

CATALOGUE

OF THE

University of the State of Missouri

FIFTIETH REPORT

OF THE

CURATORS

TO THE GOVERNOR OF THE STATE.

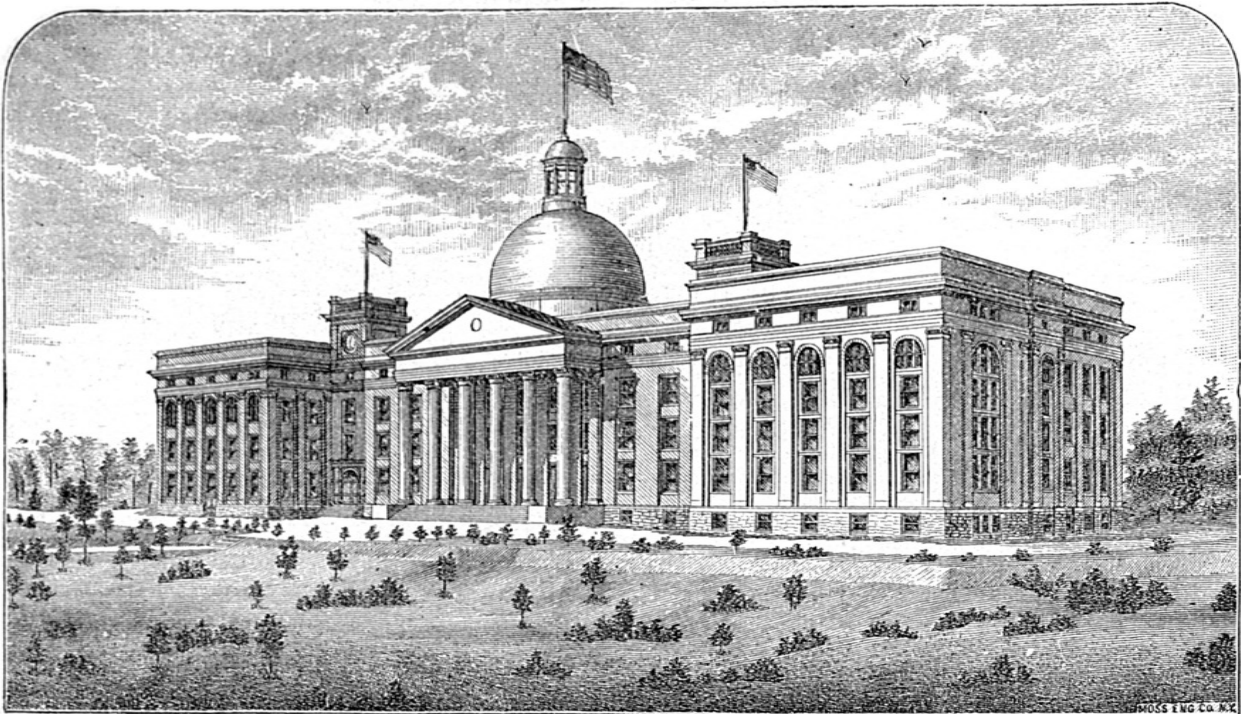
1891-1892.

