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THE UNIVERSITY OF MINNESOTA,
MINNEAPOLIS, MINN., Nov. 1, 1888.

To the Hon. D. L. Kiehle, State Superintendent of Public Instruction:

SIR: I have the honor to transmit herewith the fifth biennial report (No. 16 of the series), of the condition and progress of the University for the years 1886-87, and 1887-88.

Very respectfully,

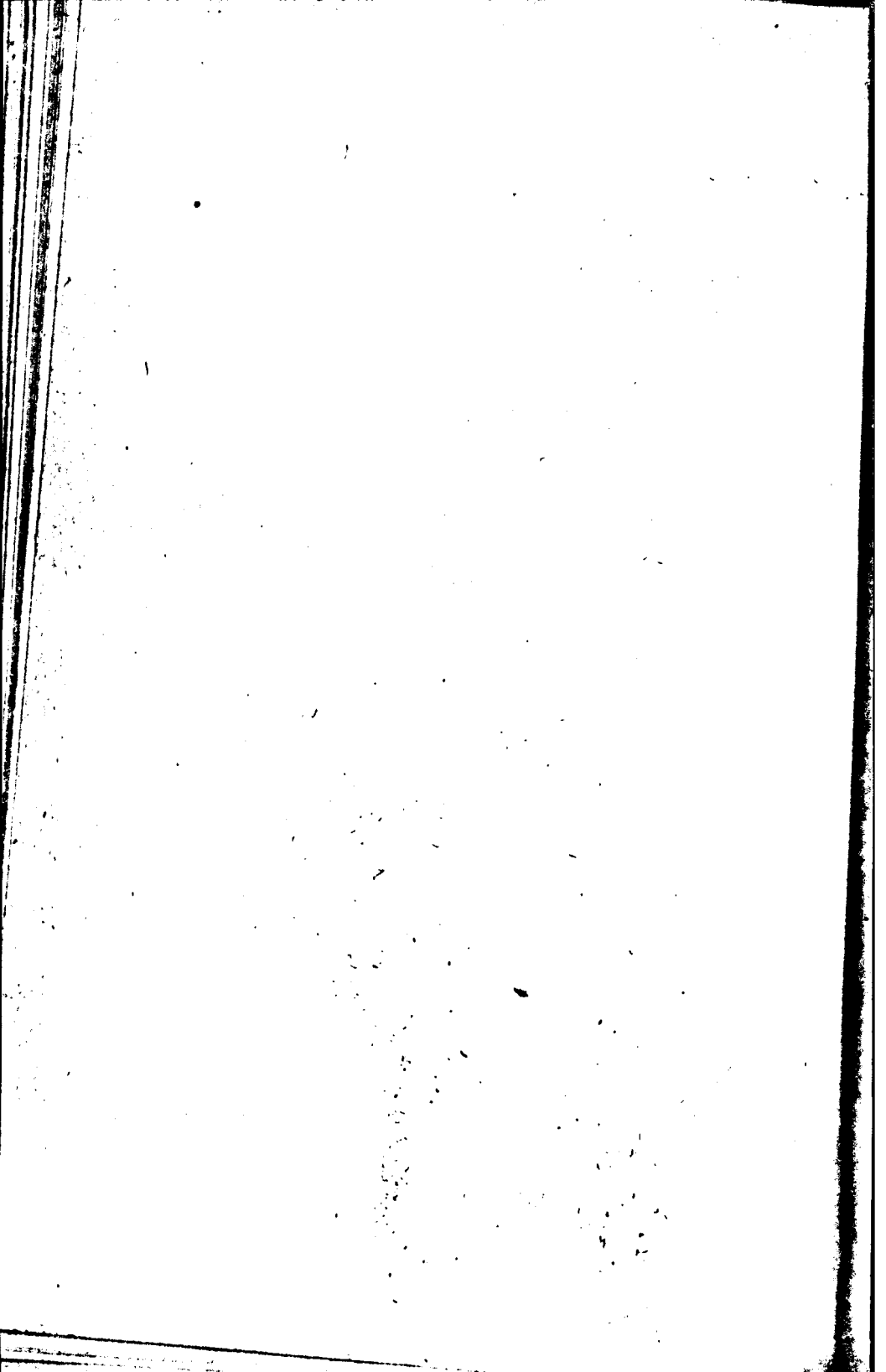
Your obedient servant,

CYRUS NORTHROP,
President.

REPORT
OF THE
UNIVERSITY OF MINNESOTA.

To the State Superintendent of Public Instruction:

The years 1886-87 and 1887-88 have been years of general prosperity in the University of Minnesota, and the latter of these years has been one of notable progress and development. Not only has the work of instruction been carried forward satisfactorily in all the departments which existed at the opening of this period, but the work in some of these departments has been enlarged, new departments have been organized, and the institution in its scope of instruction has been made in reality, what it has heretofore been in theory only, a university. In connection with this statement of facts respecting the establishment of new departments, I can not forbear expressing my hearty thanks to the board of regents for the courage, wisdom, and unselfishness displayed by them in bringing about these results under circumstances which would have deterred a more timid board from taking any action. The gain to the university and to the state in having the actual wants of scholars in the state properly met is incalculable. Some of the results will be apparent in the next report of the president of the university; but it is not too soon even now to say that the evidence is already sufficient to prove the wisdom of the action of the board of regents.



PUBLIC INSTRUCTION.

DEGREES CONFERRED.

