecture room being small, only selected classes can be accommodated. However, one fortunate feature results from these small groups as after each lecture the children can be taken through the museum in a body and the exhibits explained to them in a brief talk.

The State Game and Fish Commission has been granted the use of several of our motion picture reels on a number of occasions to illustrate talks before sportsmen's organizations in various parts of the state. In return Mr. Avery has granted us many favors and has cordially coöperated in the work of the museum in every way possible.

Sets of bird slides have been loaned to Mr. Frank Gillis, of Anoka, and Mr. L. F. Kruse, of Red Wing. In each instance they were used to illustrate talks to several audiences, chiefly school children.

Two reels of bird films were loaned to the Massachusetts Audubon Society and were shown to a large audience in Symphony Hall on April 2 last.

The lower lecture room and equipment have been used on a number of occasions by others than the museum staff. The Minneapolis Mycological Society has been granted permission to hold its monthly meetings there under the presidency of Mr. Stakman.

At the invitation of Mr. Sigerfoos four illustrated lectures on bird migration were given during the spring to sections of the first-year zoology class.

The course in ornithology offered by the Department of Animal Biology was conducted by the director of the museum during the winter and spring quarters. The collections of the museum and its library of slides and films are invaluable aids in this work.

Lectures.—The most important feature of the lecture work of the museum for the year was a series of thirteen popular lectures offered to the faculty and students of the University and the general public on Sunday afternoons during the months of January, February, and March. The lectures were given in the main auditorium on the third floor of the Animal Biology Building at 3:30 o'clock. They were illustrated with lantern slides and when possible with motion pictures appropriate to the subject. The motion pictures were shown in the lower lecture room after the formal lecture until the attendance so greatly exceeded the capacity of the upper room that it became necessary to install a second projector when both rooms were in operation at the same time. In the main the films shown were those belonging to the museum but Mr. Avery and Mr. Cox kindly supplied films and slides of their own for their lectures. Mr. Stakman secured an especially interesting and instructive film from the Bureau of Plant Industry at Washington to supplement his lecture. The University Department of Visual Instruction provided several reels and three reels were obtained from the Community Motion Picture Bureau, of New York City. Slides to illustrate their lectures were also provided by Mr. Emmons, Mr. Stakman, Mr. Chapman, and Mr. Huff. Mr. Sigerfoos illustrated his lecture by projecting on the screen, by means of a microscope attachment to the lantern, living examples of the minute animal and plant inhabitants of our ponds. The lecture by Mr. Lund was accompanied by a series of 67 beautiful slides generously loaned for the occasion by the American Museum of Natural History, New York City, through the kind offices of Mr. G. Clyde Fisher, associate curator of the Department of Public Instruction of that institution. A considerable part of this series had been specially made and was here shown for the first time. We wish to express here our appreciation of the American Museum's courteous and kindly coöperation on this as well as on other occasions.

During the lecture course the museum was open to the public Sunday afternoons for the first time and from the start the attendance was unexpectedly large. It was estimated that at least 3,000 visited the museum and attended the lectures and this without any notices appearing in the public press. This display of interest in the exhibits and activities of the museum would seem to indicate that as soon as it is possible it would be well worth while to have the building open regularly on Sunday and holiday afternoons.

The program of this first course of public lectures by the museum should form a part of this report, if for no other reason than to give to

those who so generously gave of their time and effort the thanks and recognition that are due them. Without exception each man met the invitation with a cordial and ready acceptance and gave to his subject the preparation and thought that insured the success of the course.

PROGRAM OF SUNDAY LECTURES

January	2.	The Winter Bird-Life of Minnesota, by D. Lange, principal of the St. Paul Mechanic Arts High School.
January	9.	The Geology of the Minnesota Iron Ores, by W. H. Emmons, professor of geology and head of the Department of Geology, University of Minnesota.
January	16.	The Work of the State Game and Fish Commissioner, by Carlos Avery, game and fish commissioner of Minnesota.
January	23.	The Story of the Wheat Rust, by E. C. Stakman, professor of plant pathology and head of the Section of Plant Pathology, College of Agriculture, University of Minnesota.
January	30.	Animal Pets and Their Relation to Health, by W. A. Riley, professor of entomology and chief of the Division of Entomology and Economic Zoology, College of Agriculture, University of Minnesota.
February	6.	Some Minnesota Butterflies and Moths and the Mystery of Their Double Lives, by Royal N. Chapman, assistant professor of animal biology and assistant entomologist, Agricultural Experiment Station, University of Minnesota.
February	13.	The Work of the Chief State Forester, by William T. Cox, chief forester of Minnesota.
February	20.	The Mysteries of Pond Life, by C. P. Sigerfoos, professor of zoology, University of Minnesota.
February	27.	The Indians of Minnesota; Past and Present, by Albert E. Jenks, professor of anthropology, University of Minnesota.
March	6.	Itasca State Park and Its Wild Life, by Thomas S. Roberts, director of the Zoological Museum, University of Minnesota.
March	13.	Living Lanterns of Fireflies and Other Animals, by E. J. Lund, associate professor of animal biology, University of Minnesota.
March	20.	Our Spring Flowers, by N. L. Huff, assistant professor of botany, University of Minnesota.
March	27.	The Home-Coming of Our Birds, by D. Lange, principal of the St. Paul Mechanic Arts High School.

Thirty-one illustrated lectures have been given by the director at the museum, chiefly to groups of school children. Fifteen other lectures have been given in response to invitations in Minneapolis and St. Paul. The list presented below will give an idea of the character of the audiences and the number of individuals reached directly in this way. Including the Sunday lectures the total for the year is 6,860, nearly double that of last year.

1920		No. present
August	3.	Scout Master's School, Itasca Park..... 20
August	5.	Scout Master's School, Itasca Park..... 20
August	6.	Scout Master's School, Itasca Park..... 30
September	24.	Botany class, North High; at museum..... 20
September	30.	Biology class, South High; at museum..... 27
October	1.	State Medical Society, St. Paul..... 300
October	11.	Group of public school teachers; at museum..... 12
October	13.	Invited audience at museum; Dr. F. M. Chapman and Mr. L. A. Fierres..... 125
October	23.	Class from Rochford High School; at museum..... 16
November	10.	American Ornithology Union and general audience at National Museum, Washington..... 300

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		No. present	
November	20.	Biology class, Hopkins High School; at museum.....	25
1921			
January	2.	Sunday lecture; Mr. Lange; at museum.....	100
January	9.	Sunday lecture; Mr. Emmons; at museum.....	200
January	16.	Sunday lecture; Mr. Avery; at museum.....	175
January	20.	Class from St. Paul Mechanic Arts High School; at museum	12
January	23.	Sunday lecture; Mr. Stakman; at museum.....	150
January	30.	Sunday lecture; Mr. Riley; at museum.....	300
February	2.	Journal Club and guests; at museum.....	20
February	6.	Boy Scout patrol; at museum.....	21
February	6.	Sunday lecture; Mr. Chapman; at museum	200
February	7.	Minneapolis Reading Club; at museum.....	16
February	13.	Sunday lecture; Mr. Cox; at museum.....	225
February	15.	Minneapolis Woman's Club; at club's auditorium.....	300
February	20.	Sunday lecture; Mr. Sigerfoos; at museum.....	225
February	23.	Kindergarten teachers class from Wells Memorial; at museum	75
February	27.	Sunday lecture; Mr. Jenks; at museum.....	375
March	2.	Douglas School group; at museum.....	85
March	3.	Baker School class from St. Paul; at museum.....	40
March	4.	Prospect Park Methodist Church; at church.....	300
March	6.	Sunday lecture; Mr. Roberts; at museum.....	400
March	9.	Army and Navy Club; at club.....	150
March	10.	Minneapolis and St. Paul Garden Flower Club; at museum	100
March	11.	Sheridan School class (girls); at museum.....	70
March	13.	Sunday lecture; Mr. Lund; at museum.....	200
March	16.	Holmes School class; at museum.....	27
March	18.	Sheridan School class (boys); at museum.....	85
March	20.	Sunday lecture; Mr. Huff; at museum.....	175
March	27.	Sunday lecture; Mr. Lange; at museum.....	175
April	4.	Zoology class, South High; at museum.....	20
April	5.	Section University zoology class; at museum.....	135
April	8.	Section University zoology class; at museum.....	135
April	11.	Section University zoology class; at museum.....	125
April	13.	Emerson School class; at museum.....	30
April	20.	Seward School class; at museum.....	45
April	22.	St. Paul Y.W.C.A.; at St. Paul.....	75
April	22.	Section University zoology class; at museum.....	125
April	28.	Boy Scout rally; North High School.....	250
May	2.	Holmes School Audubon Society; at museum.....	70
May	4.	Biology teachers of city high schools and Miss Nye's private school; at museum.....	35
May	9.	Concordia Society, young ladies auxiliary; at Hennepin County Medical Society rooms.....	75
May	11.	North High School group; at museum.....	80
May	16.	East High School group; at museum.....	40
May	21.	State Hospital for Crippled Children; at hospital.....	75
June	8.	Van Cleve School group; at museum.....	40
June	9.	Boy Scout rally; Bremer Junior High School.....	250
June	13.	Emerson School group and class of deaf children from Jackson School; at museum.....	48
June	28.	Summer School lecture; at museum.....	65
June	29.	Summer School lecture; at museum.....	80
Total.....			6,860

During the time that Mr. Chapman and Mr. Fuertes were here in the interest in the Heron Lake group they kindly consented to talk before an invited audience at the museum on the evening of October 13. Mr. Chapman gave an account of his travels and explorations in South America, accompanied by a series of beautiful slides. Mr. Fuertes described and gave imitations of the songs and calls of some of our common birds.