CATALOGUE
OF THE
UNIVERSITY OF THE STATE OF MISSOURI

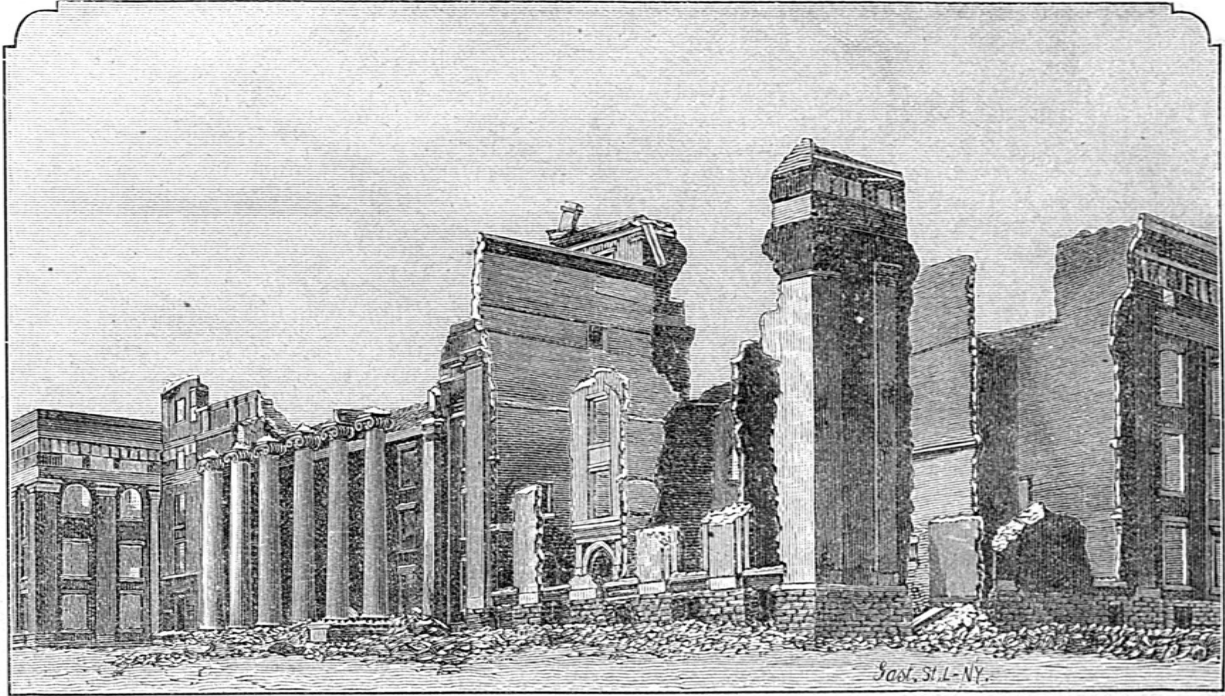
FIFTIETH REPORT OF THE CURATORS

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1891-1892

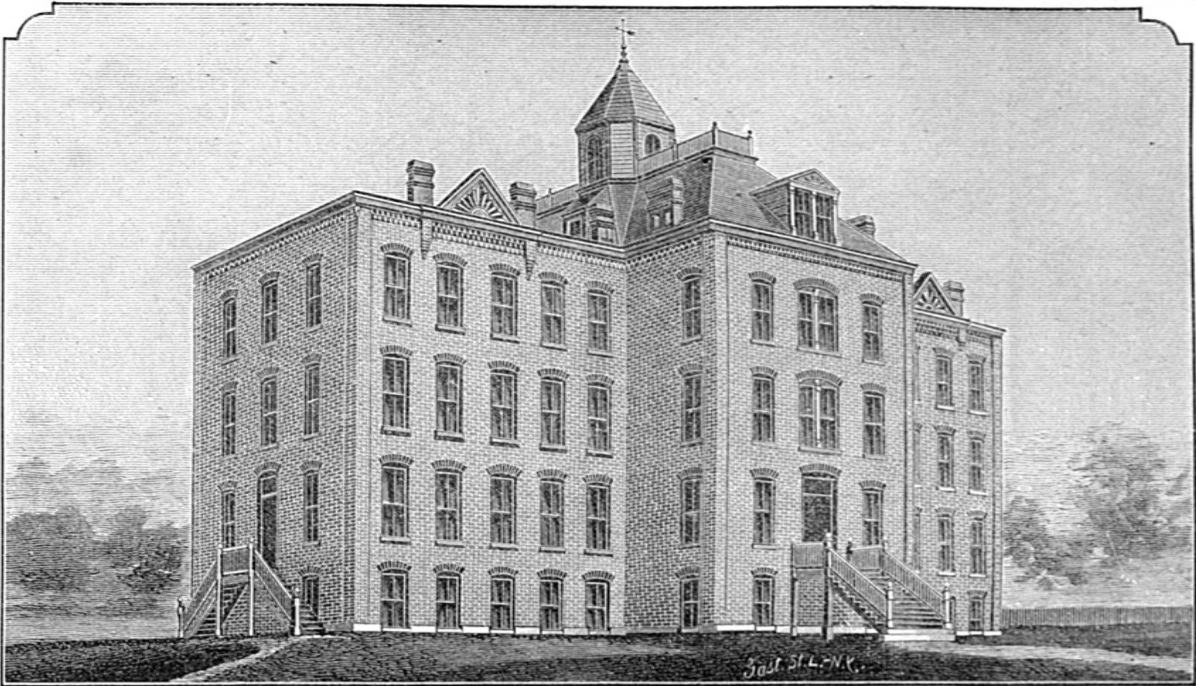


THE MAIN BUILDING OF THE UNIVERSITY OF THE STATE OF MISSOURI.
[Destroyed by fire January 9, 1892.]



Jas. St. L. - N.Y.

RUINS OF THE MAIN BUILDING.



UNIVERSITY CLUB-HOUSE

UNIVERSITY CALENDAR.

1892.

September 8, 9, 10, 12	Entrance Examinations
September 13, Tuesday	All Academic and Professional Schools (except Law School) Open
September 16, Friday	Reception of Y. M. C. A. and Y. W. C. A.
October 4, Tuesday	Law School Opens
October 29, Saturday	Open Session of Bliss Lyceum
November 12, Saturday	Athenæan Society Open Session
December 10, Saturday	Inter-Society Contest
December 17, Saturday	Union Literary Society Open Session
December 22, Thursday at 12 o'clock noon	Close for Holidays

1893.

January 3, Tuesday at 9 o'clock a. m.	Reopen
January 21 to January 30	Examinations at Close of First Semester
January 31, Tuesday	Second Semester Begins
February 13, Saturday	Open Session of Young Ladies' Society
April 8, Saturday	Prize Declamation Contest
May 20 to May 29	Final Examinations
May 27, Saturday	Stephens Medal Contest
May 28, Sunday	Baccalaureate Discourse
May 29, Monday	Closing Exercises of Law School
May 30, Tuesday	Curators Meet
May 30, Tuesday	Address before Societies
May 31, Wednesday	Oration before Alumni
June 1, Thursday	Commencement

SCHOOL OF MINES.

1892.

June 9, Thursday, 10 a. m.	Annual Commencement
September 19, Monday, 10 a. m.	Entrance Examinations
September 20, Tuesday	First Term Begins
November 24, Thursday	Thanksgiving Holidays
December 23, Friday	Christmas Holidays Begin

1893.

January 3, Tuesday	Exercises Resumed
January 23, Monday	Mid-Year Examinations Begin
January 28, Saturday	Mid-Year Examinations Close
January 31, Tuesday	Second Term Begins
February 22, Wednesday	Washington's Birthday Holiday
May 29, Monday	Final Examinations Begin
June 6, Tuesday	Final Examinations Close
June 8, Thursday, 10 a. m.	Annual Commencement