Since the last report, degrees have been conferred as follows:

	1887.	1888.
Bachelors of arts.....	7	6
Bachelors of science.....	12	12
Bachelors of literature.....	5	14
Bachelor of civil engineering.....	1	1
Bachelor of mechanical engineering.....	1	2
Bachelor of agriculture.....	1	0
Master of science.....	0	1
Master of arts.....	1	0
Bachelors of medicine.....	2	0
Doctor of philosophy.....	0	1
Civil engineer.....	0	1
	30	38

The names and residences of these graduates are given in Appendix "A."

The following table shows the number and kinds of degrees which have been conferred by this university:

	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	Total.
B. A.....	2	1	3	3	9	5	6	4	10	11	8	9	8	8	7	6	95
B. S.....		1	2	5	8	8	10	9	10	9	7	9	8	6	12	12	106
B. L.....			1		4	1	6	4	7	11	7	8	6	6	5	14	75
B. C. E.....			3	3			2				2	3	2		1	1	17
B. M. E.....						1				1			1		1	2	6
B. Arch.....					1									1			2
B. Agric.....										1			1		1		3
M. A.....								1	1						1		3
M. S.....										1			1			1	3
M. B.....												2	2	3	2		9
Ph. D.....																1	1
C. E.....																1	1
Totals.....	2	2	9	11	17	15	26	18	28	33	25	26	19	22	30	38	321

The whole number of persons graduated is 321, five persons having received degrees both in science and in engineering, one person having received a degree both in arts and in science, and six bachelors having received a master's degree, after passing the required examinations. No honorary degrees are conferred by this university.

The whole number of women who have been graduated is 85, viz.: Bachelors of arts, 13; of science, 21; of literature, 51; of medicine 1; one person having received a degree both in arts and in literature.

ATTENDANCE.

There has been each year an increase in the number of students in attendance as compared with the number in attendance the preceding year. There has also been a great improvement in the promptness with which students have registered at the beginning of the term, and in the regularity of their attendance. In the college of science, literature and arts more than three-fourths of the students registered during the year 1887-88 were registered and in attendance during the first week of the year.

For the enrollment and classification of students during the two years covered by this report, 1886-87 and 1887-88, see appendix "B."

ADMISSIONS.

The record of admissions to the university is as follows:

Record for 1886-87.

	Gentlemen.	Ladies.	Total.
Examined.....	134	65	199
Admitted.....	64	36	100
Rejected.....	70	29	99

Record for 1887-88.

	Gentlemen.	Ladies.	Total.
Examined.....	118	35	151
Admitted.....	76	32	108
Rejected.....	40	3	43

The number of high school board certificates presented at the university during the year 1886-87 was two hundred and ninety-two, and during the year 1887-88, three hundred and fourteen.

The different towns represented by the candidates presenting the certificates in 1886-87, and in 1887-88, the number of certificates from each town, the subjects, and the number of candidates presenting certificates, are shown in appendix "C."

COLLEGE OF SCIENCE, LITERATURE AND THE ARTS.

The work in this college has been carried forward with vigor and with increasing efficiency. The number of students has largely increased, especially in the four college classes in the regular courses leading to degrees. In 1888 Prof. John Dewey, Ph.D., an assistant professor in the University of Michigan, was elected professor of mental and moral philosophy and logic, to fill the chair formerly held by Prof. Ormond, and more recently by Mr. Thomas Peebles as instructor. Prof. Dewey was elected to enter upon his duties at the beginning of the year 1888-89. Mr. Frederick S. Jones, instructor of physics, was absent on leave during the year 1887-88, engaged in study in the University of Berlin, Germany. He will also be absent during the year 1888-89, continuing his studies at the same university. During his absence his place has been and will be filled by Mr. John Whitmore, who has proved himself a very capable and successful instructor. Mr. Conway McMillan was employed during the third term of each of the years embraced in this report as an additional instructor in botany, and has further been engaged to give instruction the coming year in both the first and third terms. Henry F. Nachtrieb, assistant professor of biology, was elected in the spring of 1888 state zoologist, his relations to the university as an instructor not being changed thereby. Mr. Charles F. Sidener, instructor in chemistry, was in 1888 made assistant professor of chemistry.

I note with pleasure in connection with the work of this college the increased number of students who have taken the full preparatory course in Latin and who continue to pursue the subject in the university to the end of the course. The importance of training in Latin is evidently appreciated in all our preparatory schools much better than formerly, and the readiness with which the schools fall into line in the study of the classics is one of the hopeful signs of culture that are so pleasant and numerous in these years of manifest progress.

THE PREPARATORY CLASS.

In my last report I congratulated the board of regents on the prospect of soon having the university relieved of the preparatory work which properly belongs to the schools. I believe the

time has come when the board may safely decide when the preparatory class shall be discontinued; and I do not think that any wrong would be done if the class were to be abolished at the end of the present year. Its removal will be helpful to the preparatory schools, by making a higher standard of work necessary in order to prepare students for entrance to the university, and will be helpful to the university not only by relieving it from lower grade work, but by promoting the unity of classes and the uniformity of progress among members of the same class, all of them entering the regular college work at the same time, and none of them having an opportunity as at present to fall by the way, inside of the walls of the university but yet outside of the college classes. At the same time I do not urge any immediate or hasty action. Many interests are involved in the question. The preparatory class grows smaller each year and the number of students who enter the freshman class without passing through the preparatory department grows larger each year. From this the inference is inevitable that the necessity for maintaining the preparatory department is constantly diminishing; but whether the time has actually arrived for discontinuing that department is a question to which I ask the regents to give, at an early day, their careful attention.