Attendance.—There is no way even approximately to estimate the number of transient visitors to the museum under existing conditions but that there is a steady increase is clearly evident. Saturdays especially always bring a considerable number of school children. Each new quarterly influx of University students is always followed by interested groups before the principal exhibits.

Correspondence.—An increasing number of inquiries for information on a great variety of topics comes to the museum and is taken care of by the director as far as possible. These inquiries range from a request for a suitable milk formula for feeding baby beavers to requests that call for considerable search of our files and lengthy replies.

The regular correspondents of the museum throughout the state have shown an active interest in sending natural history notes, particularly lists and migration records of birds and in this latter connection our files will soon contain sufficient material to justify the publication of a report on the migratory movements of Minnesota birds. Mr. Carlos Avery, game and fish commissioner, has courteously continued to assist in the collection of such data by furnishing us with all reports received from his wardens.

Aquarium.—The aquarium on the basement floor attracts a great deal of attention but it has been found difficult to keep the tanks in good condition and the fish healthy. The work falls on one of the janitors of the building and more time is required than he can properly give to it. After restocking the tanks in the fall, it is hoped that it may be possible to secure the part-time service of some one, perhaps a student, to make this feature a greater success than it has been.

Live beavers.—One of the two beavers that have lived in the pool beside the building since August 1917, disappeared about October 1 last. Whether it escaped or was stolen has never been determined. The one remaining is in good condition and continues to attract much attention.

FIELD WORK

No field work, except the taking of motion pictures and the collecting of materials for several small groups to be constructed during the coming year, has been done by the museum since the last report.

The detailed study of the fauna of Minnesota, in any one of its several branches, is still in its infancy both as to the scientific and economic aspects. Here and there bits of good work have been done with some approach to completeness but a general zoological survey under modern requirements and with the assistance of trained men is still to be undertaken. It is of great practical importance to the state that this work should be done as soon as possible. Our neighboring state of Wisconsin is at present engaged in a

thoro study of its vertebrate fauna in coöperation with the Biological Survey at Washington. The survey, through its chief, Dr. E. W. Nelson, has expressed a willingness to render the same aid to Minnesota whenever it is ready with the needed funds. The Minnesota Game and Fish Commission was empowered by the last legislature to make zoological investigations and is actively at work collecting data in connection with its regular duties. It has recently published an important bulletin on the fishes of the state, prepared by its efficient field agent, Mr. Thaddeus Surber. It is hoped that the museum may be permitted to engage in intensive field work and so take its proper place in these activities and at the same time enrich its collections. Now that the working equipment of the museum has been brought to a fairly satisfactory condition, a portion of the present maintenance fund might well be expended in this way.

During the spring and early summer of 1920 motion pictures of some of our common birds were obtained in the vicinity of Minneapolis by Mr. Richardson and Mr. Roberts. Later the director went to Itasca Park and spent the remainder of the summer and early fall, devoting most of his time to securing films of birds, mammals, and general views illustrative of the scenery and wild life of that interesting region. From a portion of that material an "animated map" was prepared by Rath, Mills, and Bell of St. Paul which, under the title *A Little Journey about Itasca Park*, is used to introduce a three-reel lecture on the park, the other reels showing some of the mammals and birds. The increasing popularity of the park as a summer resort gives to the subject a special interest.

Considerable additional negative film has been obtained the present spring but is as yet unprinted.

FINANCES

University museum budget.—The maintenance fund received from the University the past year has been largely expended in adding to the permanent equipment of the museum, the largest item being a considerable increase in the lecture facilities—reels of motion pictures, negatives, slides, etc. A new screen has been installed in the lower lecture room and the motion picture projector has recently been changed from an arc light to an incandescent bulb light, thus greatly facilitating the ease and convenience of operation. We are no longer dependent upon the direct current supplied by the dynamo in the Anatomy Building.

Metal filing cabinets to insure the safety and proper care of the films have been obtained.

The small group cases in the upper hall, which have been scattered on tables, have been assembled in a more attractive and permanent manner and a system of adequate lighting, devised by the museum taxidermist, Mr. Richardson, has been put in place and is in satisfactory operation.

Certain sums have been set aside from the general maintenance fund as a miscellaneous salary fund to pay several students who have been employed from time to time working on the study collections.

THE PRESIDENT'S REPORT

Museum subscription fund.—Mr. James F. Bell has generously continued his monthly contribution of \$50 throughout the year. Two checks for \$25 each have been received as "courtesy fees" for lectures given outside of the museum.

Mr. James F. Bell's monthly contribution of \$50.....	\$600.00
Phi Psi Fraternity, "courtesy fee".....	25.00
Woman's Club of Minneapolis, "courtesy fee".....	25.00
	<hr/>
Total.....	\$650.00

The museum subscription fund, which is deposited in the First National Bank to the credit of Thomas S. Roberts, trustee, has been almost entirely exhausted the past year in paying the cost of constructing the Heron Lake group, for which purpose most of the money was subscribed. Balance in the bank June 30, 1921, \$122.38.

Since the establishment of this fund in 1916, through the generosity of a number of business men interested in the museum project, there has been received a total of \$11,904.10. A very considerable part of this sum was expended during the early years of the museum, when there was no budget supplied by the University, in paying for the initial equipment and general maintenance including salaries of taxidermist and office assistant. No detailed accounting has ever been rendered. An itemized account of all expenditures, with signed vouchers, has been kept and the full statement that is due these generous and trustful donors is in course of preparation.

Respectfully submitted,

THOMAS S. ROBERTS, *Director*

THE UNIVERSITY LIBRARY

To the President of the University:

SIR: Herewith I submit the report of the University Library for the year 1920-21:

The fall of 1919 developed an unprecedented increase in the circulation which taxed the capacity of the library and the resources of the staff almost to the breaking point. The present year has seen a still further percentage of increase. This expansion would be a cause for congratulation were it not that the library is cramped for space and under-staffed. These two considerations make the outlook for the next three years—by which time it is hoped that the new library will be ready for occupancy—somewhat dismaying. I can only bespeak the continued patience of faculty and students under physical conditions which can not be improved in our present quarters.

I am glad to report that good progress is being made in the preparation of the plans for the new building.

Staff.—The year's work started under the handicap of the resignation of Mr. Gerould who had filled the position of librarian for fourteen years. Immediately following his resignation came that of the head of the order department. On October 1 there was one unfilled position in the catalog department, and in December the classifier—an excellent assistant—resigned to accept a position in New York at a salary \$600 in excess of that which the University could pay her. Since that date both of these cataloging positions have remained unfilled.

The position in the order department was vacant until February 1, when Mr. Harold G. Russell, who had been in charge of the circulation department since the fall of 1919, was transferred to the order department. At the same time Miss Helen M. Smith, who had formerly been in charge of the circulating department, was induced to return to that position. Her experience, efficiency, and personality are a guarantee of fine organization in a department which more than any other controls the correlation of the library with the work of the instructional force. The weak point in this department is the quality and the impermanency of the subordinate assistants. No head of a department, however competent, can insure proper service without efficient assistants. In the circulation department we need intelligent and interested young women who are college graduates. To secure such assistants—and what is quite as important—to retain them, it is necessary that salaries be paid commensurate with those they are able to obtain as high-school teachers. Because of our low salary scale we have been obliged, for several years past, to appoint untrained assistants, often of indifferent ability, and in several instances, not college women. The best of them stay but a short time—the poor ones we have always with us. The loan desk is the pulse of the library and its action should be regular, normal, and undisturbed.

Circulation.—The following table shows the number of books issued during the past year in the General Library as compared with the two previous years.

YEAR	HOME	OVER-NIGHT	READING ROOM	EXTENSION	TOTAL
1918-19	22,492	7,895	104,201	134	134,722
1919-20	56,426	11,302	224,702	783?	293,213
1920-21	48,801	19,627	301,360	310	369,788

To this should be added about 6,000 books issued during July and August making the total circulation 375,788. In 1919-20 there was an increase in the circulation of 117.6 per cent over the previous year. A further increase of 28 per cent has occurred in 1920-21. In some months the circulation of the past year has doubled that of the corresponding month of the previous year. The statistics show an increase of 82,575 in the total circulation, and a decrease of about 15 per cent in the number of books issued for home reading. This decrease is probably due to the pressure of assigned work from day to day which leaves students little time for recreational or independent reading.

College libraries.—Complete statistics for the college libraries are not available. In the Medical Library from July 1, 1920, to June 15, 1921, 10,558 books were issued. In the Engineering Library only a record of attendance has been kept. From July 1, 1920, to June 1, 1921, 63,522 persons used the library. The average circulation would be more than one book to a reader.