1892							1893													
JULY.							JANUARY.							JULY.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	..	1	2	1	2	3	4	5	6	7	..	..	..	..	..	..	1
3	4	5	6	7	8	9	8	9	10	11	12	13	14	2	3	4	5	6	7	8
10	11	12	13	14	15	16	15	16	17	18	19	20	21	9	10	11	12	13	14	15
17	18	19	20	21	22	23	22	23	24	25	26	27	28	16	17	18	19	20	21	22
24	25	26	27	28	29	30	29	30	31	..	..	..	..	23	24	25	26	27	28	29
31	..	..	..	..	..	..	..	..	..	..	..	..	..	30	31	..	..	..	..	..
AUGUST.							FEBRUARY.							AUGUST.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	1	2	3	4	5	6	..	..	..	1	2	3	4	..	..	1	2	3	4	5
7	8	9	10	11	12	13	5	6	7	8	9	10	11	6	7	8	9	10	11	12
14	15	16	17	18	19	20	12	13	14	15	16	17	18	13	14	15	16	17	18	19
21	22	23	24	25	26	27	19	20	21	22	23	24	25	20	21	22	23	24	25	26
28	29	30	31	..	..	..	26	27	28	..	..	..	..	27	28	29	30	31	..	..
SEPTEMBER.							MARCH.							SEPTEMBER.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	1	2	3	..	..	..	1	2	3	4	..	..	..	..	1	2	
4	5	6	7	8	9	10	5	6	7	8	9	10	11	3	4	5	6	7	8	9
11	12	13	14	15	16	17	12	13	14	15	16	17	18	10	11	12	13	14	15	16
18	19	20	21	22	23	24	19	20	21	22	23	24	25	17	18	19	20	21	22	23
25	26	27	28	29	30	..	26	27	28	29	30	31	..	24	25	26	27	28	29	30
OCTOBER.							APRIL.							OCTOBER.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	..	..	1	..	..	..	..	..	..	1	1	2	3	4	5	6	7
2	3	4	5	6	7	8	2	3	4	5	6	7	8	8	9	10	11	12	13	14
9	10	11	12	13	14	15	9	10	11	12	13	14	15	15	16	17	18	19	20	21
16	17	18	19	20	21	22	16	17	18	19	20	21	22	22	23	24	25	26	27	28
23	24	25	26	27	28	29	23	24	25	26	27	28	29	29	30	31	..	..	..	..
30	31	..	..	..	..	..	30	..	..	..	..	..	..	..	..	..	..	..	..	..
NOVEMBER.							MAY.							NOVEMBER.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	1	2	3	4	5	..	1	2	3	4	5	6	..	..	..	1	2	3	4
6	7	8	9	10	11	12	7	8	9	10	11	12	13	5	6	7	8	9	10	11
13	14	15	16	17	18	19	14	15	16	17	18	19	20	12	13	14	15	16	17	18
20	21	22	23	24	25	26	21	22	23	24	25	26	27	19	20	21	22	23	24	25
27	28	29	30	..	..	..	28	29	30	31	..	..	..	26	27	28	29	30	..	..
DECEMBER.							JUNE.							DECEMBER.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	1	2	3	..	..	..	..	1	2	3	..	..	..	..	1	2	
4	5	6	7	8	9	10	4	5	6	7	8	9	10	3	4	5	6	7	8	9
11	12	13	14	15	16	17	11	12	13	14	15	16	17	10	11	12	13	14	15	16
18	19	20	21	22	23	24	18	19	20	21	22	23	24	17	18	19	20	21	22	23
25	26	27	28	29	30	31	25	26	27	28	29	30	..	24	25	26	27	28	29	30
..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	..	..	..	..	..	..

HISTORICAL STATEMENT.

The University of the State of Missouri was located at Columbia, Boone county, on June 21, 1839, by commissioners appointed and empowered to select a site under an act of the General Assembly of February 8, 1839. The main building was begun in 1840, and courses of instruction in Academic work were opened on April 14, 1841. A Normal department was established by act of March 11, 1867. The College of Agriculture and Mechanic Arts and the School of Mining and Metallurgy were made a department of the University by act of February 21, 1870. The Law department was opened in October, 1872, the Medical department in February, 1873, and the Engineering department in September, 1877. The Experiment Station was established under act of Congress of March 2, 1887. The Missouri State Military School was created by act of the General Assembly in the spring of 1890.