THE COLLEGE OF MECHANIC ARTS.

The college of mechanic arts has prospered during the two years covered by this report, having had a larger number of students than heretofore, and having enlarged its work in several directions. A course in electrical engineering leading to the degree of bachelor of electrical engineering was added at the beginning of the year 1887-88; the artisans' training school was reorganized and named "the school of practical mechanics and design;" a new course in the care and management of engines and boilers was added; also a new course in designing and wood carving. Mr. William R. Hoag, an instructor in civil engineering, was in 1888 elected assistant professor in civil engineering. Mr. Charles G. Trefethan was employed as an additional instructor in metal working during the year 1887-88. Mr. Henry T. Ardley was engaged at the beginning of 1888 to take charge of the carving and free hand drawing. Mr. Ardley has proved a most valuable assistant, and has succeeded in awakening a good degree of interest in the work under his charge, and it is very

evident that a much larger number of ladies and gentlemen will apply for instruction in his special work the coming year. The need of better instruction in free hand drawing had long been felt, and Mr. Ardley, by supplying this need adds very largely to the value of his services. With the work done in the college of mechanic arts, in the shops, and in the new school of agriculture at the farm in which thorough instruction in carpentry and wood work generally is to be given, the regents may rest assured that one object aimed at by congress in its appropriation of public lands for education in agriculture and the mechanic arts not only can be attained, but has been attained, the number of students already pursuing the work in these various places being sufficiently large to insure a complete success, and to indicate a very general popular interest in the various courses of instruction offered. Not the least gratifying feature in the existence of the school of practical mechanics and design is, that not unfrequently students who originally intended to pursue shop work only, are ultimately led to pursue a thorough course in mathematics, and to become engineers.

THE COLLEGE OF AGRICULTURE.

The number of students in the college of agriculture has continued to be small, although there have been more in attendance during the last two years than at any previous time. In the regular course the number of students who were candidates for a degree has varied from three to six; and in the school of practical agriculture the number has varied from ten to fifteen. It would seem that every impediment to entrance into the college of agriculture that could be removed had been removed by the action of the regents in establishing the terms of admission by which only the branches of study ordinarily pursued in the common school are required for admission to the sub-freshman class. But the change in the terms of admission has produced little if any effect in increasing the number of students, and the only legitimate conclusion that can be drawn from existing facts is that while a large number of farmers' sons and daughters are eager to secure a collegiate education and are actually securing it at the university, the need of a full four years course of study in agriculture has not yet been very generally felt, and therefore these sons and daughters of the farm have turned their attention to the scientific course, as furnishing

them on the one hand much of the special knowledge they would gain from the agricultural course, and fitting them on the other hand for professional or educational work for which the agricultural course would not so well prepare them. But be the cause what it may, the fact is undoubted that comparatively few students can be induced at present to spend four years on the agricultural course with a view to life on a farm at the conclusion of their studies.

THE SCHOOL OF AGRICULTURE.

It is, however, none the less important that young men should be trained to the work of the farm, and it is evident that some school in which they can be thus trained, and can acquire at the same time a good general education while keeping in mind their purpose to become farmers, is very desirable; and such a school the board of regents has accordingly established at the university farm. A commodious building has been erected for the comfort of the students, and for the school work. The course of study extends through only two years, each year embracing two terms of twelve weeks each. The course of study for the first year embraces English, arithmetic, algebra, accounts, physical geography, botany, physics, wood work and mechanical drawing, lectures in farm management, farm architecture, and horticulture. In the second year the course of study embraces algebra, geometry, civil government, political economy, agricultural chemistry, animal physiology, lectures on grains, soils and fertilizers, stock and dairying, horticulture and veterinary. The admission to this school is easy, all applicants who have completed a common school course in English, arithmetic, United States history and geography, being accepted. The school will open Oct. 18, 1888, and close April 17, 1889. Such students as desire to remain at the farm during the summer and engage in practical agriculture under the direction of the professor of agriculture, will be permitted to do so, and will receive reasonable remuneration for their work.

This school of agriculture presents many attractions to farmers' sons. First of all, it offers a good general education, of a much higher character than that which can be obtained at the ordinary school. Second, it costs very little, the tuition being free and the expense being limited to the actual cost of maintaining the table and caring for the house, the amount not ex-

ceeding three dollars a week. Third, opportunity is afforded to earn at least part of a support by labor at the farm. Fourth, in addition to the ordinary advantages of a good school with competent instructors, the students in this agricultural school will receive more or less instruction by lectures from the officers of the experiment station, and will have the opportunity to become familiar with the work of the experiment station and of the farm. Finally, the location of the school is admirable in respect to beauty of scenery, adaptation to study, security of health, and freedom from special temptations to evil. The principal of the school, whom the regents have elected, is W. W. Pendergast, formerly assistant superintendent of public instruction, a gentleman of large experience both in teaching and in agriculture. He will be very efficiently assisted by Henry W. Brewster, B.A., a graduate of the University of Minnesota and an experienced teacher. The present indications are that the advantages which this school offers to the boys of the state will be appreciated by them and by their parents. Already interested inquiries have been received from nearly one hundred students, of whom, it is believed, at least twenty-five have decided to enter the school in October. I congratulate the regents on the wise liberality which they have displayed in establishing and equipping this agricultural school, and I congratulate the farmers of Minnesota on having such a school to which they may send their sons, and be as certain as human infirmity will permit that they will get from it great good and only good.