Administration.—Every effort has been made and will be made to render the best service possible under conditions which can not be greatly improved while we are unavoidably restricted in space. In an effort to simplify and to speed up the service, it was decided last fall to place all "reserve" books in the lower reading room, and we feel that the experiment has been a success. While that room is almost always filled to overflowing, the service has been prompt. To relieve the congestion, after the books have been received students have been permitted to take them to the upper reading room when no seats were available below. While complaints are sometimes made of long waiting for books, upon investigation they are usually proved to be unfounded in fact, and statistics obtained from frequent tests of which the attendants were unaware show that students are served during rush hours at the rate of three per minute. Upon one occasion when a record was kept 220 books were issued in forty minutes. Miss Grace L. Moody has made a notable record of efficiency in supervising this department.

The work at the lower loan desk is extremely exhausting and I have been fearful lest the young women there employed would break down under the physical exertion combined with the nervous strain of work pursued under the continual pressure from the impact of hundreds of impatient students. A change planned for the coming year will remedy this condition and will also classify and differentiate the service in a way that will make

for system and for a better spirit among assistants. By using more student helpers and pages and fewer assistants in this department, we can get more service without an increase in expense.

Accessions.—The total expenditures for books, periodicals, and binding in the General Library for the year has been \$34,289.06.

The distribution of this amount is as follows:

	BOOKS	PERIODICALS	BINDING	TOTAL
General Library	\$22,286.19	\$7,502.82	\$4,500.00	\$34,289.06
Law Library	7,751.73	196.95	512.82	8,528.50
Agricultural Library ...	2,605.18	1,721.86	364.16	4,691.20
Crookston Library	316.62	130.25	34.08	480.95
Morris Library	189.63	109.45	....	299.08
Total	\$33,149.35	\$9,661.33	\$5,411.06	\$48,288.79

The corresponding totals during the past six years have been as follows:

1914-15	\$46,777.16
1915-16	40,076.83
1916-17	35,567.29
1917-18	28,993.04
1918-19	31,126.71
1919-20	38,886.42
1920-21	48,288.79

A large number of orders delayed since the war period have been filled during the year.

The recorded number of books added during the year is 15,503. The total estimated number of books in the library is 300,000. Many collections are not yet cataloged.

Binding.—The binding situation could not well be worse. Last year the contract with the Waldorf Bindery was renewed at no advance over the former rates. Subsequently an increase of 35 per cent on every bill was allowed. The binder claims that he is losing money on our work; therefore he has delayed our orders to an intolerable extent. Shipments sent a year ago are not yet all filled; nothing—not even rush orders sent by special messenger—is returned to us until months have elapsed. Consequently books and periodicals urgently needed are out of circulation for long periods. Something should be done to relieve this situation. It may be necessary to establish a bindery of our own.

The total spent on binding during 1920-21 is as follows:

	CLOTH & REPAIRS		COWHIDE & SHEEP		MOROCCO		PAMPHLETS	
	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.
General Library	1800	\$1,810.54	216	\$310.43	221	\$383.40	218	\$82.62
Law Library	436	512.82	...	.....	...	.....	...	.....
Farm Library	205	235.93	48	\$3.53	19	32.24	51	12.40
Totals		\$2,559.29		\$393.96		\$415.64		\$95.02

Duplicates.—A largely increased demand for duplicates for class use has developed within the past two years. While I deprecate the expenditure of large sums which deplete our resources without enriching our collection, I see no relief for the situation unless a special appropriation either general or departmental be made to cover the cost of these books. As long as the courses are announced and students elect them, the University is virtually under contract to provide the material necessary for their pursuit. But duplicates should be considered laboratory material and not provided from an unsupplemented book fund.

Sale of publications.—The University publications are distributed and sold through the library. During the past year, sales have been made and amounts credited to the various budgets as follows:

Bibliographical Series	\$ 12.00
Botanical Series	29.00
Current Problems	32.55
Geology	197.25
Language and Literature	35.00
Plant Studies, nos. 1 and 5	65.50
Social Sciences	24.75
Total	<u>\$396.05</u>

Gifts.—A miscellaneous collection of forty-nine volumes of travel and literature was presented to the library by Mrs. C. D. Velie.

Dr. H. T. Eddy supplemented his generous gift of 1919 of over 500 books and several hundred pamphlets to the Engineering Library, by an additional gift of sixty volumes, one hundred pamphlets and many unbound periodicals. This collection has proved a most valuable addition to the Engineering Library and has been much appreciated by the faculty and students of that college.

Dr. W. O. Dyer presented to the Medical Library a fine collection of 148 books and periodicals.

Nu Sigma Nu (medical fraternity) presented to the Medical Library sixty-seven volumes.

A very valuable gift of 429 volumes of the "Diario de las Sesiones de Cortes" from 1823 to 1918, was received from the Spanish Government. The set is not quite complete but the expectation is that the missing volumes will be supplied later.

A gift of 83 volumes of "Speeches of Eminent Parliamentarians" was received from the Italian Government.

The Riksdagens Protokoll, 1917-19, 227 volumes were received from the Swedish Government. This gift brings the Parliamentary papers of Sweden up to date.

Mr. Horace Winchell presented the University Library with the remainder of the edition of the *American Geologist*, formerly edited by his father, Newton N. Winchell. This will be of value for exchange.

Catalog.—The cataloging department has been handicapped throughout the year by insufficient help. Cataloging is an unpopular branch of library service and one in which special training is essential. There is, therefore,

a shortage of skilled catalogers; the result is that only those libraries which are able to pay the maximum salaries are supplied with a full quota of assistants. One position in this department in our library has been unfilled since October, another since January, and a third since May. This has seriously affected the amount of work done in the department. Interruption of service and frequent changes in the staff are a menace to the quality as well as to the amount of work which can be turned out. Under present conditions change of personnel is likely to be for the worse, and even when we are fortunate enough to secure skilled assistants, there is necessarily some loss in the adjustment of any assistant to a new environment.

The statistics for the year 1920-21 are as follows:

	CENTRAL CATALOG	DEPARTMENTAL CATALOGS	TOTALS
Titles cataloged.....	5,900	1,218	5,900
Printed cards added to catalog.....	13,487	3,013	....
Typewritten cards added to catalog.....	8,106	1,529	....
Total cards added to catalog (incl. 876 cards from Agri. Lib.).....	22,464	4,542	27,006
Printed cards added to shelf list.....	2,515	516	....
Typewritten cards added to shelf list....	2,343	523	....
Volumes (new cataloging).....	8,965	2,003	....
Volumes added (serials, continuations, etc.)	3,344	1,003	....
Total volumes cataloged.....	12,309	2,918	12,309

Outside service.—The service of the University Library is far reaching. Our endeavor is to meet not only the demand from faculty and students, both resident and extension, but to provide books needed for special work by high-school pupils and teachers throughout the state. While the University Library can not undertake to supply the community with reading matter, we never refuse assistance to anyone in Minnesota making a special study or investigation, unless the demand conflicts with required work on the campus. The system of inter-library loans also extends our clientele throughout the country. Through the latter service we are as yet more often the beneficiary than the benefactor. During the past year we have borrowed 196 volumes from other libraries and lent 45. The largest number of volumes borrowed from any one institute has been from the Surgeon General's office for the use of members of the faculty of the Medical School. We have lent books from Texas to Winnipeg, from Montana to New York. This cooperative extension of library service is of great value, as it frequently enables us to put into the hands of graduate students rare and valuable books essential to their work.

Respectfully submitted,

INA TEN EYCK FIRKINS, *Acting 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, 1921.

This year has been one merely of routine business and a successful attempt at closer organization of the council. The work has been carried on without unfortunate differences of opinion, and in fact, it has been a great pleasure for me to serve in this capacity. I have been pleased to note a marked respect for the significance of good scholarship in the fraternities. Many of the fraternities are going beyond the rules of the by-laws in the attempt to improve their scholarship. I find also a decided sentiment on the part of the fraternities individually and as a whole, to create a spirit of loyalty to, and enthusiasm for, the University at all times and on all occasions. The number of students elected to fraternities varies only a little from that of last year.

Respectfully submitted,

R. M. BARTON, *President*

THE GENERAL ALUMNI ASSOCIATION

To the President of the University:

SIR: I submit herewith the report of the field secretary and that of the secretary of the General Alumni Association for the year ending June 30, 1921.

As the work of these two offices must necessarily overlap to a considerable extent, I take the liberty of presenting the report on the work of the year in their combined relationships.

Alumni units.—In the judgment of the Board of Directors of the General Alumni Association the most effective way of uniting our alumni and creating a sympathetic constituency among the alumni in general is to establish local alumni associations in those centers where there are enough alumni and former students to justify such an organization. As a result of this policy, we now have alumni units in the following places in Minnesota: *Hibbing, Rochester, Minneapolis (men), University campus, Crookston, *Duluth, Stillwater, *St. Paul, Fergus Falls, Austin, Faribault, Winona, St. Paul (women), Waseca, Brainerd, Dawson, Marshall, and Bemidji; outside of Minnesota: *New York City, *Great Falls, *Washington, D. C., *Southern California, *Spokane, *Chicago, Cleveland, Detroit, *Schenectady, Northern California, and Watertown. In Minnesota the following units are in prospect: Albert Lea, Detroit, Fairmont, Mankato, Owatonna, Red Wing, St. Cloud, Virginia, Willmar, and Worthington; outside of Minnesota: Portland, Oregon and Wallace, Idaho.