The foundation and the maintenance of the University rest on:

- a. The old Seminary fund, \$122,000, at 6 per cent;
- b. The new Seminary fund, act of March 29, 1872, \$100,000, at 5 per cent;
- c. Congressional Land Grant fund, act of July 2, 1862, \$317,000, at 5 per cent;
- d. Appropriations for specific purposes by the State Legislature;
- e. The property received from the citizens of Boone county to determine the original location, \$207,900;
- f. New building subscription by citizens of Boone county in 1892, \$50,000;
- g. The United States Experiment Station fund, \$15,000 per annum;
- h. Fund from the act of Congress of August 30, 1890, for the year 1892-93, \$18,000;*
- i. The Anthony W. Rollins Aid fund, interest on nearly \$40,000;
- j. The James S. Rollins Scholarship fund, \$6,000, at 5 per cent;
- k. Endowment granted by the 36th General Assembly, \$646,946.23, at 5 per cent;
- l. Various gifts by individuals as foundations for prizes.

* Less one-sixteenth, appropriated by special act to Lincoln Institute at Jefferson City

REPORT OF THE BOARD OF CURATORS.

To his Excellency DAVID R. FRANCIS, *Governor of the State of Missouri* :

SIR—In compliance with the provisions of section 8751 of the Revised Statutes of Missouri 1889, the Curators of the University of the State of Missouri have the honor to submit the following report of the progress, condition and wants of the Institution for the year ending June, 1892.

Separate reports of the various departments of the University exhibiting the course of study prescribed in each, and the number and names of officers and students, the amounts of receipts and expenditures for the year ending December 31, 1891, together with much other useful information, will be found in their proper order in the following pages of this report :

For convenience, the following facts are here condensed.

Total number of students enrolled during the year at Columbia.....	631
Total number of professors employed during the year at Columbia.....	25
Total number of assistants employed during the year at Columbia.....	23
Receipts for the year ending December 31, 1891.....	\$130,388 69
Disbursements for the year ending December 31, 1891.....	\$120,139 25
Total number of students enrolled during the year at Rolla.....	83
Total number of professors employed during the year at Rolla.....	4
Total number of assistants employed during the year at Rolla.....	4

In our last report, for the year ending June 30, 1891, reference was made to the labors and responsibilities of the Curators in the management of the University without a President. In that report, in anticipation of the important change soon to take place through the election to the presidency of Prof. Richard H. Jesse, of Tulane University, we used the following language: "By direction of the Board he will be inaugurated at the chapel in the University on the third day of June, 1891. The occasion will be one of great interest to all, and we think a singular good fortune to the University. President Jesse is a ripe scholar, having enjoyed the highest advantages the best colleges of the United States could bestow, to which he has added the opportunities of foreign travel. President Jesse is a man of broad views, of excellent judgment of men, possessing fine common sense and tact in the management of business. He possesses special executive ability." These

things we stated as a conclusion based on the testimony of "men of eminent character and of great scholars and educators."

But great and rare qualities of person and mind, however improved and strengthened by the discipline of exercise and the acquisition of the highest learning, do nevertheless sometimes fall below a just expectation in the moment of actual trial. Some touch of nature is wanting; there is suddenly developed some latent defect of disposition, or the surrounding conditions prove inharmonious to former experience. It is considered less difficult to select a successful president of the United States than a successful president of a great university. So varied, weighty, difficult and delicate are the duties of the position, and so full of activities urgent every moment, that few men are born with the disposition and excellent combination of talents, improved by the requisite study and experience, to fill it suitably. For this reason every change of management excites grave apprehension as to the result. It is matter of intense satisfaction that the University has safely passed this ordeal.

Being yourself present at the inauguration of President Jesse, you know how happy were the auspices of that occasion. It is sufficient here to state that every promise of that day has been fulfilled. President Jesse has justified the learned friends who had confidence to indorse him to us unreservedly, and his executive management and admirable address to every condition that has presented itself, has answered the expectations raised by the noble character and eminent scholarship that first attracted us to him. Under his control, brief as it has been, the progress of the University has been steady and rapid. He is a diligent worker as well as careful thinker, and no detail of University management escapes his observation. Under his direction it is believed that the success of the University heretofore attained will be upheld and increased to a measure proportionate to the demands of the situation, and to all the moral and material aid which the State may afford her greatest educational institution.