THE AGRICULTURAL EXPERIMENT STATION.

Previous to the last session of Congress no direct appropriation had been made by the general government for the encouragement of experiment work in agriculture although generous appropriations had been made for the support of agricultural colleges. The passage of the Hatch bill appropriating \$15,000 annually to enable the agricultural college of each state to carry on experiments in agriculture, opened a new and more hopeful era for progress in scientific investigation of subjects having an important relation to the farming interests of the country. Immediately after the appropriation was made by Congress the regents of the University of Minnesota turned their attention to the thorough reorganization of the agricultural experiment station. Previous to that time the whole care

of the experiment station, of the university farm, and of the agricultural department of the university had devolved upon Prof. E. D. Porter, with no professional assistants, and aided only by unskilled farm labor. It was impossible that much progress in experiment work should be made so long as the station was in this condition, and it was wholly unreasonable to expect much progress. Excellent and important work was, however, done by Prof. Porter, in the way of preparation, so that no better place for a thoroughly organized corps of experimentation in which to do good work could be found in the country than the university farm as it was when it became possible to organize such a corps. In the organization of the agricultural experiment station in 1888 the board was exceedingly fortunate in their election of officers and in securing the services of all the gentlemen who were elected. Prof. E. D. Porter, being the professor of agriculture in the university, was made director of the station as was required by the law of the State of Minnesota. Otto Luggger, Ph. D. was called from the entomological bureau of the department of agriculture in Washington, to be entomologist and botanist in our experiment station. Samuel B. Green, B. S. of the Amherst Agricultural College was elected horticulturist. Daniel N. Harper, B. S. of Philadelphia, who had been strongly recommended to the board by that veteran in agricultural science, Prof. S. W. Johnson of the Sheffield scientific school, was elected chemist. Willet M. Hays, B. S. A., a graduate of Ames Agricultural College and a gentleman of practical experience in agriculture, was elected assistant in agriculture. Michael J. Treacy, M. R. C. V. S., a graduate of an English veterinary college, was elected veterinarian. Daniel W. Sprague was elected accountant and recorder. Provision was also made for additional labor clerical and manual as might be required — the organization of the corps being finally completed in the summer of 1888. Already much good work has been done at the station and elsewhere in the state, and three bulletins have been issued containing valuable information in reference to silos and ensilage, tests of varieties of corn for feeding values, examination of beets and other roots for sugar and feeding value; also timely and interesting papers respecting horticulture and entomology. In addition to the information disseminated in these bulletins, Dr. Luggger has rendered important service to the state by his personal investigations of the locusts and the chinch bugs, and by his recommendations of methods of obtaining relief from the

depredations of insects. The promise of valuable results to the state from the united efforts and labors of the corps of experimentation is exceedingly good and must be very gratifying to every one who desires to see the agricultural interests of the state promoted.

In order that the work of the experiment station might be done in the best manner, the board of regents has caused to be erected on the farm a new building to be devoted exclusively to the work of the experiment station. The building contains a chemical laboratory, and such other rooms as were deemed necessary for the work of the different members of the corps of experimentation as well as for the meetings of the corps, for the library and the museum. This building is nearly finished. New and greatly improved hot houses have also been erected for the work in horticulture. Further, in order that every possible facility might be furnished for experiments in feeding cattle, important changes and improvements have been made in a part of the large barn specially devoted to experiment work, scales have been provided for most expeditiously and conveniently weighing materials and animals, and everything which could be done to secure accurate and permanent records of results reached by experiments has been done. The board of regents, having thus thoroughly reorganized the experiment station, having elected a corps of experimentation composed of gentlemen of whose ability and fitness there can be no question, and having provided ample accommodations for the work of the station in buildings, in gardens, in the fields and in apparatus, may well be justified in feeling an honorable pride in their work, and in cherishing the confident expectation that the results will justify their expenditures of money, and prove the wisdom of their plans.

The following resolutions passed by the board of regents explain the plan upon which the agricultural experiment station is organized. It is believed that the plan of organization is such as to secure unity of action among the members of the corps of experimentation and at the same time preserve to each officer great freedom of action in promoting the interests of the special science of which he is in charge.

To increase the efficiency of the experiment station it is hereby resolved to define and extend its organization as follows:

1. The officers shall include the following:
 - (a) Farm superintendent.

- (b) Director of station.
- (c) Heads of divisions.

2. The work of the station shall be conducted in the following divisions, to which additions may be made as necessary, and to which responsible heads shall be assigned :

- (a) General field and grain farming.
- (b) Stock and dairying.
- (c) Horticulture.
- (d) Entomology and botany.
- (e) Veterinary.
- (f) Chemistry.

3. Duties. The heads of divisions with the director shall constitute and be known as the "corps of experimentation" to consider and devise in all matters necessary to the ends for which this station is organized. It shall issue quarterly bulletins of work accomplished by divisions and make annual reports to the board of regents.

The director shall be the chairman and corresponding secretary of the corps, and shall attend to issuing all bulletins and reports required from the corps.

The superintendent of the farm shall, under such instructions as may be given him by the board of regents, conduct the farm in the interests of the experiment station and the school of agriculture, and cultivate so much of the farm as is not required for experimentation with a view to economy and profit.