Minnesota Alumni Weekly.—With the appointment of Mr. Vincent Johnson as editor of the *Minnesota Alumni Weekly* and business manager of the Alumni Association came the change in the form and style of the *Weekly*. The page size was increased to 9x11 and a rather more elaborate make-up was undertaken.

The editorial policy of the *Weekly* was framed to meet the criticism of the General Alumni Association that its individual members were out of touch with the University. Intelligent and constructive criticism whether adverse or favorable has been regarded with favor, for the alumnus who is sufficiently interested to criticize is the alumnus who will give his active support when he is satisfied that our program is right. The personal side of the University, as well as that of the graduate body, has been stressed, since emphasis on personality is an effective means of overcoming indifference.

Alumni Association memberships.—The support of the Alumni Association is through life memberships in the association and subscriptions to the *Minnesota Alumni Weekly*. The life membership fee is \$10 and the life subscription to the *Weekly* is \$30. It is the policy of the association to sell these in the combined form to outgoing seniors, permitting them to pay at the rate of \$10 a year for four years. During this period they receive the

* Established before August, 1920.

Alumni Weekly and after the payments are made they receive it for life. Three hundred fifty pledges have been secured this year. It is the hope of the officers that this endowment fund will reach a point at which the association will be able to conduct its activities without financial embarrassment.

Alumni Directory.—In June, 1919, the regents of the University made provision for the printing of the *Alumni Directory* and a list of former students through the office of the comptroller. It seemed wise, with the establishment of the office of the field secretary, to transfer this work to the office of the field secretary. Miss Franc M. Potter was appointed editor and placed in charge of this work October 1, 1920. A complete card index of the graduates of the University has been made, and the directory information is now being prepared for the printer. It is expected that the directory will be ready for publication before the opening of the next college year. The alumni campaign to secure \$2,000,000 for the building of a stadium, the expansion of Northrop Field, and the erection of a memorial auditorium necessitates not only the speeding up of the *Alumni Directory*, but also of the list of former students. Work on the latter list has been begun and will be completed to have it available for the fall campaign.

The University War Memorial.—The interest in the University in the organization of alumni units, the election of a new president, and the legislative difficulties in connection with support resulted in a crystallization of rather nebulous ideas as to how the University might be helped. The Minneapolis and the St. Paul alumni units arranged for a dinner following the inauguration of President Coffman, Saturday evening, May 14, to which were invited representatives from the various local associations. At this meeting it was unanimously voted that the alumni sponsor the project of raising \$2,000,000 to expand Northrop Field by some fifteen acres, of building a stadium seating approximately 90,000 people, and of erecting a memorial auditorium.

University functions.—The field secretary is also University marshal and chairman of the Committee on University Functions. The following University functions were held within the year: September 30, December 16 (commencement exercises), January 27, February 3, February 10, February 17 (Charter Day), March 3, March 10, March 17 (Legislative Day), April 21, May 5, May 12 (Cap and Gown Day), May 13 and 14 (inauguration exercises), May 19; June 12 (baccalaureate exercises), and June 15 (commencement exercises).

Extra-official activities.—The field secretary has continued certain activities in which he was engaged while registrar of the University, viz: the presidency of the Board of Governors of the Minnesota Union and the presidency of the Committee of Management of the University Y.M.C.A. The student contacts through those associations have more than compensated for the work involved.

Respectfully submitted,

E. B. PIERCE, *Field Secretary of the University and
Secretary of the General Alumni Association*

THE REPORT OF THE REGISTRAR

To the President of the University:

SIR: I submit herewith a report of the work of the registrar's office for the year 1920-21:

Changes in organization.—At the opening of the year the position of chief clerk in this office was abolished, and the record clerks were organized into three distinct groups or bureaus, with a record superintendent at the head who is directly responsible to the assistant registrar for all of the records of her group. This plan provides for greater flexibility in the administration of the work of the office, and should eventually result in increased economy since changes in personnel, particularly in the lower ranks will not so seriously interfere with the continuity of the work.

Progress in centralization of registration and articulation with college faculties.—During the year just closed definite steps have been taken for further centralization of the registration for the University. The registration office at University Farm, which is responsible for the records and registration of the College of Agriculture, Forestry, and Home Economics, the schools of Agriculture, and the Agricultural Short Courses, has been definitely recognized as a branch of the University registration office, with the University registrar in charge.

The keeping of duplicate registration records in the Medical School and in the College of Dentistry has been discontinued. Only one set of records for these colleges is now kept, and these are made available by the registrar's office for such faculty officers and committees as are interested.

The University Senate at their meeting December 16, 1920, approved the following plan for better articulation between the registrar's office and the college and school faculties:

- a. Recognition of the registrar as an ex-officio non-voting member of each faculty or executive faculty, with the privilege of attending all meetings in person or by delegate.
- b. Filing of all executive faculty and general faculty minutes in the registrar's office.
- c. Filing all faculty committee minutes which have to do with programs, curriculum, students' work, or enrolment, in the registrar's office.

In addition to this formal recognition, the record superintendent in charge of the records for the College of Education has been made a voting member of the Students' Work Committee of that college. Representatives from this office meet with the Students' Work Committees of the College of Dentistry, the Medical School, and the College of Agriculture, Forestry, and Home Economics. Further contacts of this kind with the various school and college faculties will, without doubt, greatly increase the value and efficiency of the office.

General Deposit Fee Bureau.—At the opening of the year a new bureau was established in this office to take charge of the general deposit fees which are required of all students to cover breakage, laboratory supplies, library

files, etc., and to provide as soon as practicable for the centralization of the issuing of all locker keys. The limited space available in the Library Building for this office has made it impossible up to the present time to take over the issue of locker keys, except for the Library Building and Folwell Hall.

Reduction of penalty fees.—At the opening of the spring quarter, the penalty for late registration, late payment of fees, and late change of registration was revised by the reduction of the initial charge from five to two dollars. The per diem charge was unchanged, but the maximum charge for any one quarter was reduced from fifteen to twelve dollars. Special precautions were taken for the notification of students with reference to penalties with gratifying results. The number of penalties for the spring quarter was materially reduced.

The regulation was further modified by exempting all graduate students from penalty fees of any kind.

Changes in entrance subjects.—The University Senate on December 16, 1921, approved the recognition of one-half unit in sociology as an entrance subject in Group C, History and Social Sciences. No other changes in entrance subjects were made during the year.

Accredited schools and colleges.—The following recommendations of the Committee on the Relations of the University to Other Institutions of Learning, were approved by the University Senate, December 16, 1920:

1. That section 3b, under Specific Regulations in the Standards for Judging Minnesota Schools Offering One or Two Years of College Work, be modified to read as follows:

(b) Admission. Only graduates of a secondary school accredited to the University, or high-school seniors who have completed a minimum of fifteen entrance units, may be admitted to junior-college classes, except those in elementary languages, where properly qualified high-school seniors may be allowed to enter.

2. That Bethlehem Academy, Faribault, Minnesota, be added to the published list of secondary schools accredited to the University.

The following additional recommendations were approved by the Senate, May 19, 1921:

1. Concordia College, Moorhead. Voted to recommend that Concordia College be retained on the list of junior colleges but that further accrediting of this institution be deferred for the present.

2. Correspondence courses in physics. Voted not to approve for admission the proposed correspondence course in high-school physics, inasmuch as such course, without laboratory, could not be equivalent to the standard course in high-school physics.

3. Advanced standing for high-school work. At a meeting of the Committee on Relations of the University to Other Institutions of Learning, February 14, 1917, the following action was taken: "Voted that no college credit can be granted for high-school work of any kind except upon examination in the content of University subjects." This action, never having been reported to the University Senate, was again considered and the committee voted to reaffirm their previous action. It was the understanding of the committee that examinations for credit in such cases are to be allowed only when the subject in question has not been used for University entrance.

4. Oak Hall, St. Paul. Dr. Koos reported on the existing conditions at Oak Hall, and it was voted to continue this school on the preparatory list until next fall, with the understanding that its continuance on the list after that time shall receive further consideration.

5. St. Mary's School, Winona. On recommendation of the Inspector of Secondary Schools, it was voted to continue this school on the list of accredited schools, provided that the conditions criticised in the report of the inspector are remedied.

6. Cathedral High School, St. Cloud. Voted to drop this school from the special list of secondary schools, defer the accrediting of the school, and suspend further inspection until such time as the reports from the school show progress towards meeting the standards for qualifications of instructors.

7. Park Region Luther College, Fergus Falls. Voted to continue this school on the accredited list, with the understanding that improvements must be made before the next inspection, or the school will be dropped.