He shall keep an accurate inventory of property, record of expenditures and receipts, the cost and profit of each farm crop, etc., and make annual report to the board on or before the first of December of each year.

The heads of divisions shall each keep a journal of experiments proposed, in progress and completed, which record shall be open to the inspection of the board or its authorized committees.

4. Subordinate assistants.

(a) Farm accountant, whose duty shall be to keep all financial accounts of the farm, experiment station and the school, and to attend to such financial interests as are required by the director, heads of divisions, and the principal of the school, which accountant shall be under the special direction of the board of regents.

- (b) Farm foreman.
- (c) Assistants and help in divisions.

The supervision of the affairs of the station is committed to the executive committee under such instructions as the board may from time to time impose.

BUILDINGS.

The most pressing need of the university in respect to buildings in which to prosecute its work will be met whenever the new science hall and museum shall be finished. This building was begun in 1887. It is built of stone and has a front of two hundred and forty-five feet. It will furnish lecture rooms and laboratories for the work in geology, mineralogy, botany, zoology and physiology. It will also furnish accommodations for the officers of the geological survey; and one wing containing 4,000 square feet on each floor will be devoted to the museum. Provision is also made in this building for work in metallurgy and mining whenever the regents shall see fit to establish a school of mines. This building is now enclosed, but will hardly be ready for use the present year. Meanwhile the pressure for rooms large enough to accommodate our increasing classes is great, and shows conclusively that the erection of science hall was not begun a moment too soon. But even when this building shall have been finished there will remain the need of a larger chemical and physical laboratory, of a library building, of a medical college building, of a law college building, and of an observatory. The future prosperity of the university will be very much affected by the promptness or delay attending the erection of these buildings. If provision is made so that they can be erected as fast as they are really needed, the progress of the university is assured. If, however, a wavering policy should be adopted by the state, and the promise of one year be unfulfilled the next year, the progress of the university will thereby be greatly hindered. I do not however anticipate any trouble in this respect. The university is doing good work and is an honor to the state. The people of the state have shown their good will to the university in many ways, and I do not doubt that they will, through their representatives, see that adequate provision is made for prosecuting successfully the work of all departments of the university.

THE DEPARTMENT OF LAW.

In the original charter of the university it was expressly provided that the colleges of law and of medicine should be established. The necessity for these departments has not, however, appeared to be imperative until the present year. During the last year many inquiries from students desiring to study law were addressed to the president of the university and it was apparent from the correspondence with these students that a law department in the university would meet a real want of the state. Accordingly in the spring of 1888 the regents voted to establish the department of law. Hon. William S. Pattee, of Northfield, a gentleman well known throughout the state, and respected both as an able lawyer and a man of the highest character, was at an early day elected professor of law and dean of the law faculty. Subsequently a number of the ablest lawyers in the state were invited to give courses of lectures in the law school, and all of them with a generous regard for the interests of legal education, consented to become lecturers on special branches of the law assigned to them, practically engaging to give their services to the university and thus to the state. The interest awakened in this department has been great and it will open its courses of study at the beginning of the year 1888-89 under the most encouraging circumstances. Temporary accommodations for the school have been provided in the main building of the university; but larger accommodations will be needed next year, when the number of students in attendance will be larger than in the law departments of some of the older eastern universities. The faculty of the law department as fully organized, is as follows:

Cyrus Northrop, LL.D., president.

Hon. Wm. S. Pattee, M. A., dean and professor of the law of contracts.

Hon. S. J. R. McMillan, lecturer on constitutional law.

Hon. Gordon E. Cole, lecturer on corporations.

Hon. Charles D. Kerr, lecturer on the law of partnership.

G. C. Ripley, B.A., lecturer on equity, jurisprudence and procedure.

Charles A. Willard, lecturer on the law of bailments.

Judge James O. Pierce, lecturer on the law of domestic relations.

Hon. Charles E. Flandreau, lecturer on the law of torts.
 Hon. George B. Young, lecturer on the conflict of laws.
 John B. Atwater, B. A., lecturer on the law of real property.
 Hon. C. D. O'Brien, lecturer on criminal law and procedure.
 George N. Baxter, lecturer on common law and code pleading.
 Hon. W. D. Cornish, lecturer on life and fire insurance.
 Judge John M. Shaw, lecturer on evidence.
 Judge P. M. Babcock, lecturer on wills and administration.
 Charles H. Boardman, M. D., professor of medical jurisprudence.

Charles W. Bunn, lecturer on suretyship and mortgages, practice in United States courts.

Sumner Ladd, lecturer on the law of taxation.

The regents have adopted the principle of charging fees for instruction in the professional schools. This is as it should be. I remarked in my first biennial report: "There is a limit beyond which free education should not go. In my judgment the line should be drawn at professional education." The regents have so decided. They do not, however, charge such fees as will pay all the expenses of the professional schools, much less erect the necessary buildings and provide the required apparatus. Instruction in law and medicine is necessary in the state; and the state can well afford to erect at once the modest and comparatively inexpensive building which will be required to accommodate the law school. I have the greatest confidence in the success of the law department, and I believe that its establishment will be fully justified not only by the number and character of its students from the first, but also by the general utility to the state of the work that will be done in elevating the character and standing of the coming members of the bar.

THE DEPARTMENT OF MEDICINE AND SURGERY.

The old college of medicine, which did not exist as a teaching school, and was therefore but a *simulacrum* of a college, was abolished by the regents in the spring of 1888, and a new department of medicine and surgery was organized. This department embraces the college of medicine and surgery, the college of homeopathic medicine and surgery, and the college of dentistry. Three existing medical colleges, in St. Paul and Minneapolis, voluntarily surrendered their charters in view of the organiza-

tion of the medical department of the university, and from the faculties of these colleges the faculty of the medical department of the university was largely, though not exclusively, selected. The course of instruction covers a period of three years, the instruction each year extending through six months. The department will open Oct. 1, 1888. The requisites for admission are much higher than have heretofore been required for admission to medical colleges in this state, and the result will undoubtedly be that a much smaller number of students will be in attendance the first few years than would be if the requirements were less and the standard of scholarship were lower. But what is lost in the number of students will, it is hoped, be made up in the greater excellence and attainments of those who do attend. But whether the number of students shall be small or great, the department will maintain the standard which it has set up, and will thus not only do something to elevate medical education here at home, but will also strengthen the hands of other institutions that are seeking to improve medical education in other parts of our country.

The faculties of the various medical colleges as elected by the board of regents are as follows:

The College of Medicine and Surgery.

Cyrus Northrop, LL.D., president.

A. F. Ritchie, M. D., professor of anatomy.

Richard O. Beard, M. D., professor of physiology.

C. J. Bell, M. A., professor of chemistry.

H. M. Bracken, M. D., L. R. C. S. E., professor of materia medica and therapeutics.

Albert E. Senkler, M. D., professor of theory and practice of medicine.

Charles H. Hunter, A. M., M. D., professor of clinical medicine and pathology.

Everton J. Abbott, A. B., M. D., professor of clinical medicine.

Charles A. Wheaton, M. D., professor of principles and practice of surgery.

Frederick A. Dunsmoor, M. D., professor of clinical and operative surgery.

Perry H. Millard, M. D., dean and professor of clinical surgery.

Parks Ritchie, M. D., professor of obstetrics.

Alex. J. Stone, LL.D., M. D., professor of diseases of women.
Amos W. Abbott, M. D., clinical professor of diseases of women.

John F. Fulton, Ph. D., M. D., professor of ophthalmology and otology.

Frank Allport, M. D., clinical professor of ophthalmology and otology.

C. Eugene Riggs, A. M., M. D., professor of diseases of the nervous system.

Charles H. Boardman, M. D., professor of medical jurisprudence.

Arthur B. Ancker, M. D., professor of hygiene.

James H. Dunn, M. D., professor of diseases of the genitourinary organs.

Chas. L. Wells, A. M., M. D., professor of diseases of children.

James E. Moore, M. D., professor of orthopedic surgery.

M. P. Vanderhorek, M. D., professor of diseases of the skin.

W. S. Laton, M. D., professor of diseases of the throat and nose.

J. Clark Stewart, B. S., M. D., professor of histology and bacteriology.

J. W. Bell, M. D., professor of physical diagnosis and diseases of the chest.

E. C. Spencer, A. B., M. D., professor of surgical anatomy.

A. B. Cates, A. M., M. D., adjunct professor of obstetrics.

W. A. Jones, M. D., adjunct professor of diseases of the nervous system.

Burnside Foster, M. D., demonstrator of anatomy.

College of Homeopathic Medicine and Surgery.

Cyrus Northrop, LL.D., president.

William E. Leonard, A. B., M. D., professor of materia medica and therapeutics.

Henry Hutchinson, M. D., professor of theory and practice of medicine.

George E. Ricker, A. B., M. D., professor of clinical medicine.

Robert D. Matchan, M. D., professor of the principles and practice of surgery.

Warren S. Briggs, B. S., M. D., professor of clinical surgery.

Henry C. Leonard, B. S., M. D., professor of obstetrics.

Albert E. Higbee, M. D., professor of gynecology.

John F. Beaumont, M. D., professor of ophthalmology.

Henry W. Brazie, M. D., professor of paedology.

Salathiel M. Spaulding, M. D., professor of mental and nervous diseases.

Eugene L. Mann, A. B., M. D., professor of physical diagnosis and laryngology.

B. Harvey Ogden, A. M., M. D., professor of genito-urinary diseases.

Henry C. Aldrich, M. D., D. D. S., professor of dermatology.

D. A. Strickler, M. D., professor of otology.

College of Dentistry.

Cyrus Northrop, LL.D., president.

Charles M. Bailey, D. M. D., professor of prosthetic dentistry and materia medica.

Thomas E. Weeks, D. D. S., professor of operative and clinical dentistry.

Edward H. Angle, D. D. S., professor of histology and orthodontia.

L. D. Leonard, professor of pathology and therapeutics.

A. F. Ritchie, M. D., professor of anatomy.

Richard O. Beard, M. D., professor of physiology.

C. J. Bell, M. A., professor of chemistry.

The university has acquired by lease the right to use the medical college building in St. Paul, and the hospital college building in Minneapolis, for purposes of medical instruction for a period of five years. I do not think that the needs of the department can possibly be met by these buildings for five years to come. Provision should therefore be made at as early a day as possible for the erection of a building on the university campus, to accommodate all the colleges of the medical department and furnish ample lecture rooms and laboratories. The union of the different parts of the university should be not nominal but vital. And no more sure method of securing such vital union of the medical and literary and scientific departments can be found than to so place the departments as to enable the students of all to reap the benefit of the thorough scientific work done in the non-professional schools, a knowledge of which will be of the greatest value to the student of medicine.