8. Summit School, St. Paul. Voted to retain this school on the accredited list.

9. Cotter High School, Winona. Voted to retain this school on the accredited list, provided the standards are met as has been promised.

10. Bethel Academy. Voted to continue this school on the accredited list.

11. Breck School, St. Paul. Voted to include on special list of private and secondary schools.

12. St. Benedict, St. Joseph. Voted to retain on the list of accredited schools.

13. St. Joseph Academy, St. Paul. Voted to retain this school on the accredited list if the criticisms made by the inspector are met before the next inspection.

14. Cathedral High School for Girls, Winona. Voted to retain on the accredited list.

15. Voted to accredit the following junior colleges for two years of work: Hibbing Junior College, Winona Normal Junior College, Rochester Junior College, Eveleth Junior College.

16. Pipestone Junior College. Voted to give individual consideration to such students from this college as may transfer to the University next year, but to withdraw the school from the accredited list unless the standards are complied with in every respect at the opening of the next school year.

17. Villa Sancta Scholastica. Voted to continue the recognition for one year of work, provided the Junior College standards are met with reference to instructors and facilities for the sciences and library.

18. Voted to accredit the Duluth Normal Junior College for one year.

The Annual Register.—The University Senate at their meeting May 19, 1921, approved a recommendation for the revision of the content of the *Annual Register* as follows:

In order to do away with as much duplication as possible, the committee recommends the omission of approximately twenty-five pages from the *Annual Register*, including the following sections:

- a. Schedule of condition examinations.
- b. Program of entrance examinations.
- c. General admission requirements.
- d. Admission requirements of the individual colleges.
- e. Admission as unclassified students.
- f. Admission with advanced standing.
- g. List of accredited preparatory schools.
- h. Description of subjects accepted for admission.
- i. Living expenses.
- j. Self-support.

Inasmuch as the *Annual Register* is intended to serve as a record for the year, the committee also recommends:

a. That the statement with reference to scholarships, loans, and prizes, etc., should be abbreviated so as to give only the necessary information with reference to donors, amounts of prizes, and conditions under which the prizes are granted, and that the names of the recipients of the prizes and scholarships during the year should be included.

b. That the statement with reference to organizations and publications be segregated, and that the names of officers of official University organizations be included.

c. That in addition to the summary of attendance a statistical table showing the degrees granted and the number of each kind of a degree be also included.

d. That the statement with reference to fees be limited to a tabular statement showing the general and special fees in each college.

It is further recommended that the following new material be included in the *Annual Register*.

a. Senate and Administrative Committee legislation enacted during the year to serve as a supplement to the Laws and Regulations Governing the University of Minnesota.

b. The personnel of Senate and All-University committees.

Enrolment.—For tables and comments see pages 34 to 61.

Respectfully submitted,

R. M. WEST, *Registrar*

THE UNIVERSITY HEALTH SERVICE

To the President of the University:

SIR: The following is a summary of the activities of the University Health Service for the school year 1920-21.

On January 15, 1920, the regents voted to extend the Health Service to the schools of agriculture at Crookston and Morris. On April 14, 1920, upon the recommendation of the director of the Health Service, the board adopted regulations for this purpose which are printed in the *President's Report of 1919-20*.

Medical services rendered.—In the following abridged report of the services given to students, the four stations of the Health Service are included—University, University Farm, Morris, and Crookston.

TABLE I

	UNIVERSITY	UNIVERSITY FARM	MORRIS	CROOKSTON	TOTAL
Physical examinations.....	3,284*	522	219	193	4,218
Visits to Dispensary, consultations, advice, and treatment	28,223	6,784	1,075	483	36,565
Outside calls	1,336	16	...	...	1,352
Hospital cases	671	264	55	80	1,070
Total services rendered...	33,514	7,586	1,349	756	43,205

* In cooperation with the departments of physical education.

Thus a total of 43,205 services were rendered. That there has been an unusual growth of the activities of the Health Service may be seen from the following comparison:

TABLE II

	1918-19	1919-20	1920-21
Total number of services rendered by the University Health Service.....	17,347	32,639	43,205

It must be borne in mind that the two previous school years 1918-19 and 1919-20 were emergency years due to the prevalence of influenza and the resources of the Health Service were taxed to the utmost in caring for the large number of students afflicted. Notwithstanding the fact that the present school year 1920-21 has been a normal year relative to illness, with the exception of the paratyphoid fever epidemic which affected 84 students, and the enrolment is somewhat less than the school year 1919-20, there was an increase of 10,560 visits over the previous "influenza" year. This number includes the 1,558 visits made at Crookston and Morris which were not included in the previous annual report.

Causes of rapid growth.—Minneapolis and the environment of the University of Minnesota can not be regarded as located in an unhealthy climate. On the contrary, the death rate in this state is among the lowest in the nation. The increased number of visits to the dispensary is due in the largest measure to the educational features of the Health Service. All entering students must take a physical examination before registering. Subnormals are given inventories of their own defects and sent immediately to the specialist concerned at the Health Service for consultation with a view of having these defects corrected. Further, all freshmen are taken through the dispensary in small groups early in the school year and are given talks along lines of health conservation. At the same time the scope and functions of the Health Service are explained. This particular educational phase of our activity is augmented by timely press articles, lectures, and the like. As a consequence of our stress on the preventive side of medicine more and more students visit the Health Service with a view of seeking advice and early treatment for minor ills and defects. In every instance there is a real reason for each visit. The Health Service is doing all it can to encourage students to consult it early in matters pertaining to health and disease.

Thus, positive health and preventive medicine are "taking hold" of students. The inculcation of the desire to be active and strong and the appreciation of these principles on the part of the student is responsible for the rapid growth of the Health Service.

Per capita service.—The total enrolment of students, those who paid regular health fees of two dollars per quarter, is as follows:

University and College of Agriculture.....	7,500*
University Farm, School of Agriculture.....	960
Northwest School of Agriculture, Crookston.....	219
West Central School of Agriculture, Morris.....	193
Total.....	8,872

* Approximated, exact figures not available at registrar's office.

Of this number, 6,564 individual students received treatment at the Health Service, making 74 per cent of the entire student body. At the schools of agriculture the number of students reached by the Health Service was 100 per cent of the enrolment. This high percentage of students enrolled receiving service is gratifying indeed, especially in view of the fact that so many of them live in the Twin Cities. An average of 5 visits was made by every student enrolled.

Dispensaries.—The various dispensaries of the Health Service are made as attractive and home-like as possible. Every effort is made to "get away" from the general institutional method of treating patients. The medical and nursing staff are instructed and encouraged to take a sane, parental interest in the students coming to the dispensary. "These are our children."

Table III shows the monthly visits at the Health Service Dispensary on the main campus. An analysis of cases diagnosed and treated at this dispensary station, main campus, shows a total of 8,184 cases. This includes only those separate cases actually diagnosed. A large number of cases were treated in which the diagnoses are not recorded.

TABLE III
DISPENSARY REPORT, UNIVERSITY HEALTH SERVICE, MAIN CAMPUS,
FOR YEAR OF SEPTEMBER 29, 1920 TO JUNE 20, 1921

	Dispensary calls for treatment	Refractions	Acne inocu- lations	Vaccinations smallpox	Typhoid in- oculations	Inoculations T. B. iron poison tetanus	Laboratory reports	Mercury	Salvarsan
September ...	153	0	0	0	0	0	7	0	0
October	2,236	5	171	1	0	0	153	..	3
November ...	2,923	29	234	61	0	8	212	..	5
December ...	2,309	22	147	147	3	6	221	..	0
January	4,816	53	185	1,066	0	3	233	..	0
February ...	3,593	36	143	193	0	7	207	..	0
March	3,029	25	137	109	54	25	492	..	13
April	2,627	42	143	110	205	25	240	8	9
May	2,213	67	135	6	15	27	157	0	2
June	1,040	29	44	8	14	28	62	0	0
Total	24,939	308	1,339	1,701	291	129	1,984	8	32

To this total of 24,939 should be added 3,284 who came for advice and instruction, thus making a total of 28,223 visits at this station.

In the above dispensary reports, two striking features stand out. Table III shows that the largest number of visits to the dispensary is during the months of November and January. This is explained as follows: When students congregate for the opening of the school year, many bring respiratory infections which, due to close social contact, are soon spread throughout the University. The peak of this infection is reached in November, after which there is a decline due to recovery and established immunity. A second general respiratory tract infection is introduced after the Christmas vacation due to the fact that new infections are "picked up" by students while home on vacations. These new infections, for which there is little or no immunity among students, are responsible for the second wave which reaches its peak in January.

Of a total of 8,184 cases diagnosed in this dispensary approximately 3,000 were naso-respiratory infections. The control of this group of diseases is one of the largest problems confronting the Health Service.

Owing to the lack of facilities it has been necessary to maintain two dispensaries at University Farm, one in the boys' new dormitory and one in the girls' dormitory. Arrangements are now in progress by which these will be combined in the near future. The report of the dispensaries at University Farm shows that 4,115 cases were treated, Morris reports 1,075, while the total for Crookston was 505, in addition to 193 vaccinations for smallpox. The health services at the three schools of agriculture—University Farm, Morris, and Crookston—are open for a period of six months only—October to March inclusive.