THE PROFESSORSHIP OF MILITARY SCIENCE AND TACTICS.

The most strenuous efforts have been made for a number of years by the board of regents to secure from the war department the detail of an officer of the regular army to fill the chair of military science and tactics in the university. It is unnecessary to enumerate all the difficulties that have been met during these years of patient waiting for what we had so long and with apparent justice asked for. The end, however, has at last come, and Lieut. Edward F. Glenn, of the twenty-fifth infantry, has been detailed by the president as professor of military science and tactics in the university of Minnesota. He will report for duty at the university at once, and will engage actively in the instruction of the institution as well as in directing the exercises of the students in military drill. What regulations shall be established respecting the instruction in military science—whether it shall be a required or an elective study, whether a uniform shall be required for those who form the military company, what amount of time shall be devoted to drill—these and many kindred questions must ultimately be settled by the regents. I am not disposed to offer any suggestions in reference to them until I have conferred with Lieut. Glenn and have ascertained his views and wishes.

LADIES' HALL.

I have no doubt that the erection of a ladies' hall near the university, for the accommodation of ladies who desire to attend the university, would be of very great benefit, and would tend to increase the number of female students. Parents who reside outside of Minneapolis, and therefore can not personally care for their daughters in attendance at the university, are naturally anxious that their daughters should be under the care of some proper person, who will watch over their welfare. A ladies' hall under the care of an efficient lady superintendent, would meet the requirements of the case; and if the number of female students in the university is to remain relatively as large as at present, some such provision must be made. I commend the subject to the attention of the board.

THE LIBRARY.

I submit herewith the biennial report of the librarian of the university. While I am glad to note the increase in the number of volumes in the library and am especially pleased that very valuable additions have been made the past year, I yet feel that in this age of new books and of progress in almost every direction of study, the library of the university does not grow as rapidly as the best interests of the university require. I respectfully call the attention of the regents to some special needs pointed out by the librarian in his last report, and referred to in the report herewith submitted.

I close this, my second biennial report, with a feeling of deep gratitude for the blessings of the past two years—peace, progress, encouragement; and I look forward to the results of the coming year with hope and confidence.

CYRUS NORTHROP,

President.

APPENDIX "A."

At the fifteenth annual commencement, held June 12, 1887, the following persons received degrees:

COLLEGE OF SCIENCE, LITERATURE AND ARTS.

Bachelors of Arts.

Henry Webb Brewster.....	Minneapolis
Joshua Ethan Gilman.....	Wassioja
Alfred Burt Gould.....	Wassioja
George Harry Hammond.....	Lake City
Millard Everett Hinshaw.....	Minneapolis
Ralph Murdoch McKenzie.....	Anoka
Joseph Henry Rossetot.....	Faribault

Bachelors of Science.

Franklin Hurley Bassett.....	Glyndon
Norton Murdock Cross.....	Minneapolis
Thomas Henry Crosswell.....	St. Paul
Adelbert Orsman Dinsmoor.....	Austin
Christopher Graham.....	Rochester
John Blackstock Hawley.....	Red Wing

Jesse Doddridge Hinshaw.....	Minneapolis
Lowell Andrew Lamoreaux.....	Minneapolis
Milton Sprague Lamoreaux.....	Minneapolis
Edwin Arthur McKinney.....	Crow River
William Patton Milliken.....	Lake City
Ingeval M. Olson.....	St. Peter

Bachelors of Literature.

George Edwin Burnell.....	Minneapolis
Elwood Allen Emery.....	Minneapolis
Everson Ryder McKinney.....	Crow River
Mary Isadore Smith.....	Minneapolis
Edward Winterer.....	Le Sueur

Master of Arts.

George Briggs Aiton, A. B., '81.....	Minneapolis
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THE COLLEGE OF MECHANIC ARTS.

Bachelor of Civil Engineering.

Fremont Crane, V. S., '86.....	Mapleton
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Bachelor of Mechanical Engineering.

George Cutler Andrews.....	Minneapolis
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COLLEGE OF AGRICULTURE.

Bachelor of Agriculture.

Jeremiah Ignatius Donohue, B. S., '84.....	_____
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COLLEGE OF MEDICINE.

Bachelors of Medicine.

Catherine E. Burns.....	Hopkins
E. F. Conynghame.....	Minneapolis

At the sixteenth annual commencement, held June 7, 1888, the following persons received degrees:

COLLEGE OF SCIENCE, LITERATURE AND ARTS.

Bachelors of Arts.

Percival Ramsey Benson.....	Anoka
Albert Ernest Fillmore.....	Minneapolis
Albert Graber.....	Minneapolis
Francis Newton Stacey.....	Monticello
Helmus Wells Thompson.....	Wells
William Dodsworth Willard.....	Mankato

Bachelors of Science.

Bruno Bierbauer.....	Mankato
Edna Cook.....	Minneapolis
Albert Ames Finch.....	Hastings
*Ulysses Sherman Grant.....	Minneapolis
Walter Benjamin Holmes.....	Fairbault
Edwin Bird Johnson.....	Marshall
Arthur Teall Mann.....	Minneapolis
Sumner Warren Matteson, Jr.....	Decorah, Iowa
Melville Emerson Reed.....	Hastings
Warren Cogswell Kowell.....	Winona
Dow Samuel Smith.....	Minneapolis
John Lucius Torrens.....	Oakland

Bachelors of Literature.