Hospital cases.—Hospital facilities are provided in close association with the dispensary. This is absolutely essential in the administration of an efficient health service. During the course of a day many dispensary visitors are detected who are in need of close observation. Beds in close proximity to the dispensary, therefore, must be provided. All students found with temperatures of one degree or more are hospitalized. This procedure does two things: (1) Early hospitalization minimizes the dangers of serious ailments. (2) Early hospitalization and isolation of infections prevents, in the largest measure, epidemics. Again, beds must be provided in order to care for patients who are undergoing correction of certain defects.

I have purposely separated the hospital reports from the dispensary reports in order to show their importance.

The total number of hospital bed cases is as follows:

	MALE	FEMALE	TOTAL
University of Minnesota	491	180	671
University Farm	189	75	264
West Central School of Agriculture.....	31	24	55
Northwest School of Agriculture.....	65	15	80
Total			1,070

The detailed activities of the Hospital Service are seen in the following table.

TABLE IV

HOSPITAL REPORT, UNIVERSITY HEALTH SERVICE, MAIN CAMPUS,
FOR YEAR OF SEPTEMBER 29, 1920, TO JUNE 20, 1921.

	Patients Admitted		Patients Discharged		Deaths	Days' care	Operation	X-rays and fluoroscope	Outside calls	Referred to Millard dispensary
	Male	Fe- male	Male	Fe- male						
September ..	2	0	0	0	0	1	0	5	3	0
October	28	9	28	9	0	109	9	16	79	5
November ..	40	19	34	17	0	199	16	22	137	11
December ..	80	29	73	28	1	358	61	17	81	6
January	74	24	77	21	0	359	36	30	231	5
February ...	51	20	52	19	0	374	28	31	175	5
March	79	31	69	34	1	676	3	30	240	4
April	36	10	41	16	1	473	8	35	230	3
May	65	18	71	17	0	341	45	46	121	12
June	36	20	37	11	0	183	49	16	34	3
Total...	491	180	482	172	3	3073	255	248	1336	54
Total...	671		654							

The total number of hospital days and the average number of days' stay in the hospital may be seen in the following report:

TABLE V

	NUMBER OF PATIENTS	TOTAL NUMBER OF HOSPITAL DAYS	AVERAGE STAY IN HOSPITAL
University of Minnesota	671	3,073	5
University Farm—			
Boys' new dormitory.....	189	1,544	8
Girls' new dormitory.....	75	366	4
West Central School of Agriculture, Morris, Minn.....	55	298	4
Northwest School of Agriculture, Crookston, Minn.....	80	385	4
Total.....	1,070	5,666	5

Smallpox.—This disease has been unusually prevalent in the Northwest during the past season. The Health Service took active measures to prevent by vaccination the spread of this disease among students. As a result the number of cases was limited.

CASES OF SMALLPOX

STATION	
University	12
Farm—boys	7
Farm—girls	0
Morris	10
Crookston	14
Total.....	43

The number of vaccinations performed at the four stations is as follows:

NUMBER OF VACCINATIONS

STATION	
University	1,701
Farm—boys	762
Farm—girls	220
Morris	219
Crookston	193
Total.....	3,095

The response to the urgent request that all students be vaccinated was gratifying indeed. All students in the three schools of agriculture were vaccinated immediately after talks on "the dangers of smallpox and the efficacy of vaccination as a preventive" were made before these students. The student body on the main campus was reached through the *Official Bulletin*. Our experience shows the success of voluntary vaccination.

Paratyphoid fever.—The general health condition of the University was marred by an epidemic of paratyphoid B infection. The source of the disease was traced to the Men's Union. The infection occurred during the first

two weeks in March. As a result of the most careful epidemiological studies conducted by the State Board of Health, it concluded that the infection took place through milk. One hundred persons, six of whom were doubtful, contracted the disease. Many of these were not students. In some cases the disease was severe. Two deaths, one of which occurred at the Health Service, resulted.

The director does not feel that this epidemic was the result of any undue carelessness on the part of those concerned in the serving of food. Our sanitary inspector had made frequent inspections of dining-rooms and kitchens and examinations of the milk. He had reported conditions as excellent. It is true that bulk milk was served but the same precautions—drawing, distribution, transportation, and pasteurization of milk—were taken with this milk as are taken with other milk served in Minneapolis. However, every precaution will be taken in the future to minimize the dangers of such infections. Only bottled milk will be served at the various University dining places and all persons engaged in preparing and serving of food will be examined with a view of eliminating carriers.

The Health Service is especially indebted to the State Board of Health for its active interest and activities in the control of this epidemic.

Deaths.—Notwithstanding the large number of dispensary visits—43,205—and of bed cases—1,070 in all—many of which were more or less serious, only three deaths occurred among students at the Health Service. These were from the following diseases:

Pneumonia	1
Meningitis	1
Paratyphoid fever	1
Total.....	3

Visiting nurse.—The Health Service is making every effort to push its activities into the active life of the students. A visiting nurse who has had special training in public health work was employed for this purpose. The results of her efforts have been unusually satisfactory. The following is a report of her activities:

REPORT OF VISITING NURSE

MONTH	NURSE'S CALLS AT SANFORD	NURSE'S CALLS OUTSIDE	TOTAL NURSE'S CALLS	TOTAL CALLS MADE
October	50	11	61	79
November	75	36	111	137
December	31	11	42	81
January	143	22	165	231
February	95	34	129	175
March	73	16	89	246
April	176	8	184	229
May	96	3	99	121
June	26	5	31	34
Total.....	765	146	911	1,333

Girls referred to Millard Hall.....	25
Girls taken to X-ray department.....	70
Gymnasium examinations arranged for.....	8
Groups to which health talks were given.....	5
1. All-freshman girls' convocation	
2. Householders Council	
3. Student's House Council, sec. I	
4. Student's House Council, sec. II	
5. Social Service Commission of Y.W.C.A.	

The University Health Service seeks the closest relationship with all activities on the campus engaged in student's welfare work. During the past year, it has held frequent conferences with the Y.M.C.A. and Y.W.C.A. secretaries and committees. The coöperation of these two associations has been ideal in every respect. They have visited all our bed cases and brought many comforts to them. The dean of student affairs, the dean of women, the Housing Bureau, the departments of physical education, the Medical School, and the College of Dentistry—all have rendered invaluable service.

Sanitation.—A sanitary inspector was engaged with a view of looking after the students' environment both on and off the campus. The young man employed for this purpose holds a fellowship in the College of Engineering. His report which follows is of interest.

REPORT OF SANITARIAN

Voluntary health officers have been appointed for the following buildings:

Pillsbury Hall	Dentistry Building
Education Building	Pharmacy Building
Folwell Hall	Chemistry Building
Physics Building	Minnesota Union
Main Engineering Building	Shevlin Hall
Experimental Engineering Building	Armory
Electrical Engineering Building	Library Building
Mechanical Engineering Building	

Method of organization.—The health officers in most cases have been appointed by the deans of the different colleges. The dean is asked to give the names of the men he wants to serve in that capacity. These men are then seen by the sanitarian and given the proper instructions and blanks to be used for reporting conditions.

The functions of the voluntary health officer may, in short, be said to supervise the sanitary conditions of his building, to see to it that it is kept sanitary in every respect, and to report conditions to the sanitarian each week.

The health officer notes whether the janitor sweeps rooms and halls properly, keeps the blackboards clean, and so forth.

The janitors come directly under the supervision of the superintendent of buildings and grounds and receive orders from his office. Any complaint which is brought up in regard to their service is referred to his office.

The sanitarian, health officer, and janitor cooperate in every respect in order to obtain the necessary result—and only through this cooperation can the best results be obtained. It is impossible for the sanitarian to cover every building as thoroly and frequently as is desirable. The voluntary health officers, therefore, keep the sanitarian informed as regards the buildings by means of weekly reports.

In case undesirable conditions are reported, such as poor ventilation, etc., this is taken up with the office of the superintendent of buildings and grounds who in turn assigns men to investigate and correct conditions. Many things come up that must be referred to the director of the Health Service for his direction. The sanitarian recommends to the director of the Health Service that these things be done—in this connection might be mentioned the changing of the present system of drinking fountains which is now in process. New fountains will be installed which have the approval of the State Board of Health.

Regulations pertaining to classrooms.—The classrooms are to be swept at least once each day and a sweeping compound must be used in order to avoid dust. The time for sweeping depends upon the use of the room. Some rooms are in constant use throughout the day and therefore must be swept in the morning. Others, like drafting rooms, may have to be swept twice each day. The blackboards are cleaned every day. The ventilation of the classrooms between periods is taken care of by the students in some buildings, while the janitor sees to it in others. The ventilation in some rooms is a serious problem, and in many cases demands special attention. This is especially the case in laboratories. The heating of the classrooms is automatically taken care of by the thermostats, and is in most cases satisfactory.

Lecture rooms.—Efforts are being made to improve the ventilation of the large lecture rooms. The sanitarian is to be notified when special meetings and gatherings are to occur. The sanitarian will then, just previous to the meeting, make inspections with a view of arranging for the best possible ventilation that the facilities offer. The superintendent of buildings and grounds will cooperate with the sanitarian in the efforts to improve ventilation.

Toilets.—The toilets will be inspected by the voluntary health officer of the building. He should note whether the toilet is properly swept, ventilated, etc., and in case he thinks any changes for the better could be made, report the same to the sanitarian, who in turn will investigate the matter and take it up with the superintendent of buildings and grounds.

Halls.—The halls, as well as the classrooms, are to be inspected and must be at all times kept clean and ventilated.

Drinking fountains.—Some years ago the present drinking fountains were installed on the campus. Many complaints have been filed relative to their inconvenience. This year an investigation has been carried on for the purpose of securing a drinking fountain that will give satisfactory service and at the same time be sanitary in every respect. The superintendent of buildings and grounds and the chief of the division of sanitation, State

Board of Health, have been experimenting with different makes of bowls and nozzles with a view of improving these fountains. New fountains will be installed just as soon as a satisfactory type is recommended.

Milk.—During the winter quarter a thoro investigation of the milk supply delivered to the University was made in coöperation with the State Board of Health. Samples of the milk delivered have been taken at all places on the campus where it is used and taken to the laboratory of the State Board of Health for plating. A separate report on this investigation will come out later.

Swimming pools.—The three swimming pools at the University have been examined constantly during the school year. Samples have been taken from the pool two to three times a week and immediately taken to the laboratory and plated—two or three different dilutions being made so as to get a check. The presence or absence of B. Coli is also ascertained. The results of these tests are then sent to the superintendent of buildings and grounds, together with a report of the sanitary condition of the pools. The results have been satisfactory throughout the year with the exception of those obtained from the Farm School pool early last fall. The water in this pool was improved. The water in the tank pools is constantly filtered, and the filters in turn are cleaned once each week.

Conclusions.—The foregoing annual report of the activities of the University Health Service is somewhat bulky. Its complete publication, however, will prove to be of distinct value, for in more than a dozen states throughout our country, compulsory health insurance bills have been introduced into the legislatures. The statistics and tables in this report should be of value to insurance investigation committees in determining the cost and activities of universal compulsory health insurance.

The establishment of a Department of Hygiene and Public Health at the University will do much to augment the activities of the Health Service. Future public health work is going to be concerned in the very largest measure in dealing directly with people. A health agency made up of departments of hygiene and public health which will emphasize the educational features and a health service which deals directly with the individual in matters pertaining to health is an ideal situation. We feel confident that the solution of future public health work for the community, the state, and the nation will be along the lines that the University of Minnesota is working out. Thus the Health Service is not only of value for its direct effects but it is of great importance as an experiment or laboratory wherein future health work is to be solved.

Our real need at present is a new building especially designed for the activities of a health service or center. In this center, facilities must be provided for a dispensary, a hospital—under no circumstances should the hospital be separated from the dispensary, laboratories, classrooms, and demonstration rooms wherein health exhibits and instruction in the fundamentals of right living may be conducted.

We sincerely trust that a building of this type will be provided in the near future.

Respectfully submitted,

JOHN SUNDWALL, *Director*

THE BUREAU FOR RESEARCH IN GOVERNMENT

To the President of the University:

SIR: The last annual report of the Bureau for Research in Government was sent to you under date of April 9, 1920. The report for this year is submitted a little later in order to make it correspond more nearly with the fiscal and academic year. The bureau was established in 1919 for the purpose of promoting research work in government at the University and also with the object of putting out a series of useful informational bulletins concerning the problems of the state and local government of Minnesota. That is to say, the bureau aims to serve the state in several ways: 1. By providing the necessary materials and equipment for stimulating research among the students and faculty of the University. 2. By preparing and publishing reliable studies of our own state's governmental problems.

The bureau has its offices in the Library Building directly over the offices of the comptroller's department. Its staff consists of a director, a secretary, and a stenographer, each of whom, however, devotes only a part of his or her time to the work of the bureau. The secretary, Miss Sophia Hall, is paid out of the funds of the Extension Division and the stenographer, Miss Effie Fitz Patrick, is paid out of the budget of the Department of Political Science. By a joint agreement between the Extension Division and the Department of Political Science both the secretary and the stenographer devote half of their time to this bureau and the other half to the Municipal Reference Bureau, which has its offices in the same rooms. During the past year the director taught eight regular classes a week in the fall quarter, five a week in the winter quarter, and eight a week in the spring quarter. In addition to this he directed the work of three students in the seminar throughout the year. One of these students, Mr. Harold F. Kumm, won the first prize in the Harris political science contest with a paper written under the supervision of the director. Another of these students, Mr. Coleman R. Robinson, completed his Master's thesis, and a third, Mr. Anders W. Anderson, made a beginning of his Master's thesis. Also in addition, due to the shortage of assistants in the Department of Political Science, the director taught an additional four hours a week during the spring quarter. It is of course very desirable that the director should continue his teaching in the department, but the accomplishments of the Bureau for Research in Government will necessarily be somewhat smaller than might otherwise be the case when the teaching burden of the director is as heavy as it has been during the past year.

A word should be said about the budget. The bureau's budget item No. 83A was credited at the beginning of the year with \$1,200. This sum was not all appropriated to the bureau, however; \$200 of it was really intended for equipment for the Department of Political Science, and was therefore, transferred early in the year for that purpose. Of the remaining

\$1,000 the bureau has spent up to date about \$631, leaving a balance at the end of the year of something over \$350. This balance remains in spite of the fact that \$100 was transferred to a miscellaneous salary item for the purpose of employing assistance for President Emeritus Folwell on his work *A History of Minnesota*; \$210 was expended for the purchase from the Library of 120 copies of *A History of the Constitution of Minnesota with the First Verified Text*, to be used by the bureau for exchange purposes; \$76.75 was used for the purchase of a new typewriter desk; \$81.50 for the purchase of a new steel filing case; and \$80 for miscellaneous assistance on the *History of the Constitution*. The reason why the bureau was able to go through the year without exhausting its funds was the fact that it was unusually successful in getting others to print its publications. This will not always be possible in the future.

Among the accomplishments of the year 1920-21 the bureau makes mention of the following:

PUBLICATIONS AND REPORTS

1. *A History of the Constitution of Minnesota with the First Verified Text*. 1921. 323 pages, published by the University as a study in the Social Sciences Series, number 15. While the work on this study was begun even before the establishment of the bureau its completion is largely attributable to the existence of the bureau. This study was explained to the readers of the *Minnesota Law Review* in an article entitled *The Constitution of Minnesota* published in the *Law Review* in May 1921, Volume 5, pages 407-35.
2. *An Outline of the Government of Minnesota*, 74 pages, published by the Minnesota Republican Women's State Executive Committee. 1921. This organization published 10,000 copies of this outline and gave it a circulation throughout the state.
3. *Minneapolis Charter Problems*, 40 pages, published by the Women's Club of Minneapolis and the Fifth District League of Women Voters, 1921. These organizations published 5,000 copies of this pamphlet, of which more than half have already been sold in the city of Minneapolis.
4. In the fall of 1920 before the election the director prepared for the League of Women Voters an explanation of the several amendments which were submitted to the voters of the state in the 1920 election. This explanation was mimeographed and sent throughout the state by the League of Women Voters and it was also printed in *Minnesota Municipalities*, October 1920, Volume 5, pages 125-30.
5. The director also prepared a report on *City Charter Problems in Minnesota, 1921*, which was read at the convention of the League of Minnesota Municipalities, at Winona, June 16, 1921.
6. Under the supervision of the director, the secretary, Miss Hall, made a survey of the scientific and research activities of the state government for the National Research Council. For this work, which has not been published, the bureau was compensated to the extent of \$36.94 by the National Research Council.

7. Throughout the year the director kept himself at the service of the Charter Commission of Columbia Heights. This commission adopted the first genuine city-manager charter to be drawn up and adopted in this state. The director did not impose this plan upon the commission, nor in any way try to control the judgment of its members as to the best form of government for Columbia Heights. He acted simply as a sort of technical adviser and he also, at the end, put the charter into shape. Since this charter has been adopted, considerable interest in it has been shown by outsiders. It will probably serve as the basis in the preparation of a model city charter for the smaller cities of Minnesota.

ASSISTANCE TO STUDENTS

Under this heading attention should be called to the fact that the Bureau for Research in Government works in close coöperation with the seminar of the Department of Political Science. Two seminar students of the past year received a great deal of their material through the efforts of the bureau and others were also assisted. The secretary of the bureau acts also as secretary of the seminar for the purpose of keeping in touch with the work there being done. In addition to this the instructors in the course in American Government each sent a considerable number of students to the bureau for assistance; and more than fifty students and faculty members have made miscellaneous requests for assistance in person, most of them being able to borrow from the bureau some pamphlets or newspaper clippings or other materials which were of use to them.

THE COLLECTION OF MATERIALS

During the past year the bureau has more than doubled its collection of useful printed materials. Special emphasis was put upon making complete our collection of (a) state election laws, (b) governors' messages, (c) state constitutions, (d) publications of constitutional conventions, (e) state road laws. Up to this time the bureau has not perfected a scheme for the classification of the material but that task will probably be accomplished during the coming year and in the meantime a temporary scheme is proving adequate for all purposes.