Alice Anna Adams.....	Minneapolis
Lucy Lloyd Baker.....	Minneapolis
Mary Lizzie Blanchard.....	Zumbrota
Ina Firkins.....	Minneapolis
Severt Germe.....	Medo
Florence Ellen Gideon.....	Excelsior
Fred. Ezra Hobbs.....	Winona
Susan Hawley Olmstead.....	New Haven, Conn.
Sadie Belle Pillsbury.....	Minneapolis
Olivia Canby Porter.....	Minneapolis
Anna Shillock.....	Minneapolis
Johannes Jens Skördalsvold.....	Minneapolis
Charles Thompson.....	No. Yarmouth, Me.
Ima Caroline Winchell.....	Minneapolis

Master of Science.

John Henry Barr, B. M. E., 1883.....	Minneapolis
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Doctor of Philosophy.

Charles Barke Elliott, LL.B., 1881 (Iowa State University).....	Minneapolis
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COLLEGE OF MECHANIC ARTS.

Bachelors of Civil Engineering.

Christian Anderson.....	Spring Valley
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Bachelors of Mechanical Engineering.

Eric Halderson Loe.....	Minneapolis
John Morris.....	Bristol

Civil Engineer.

William Ricketson Hong, B. C. E., 1884.....	Minneapolis
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*Fellow of the University of Minnesota, for the year 1888-'89, by election of the University Fellowship Association.

APPENDIX "B."

The following tables exhibit the enrollment and classification of the students:

SUMMARY — 1886-87.

DEPARTMENT.	Class.	Gentlemen	Ladies.	Totals.
Graduate Students.....		16	6	22
College of Science, Literature and Arts.....	Senior.....	23	1	24
	Junior.....	21	12	33
College of Mechanic Arts.....	Senior.....	2		2
	Junior.....	4		4
College of Science, Literature and Arts, and Mechanic Arts.....	Sophomore.....	24	9	33
	Freshman.....	77	21	98
	Sub-Freshman.....	69	29	98
	Special.....	24	19	43
School of Practical Mechanics and Design.....	Artisans' A.....	6		6
	Artisans' B.....	15		15
	Artisans' C.....	13		13
	Artisans' D.....	7		7
School of Practical Agriculture.....		14		14
Totals.....		315	97	412

SUMMARY — 1887-88.

DEPARTMENT.	Class.	Gentlemen.	Ladies.	Totals.
Graduate Students.....		17	4	21
College of Science, Literature and Arts.....	Senior.....	22	11	33
	Junior.....	20	12	32
College of Mechanic Arts.....	Senior.....	3		3
	Junior.....	1		1
College of Science, Literature and Arts, and Mechanic Arts.....	Sophomore.....	59	12	71
	Freshman.....	78	28	106
	Sub-Freshman.....	43	9	52
	Special.....	24	33	57
School of Practical Mechanics and Design.....	Division A.....	15		15
	Division B.....	4		4
	Division C.....	36		36
	Division D.....	28	30	58
School of Practical Agriculture.....		10		10
Twice counted.....		360	139	499
		3	5	8
Totals.....		367	134	491

APPENDIX "C."

The following statement shows the towns from which came candidates for admission to the university, who presented certificates of the state high school board—also the number of certificates presented from each town represented—and the subjects upon which the certificates were given.

In the year 1886-87: Alexandria, 2; Austin, 18; Browns Valley, 5; Dodge Centre, 3; Elk River, 12; Farmington, 4; Glencoe, 8; Hastings, 19; Henderson, 16; Howard, 9; Hutchinson, 34; Le Sueur, 10; Mankato, 10; Minneapolis Academy, 11; Ortonville, 9; Rochester, 3; Luverne, 21; Stillwater, 17; St. Peter, 33; Spring Valley, 33; Sauk Centre, 18; Willmar, 4.

In the year 1887-88: Albert Lea, 10; Austin, 11; Alexandria, 25; Cannon Falls, 10; Elk River, 20; Fergus Falls, 10; Glencoe, 10; Faribault, 16; Hutchinson, 16; Monticello, 23; Montevideo, 19; Mantorville, 2; New Ulm, 13; Redwood, 13; Rushford, 8; Rochester, 10; Stillwater, 9; Spring Valley, 36; Kasson, 5; Litchfield, 16; Wadena, 8; Sleepy Eye, 5; Owatonna, 15; Minneapolis Academy, 4.

The certificates presented were as follows :

In 1886-87: Arithmetic, 29; elementary algebra, 21; plane geometry, 22; geography, 2; United States history, 20; general history, 18; physiology, 23; English grammar, 20; Latin grammar, 18; Cæsar, 20; Cicero, 11; Greek grammar, 2; physical geography, 19; natural philosophy, 25; higher algebra, 9; solid geometry, 9; Anabasis, 3; Virgil, 10; chemistry, 11; botany, 7.

In the year 1887-88: English grammar, 22; English composition, 10; arithmetic, 30; elementary algebra, 31; plane geometry, 25; history of Greece and Rome, 16; United States history, 32; physiology, 29; Latin grammar, 15; Cæsar, 11; Cicero, 7; higher algebra, 8; solid geometry, 10; Virgil, 3; chemistry, 11; botany, 6; physical geography, 23; natural philosophy, 15; history of England, 8; Greek grammar, 1; Anabasis, 1.