MISCELLANEOUS ACTIVITIES

1. A number of persons here and there throughout the state and even beyond its borders look upon this bureau as a sort of general information center. A number of inquiries and requests for information, have been received by letter and by telephone during the past year. When it is possible to do so the bureau provides the requested information, but it is not making a point of serving the public in this capacity.

2. In coöperation with the Municipal Reference Bureau this bureau assisted in the holding of a municipal exhibit in the Curtis Hotel during the

convention of the League of Women Voters in December 1920. Little publicity was given to the exhibit and the attendance was small, not due to any fault in the preparation of the exhibit, but simply because the delegates did not have time to give to the exhibit and because their attention was not called to it. The exhibit consisted of posters, charts, maps, pictures, books, pamphlets, etc.

3. Encouraged by the great interest in political activities shown before the last election and in fact throughout the year by the various women's organizations, the director spoke at a considerable number of afternoon and evening meetings, delivering lectures upon current unpartisan political questions and particularly upon the problem of the municipal charter. All told, he delivered eighteen lectures upon various subjects before the League of Women Voters, the Republican Women's Organization, the Democratic Women's Organization, the Business Women's Club, the Civic and Commerce Association, the North Side Commercial Club, the Calhoun Commercial Club, and others. The director is not convinced that these miscellaneous addresses are of any particular educational value, but he feels that the University should give some attention to the outside public in the matter of supplying them with accurate information upon current political questions.

4. Through the Minnesota Historical Society the bureau put at the disposal of the committees of the legislature a quantity of clippings, pamphlets, etc., on the tonnage tax and income tax. As the collection of materials increases, the bureau will be able to give more assistance of this kind to public authorities.

In conclusion the director wishes to say that the past year has been one of unusual interest in political matters, and therefore of unusual activities in this bureau. It is not to be expected either that the public interest will always be maintained as fully as it has been during the past year, in which we have had a Federal, a state, and a municipal election including the question of home rule for Minneapolis, nor is it to be hoped that the bureau with its small facilities will be able every year to turn out as much as was produced during the past year. Nevertheless we hope to have some good things to report also a year hence.

Respectfully submitted,

WILLIAM ANDERSON, *Director*

FINANCIAL REPORT

To the President of the University:

SIR: I enclose herewith a summary of the financial operations of the University of Minnesota covering the period from July 1, 1920, to June 30, 1921. Full detailed statistics covering this period are included in the *Report of the Comptroller*.

Respectfully submitted,

ALBERT J. LOBB, *Comptroller*

FIRST ADD—FIFTY B—PREST REPT

		INCOME SUMMARY			
		1919-1920	Per Cent	1920-1921	Per Cent
FROM INTEREST					
Swamp Land Interest.....	\$ 30,210.00			51,119.65	
Land Grant—Contracts	9,102.44			8,552.49	
Land Grant—Bonds	5,400.00			7,090.00	
Land Grant—Invested Funds	65,170.17			47,957.65	
	<hr/>	\$ 109,882.61	3.1	<hr/>	\$ 114,719.79 2.6
FROM FEDERAL FUNDS					
Morrill Fund	25,000.00			25,000.00	
Nelson Fund	25,000.00			25,000.00	
Adams Fund	15,000.00			15,000.00	
Hatch Fund.....	15,000.00			15,000.00	
Smith-Lever Fund	111,809.73			124,225.55	
Smith-Hughes Fund.....	15,246.25			17,716.69	
Social Hygiene	17,250.00				
	<hr/>	224,305.98	6.2	<hr/>	221,942.24 5.1
FROM STATE					
23/100 Mill Tax.....	425,358.83			401,524.06	
Maintenance Appropriation.....	1,865,000.00			1,865,000.00	
Emergency Appropriation				547,179.00	
County Agents Appropriation.....	86,000.00			86,000.00	
Peat Soil Investigation.....	6,000.00			6,000.00	
Sandy Land Investigation.....	1,000.00				
Low Lime Soil Investigation.....				1,000.00	
Agricultural Extension.....	30,000.00			30,000.00	
	<hr/>	2,413,358.83	67.0	<hr/>	2,936,703.06 67.5
Buildings Fund not included (see below)		(542,492.42)			(554,302.61)

FROM STUDENT FEES (Net)

University Regular	330,952.01			503,251.78	
Summer Session	54,880.21			58,414.67	
Agriculture	35,385.06			47,213.04	
Crookston	3,305.25			2,113.00	
Morris	4,534.63			2,767.60	
Federal Board Agriculture.....				9,251.10	
Extension Division.....	53,636.73			57,744.10	
Breakage	14,661.41			51,811.57	
	<hr/>	497,355.30	13.8	<hr/>	732,566.86 16.9

FROM SALES

Dental Infirmary.....	37,921.30			52,041.67	
Elliot Hospital and Free Dispensary	18,753.20			33,273.91	
Agricultural Products.....	156,729.74			102,952.23	
Lyceum Lectures	51,042.44			45,627.65	
Advance Registry Testing.....	27,993.86			36,870.49	
Campus Rents and Sales.....	11,367.27			5,363.15	
Sundry	50,979.57			66,874.88	
	<hr/>	354,787.38	9.9	<hr/>	343,003.98 7.9

\$3,599,690.10 100.0 \$4,348,935.93 100.0

FROM STATE

Building Fund		165,492.42		554,302.61	
Special Buildings Appropriations...	328,000.00				
Special Land Appropriations.....	49,000.00				
	<hr/>	377,000.00			
Service Enterprises		716,980.01		735,951.99	
Trust Funds		73,922.82		63,961.26	
Mayo Foundation		89,371.48		119,912.22	
Mayo Donation		232,671.01		277,742.21	

Grand Totals \$5,255,127.84 \$6,100,806.22

DISBURSEMENTS SUMMARY

	Salaries and Wages	Supplies and Expense	Plant* Maintenance	Capital Outlay	Totals	Per Cent
Administration	\$ 114,529.82	\$ 18,624.83		\$ 1,140.45	\$ 134,295.10	3.3
General University.....	132,151.90	54,768.33		42,595.92	229,516.15	5.6
Science, Literature, and the Arts	512,873.04	17,033.46		11,624.62	541,531.12	13.3
College of Engineering.....	204,948.03	12,795.85		11,615.42	229,359.30	5.6
Department of Agriculture....	731,163.33	151,428.48		47,108.58	929,700.39	22.8
Medical School.....	197,200.46	18,297.56		6,644.73	222,142.75	5.5
Elliot Hospital.....	76,318.62	74,861.62	\$ 21,818.91	3,916.73	176,915.88	4.4
School of Chemistry.....	88,554.38	19,343.45		4,140.37	112,038.20	2.7
School of Mines.....	63,020.23	10,131.43		4,541.05	77,692.71	1.9
College of Dentistry.....	91,110.41	36,244.16		1,828.66	129,183.23	3.2
Law School.....	43,782.99	1,165.50		7,917.48	52,865.97	1.3
College of Pharmacy.....	23,447.57	2,808.38		429.26	26,685.21	.6
College of Education.....	108,757.79	7,495.70		1,424.21	117,677.70	2.9
Summer Session.....	46,682.39	5,700.77		20.96	52,404.12	1.3
University Extension.....	134,050.38	20,341.39		731.55	155,123.32	3.8
Graduate School.....	9,092.64	11,601.60		1,300.51	21,994.75	.5
School of Business.....	77,485.92	1,394.85		1,846.78	80,727.55	2.0

Physical Plant						
University	93,811.03	4,476.63	259,768.36	6,761.34	364,817.36	9.0
Agriculture	52,858.27	2,942.15	93,867.84	5,020.82	154,689.08	3.8
Crookston	58,880.66	17,025.28	19,138.93	2,013.00	97,057.87	2.4
Morris	49,133.36	14,194.27	17,370.01	4,457.42	85,155.06	2.1
Grand Rapids.....	16,246.64	9,760.07	3,642.55	3,128.65	32,777.91	.8
Duluth	10,815.14	4,537.37	334.93	555.30	16,242.74	.4
Waseca	9,225.86	5,107.84	1,842.54	1,946.16	18,122.40	.4
Zumbra Heights.....	10,944.68	1,631.19	1,490.82	2,198.48	16,265.17	.4
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Totals	\$2,957,085.54	\$ 523,712.16	\$419,274.89	\$ 174,908.45	\$4,074,981.04	100.0
Building Funds.....				836,463.62	836,463.62	
Service Enterprises.....	168,552.71	465,697.06	76,943.70	42,145.52	753,338.99	
Trust Funds.....				72,590.96	72,590.96	
Mayo Donation.....	208,821.34	68,920.87			277,742.21	
Mayo Foundation.....				122,760.65	122,760.65	
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Grand Total.....	\$3,334,459.59	\$1,058,330.09	\$496,218.59	\$1,248,869.20	\$6,137,877.47	

* Includes Gas, Electricity, Water, Ice, Building Repairs, Janitor Supplies, Laundry, Telephones, and Fuel.

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