With language too feeble in our last report, we sought to express our idea of the importance of a learned and able Faculty. We here recur to the principle to emphasize it, and to preserve in the life of the University its persistent activity. A thousand pigmies may bind one giant, but they can never create anything greater than themselves. Little minds breed little ideas. Small dispositions cramp and dwarf generous and noble young minds placed under their control at the most impressible and imitative age. For it is the nature of youth to listen to what it hears and to conform to what it sees, and thus to reveal in after years a similarity, both in measure of force and style of conduct, to those immediately directing it. It is safe to conclude that the ideas and principles instilled into the hearts of young men, the example daily given them by their instructors, the loftiness of purpose, nobleness of ambition, purity of intention, intensity of disposition and integrity of character, or the opposite, must in a very great measure determine the scope and color of their lives.

The limit of purpose and height of achievement are most often fixed by early conditions, and not infrequently the difference in lives is the difference in teachers. Dollars cannot measure the value to youth and the State of the permanent and magnifying power of a great and good instructor. It is most fortunate that this fundamental and pregnant truth is given full recognition and practical effect by the President of our University. It is a guiding principle with him that the mind and character which through our University system is to mould and form the minds and characters of the students shall be both noble and true, broad, generous and upright, stable, forceful and elevating.

In this measure, the Board are in hearty and practical sympathy with the President, and in the election of professors it is their policy to confer fully with him, so as to secure that ability, character and harmony of administration that shall prove most useful in building up the University. In this co-operative movement, the State is also a practical party. For every enterprise, whether moral, spiritual, intellectual or social, in like manner with material, is influenced by the pecuniary aid it receives. Integrity, character, ability and learning in the collegiate market are subject to the same laws that honestly affect commodities. The greater the man, the more pre-eminent his moral and intellectual worth, the greater must be the salary to secure and retain him, other things being equal. Colleges seek him and persuade him with increasing offers till the ablest secures his invaluable services. Missouri cannot abrogate nor mitigate this commercial feature of social and intellectual interchange. It is as pervasive as it is reasonable. It is hoped, therefore, that the State will continue to take a broad and liberal view of this matter, and make the necessary appropriation to enable the Board of Curators to deal justly by the members of the Faculty, and as occasion requires to employ the ablest men in University work. The University is sustained by many able professors. To retain them, we must deal with them as fairly under all the circumstances as like institutions deal with others.

Suitable buildings and equipments are required for the utmost success, but the first necessity is able teachers, great professors. In this matter it is our opinion that the present prosperity of the University and the encouraging outlook for the future fully justify the Board in giving great prominence to the strength of the Faculty, and our purpose continually to support this feature of administration as occasion requires. We neither claim nor promise perfection. We announce an important principle, and earnestly seek with the light and means at our command to enforce it.

The popularity of the work of the University, and its signal success, as evidenced by the increased attendance at this session, is matter of pride, not only to the management, but also to all the people of the State. Missouri, now more than ever, is devoted to the interests of higher education. The hearts of the people beat in unison with the desire for a grand institution of learning that shall give unexcelled power for development and progress, and shall be their crowning glory in the Mississippi valley. They have lifted the University to its legitimate legal status of the first

institution of the State. They have made it the State University. They have entered upon the policy of endowing it, and they recognize their duty and interest to maintain it liberally and suitably. They, therefore, have a right to expect an expansion proportionate to the effort being made. Such has been the case. The growth of the institution in every respect is encouraging. The number of students at this session is 631, being 51 more than any previous year of the fifty-three years of the University's history; and in our opinion, but for the burning of the main building in the midst of the session, the number of students might easily have reached 700. With a continuance of the present vigorous policy by the State and the University itself, when the new buildings are erected and properly equipped, there appears to be no reason why the student corps should not in a brief time attain to twelve or fifteen hundred. The State of Missouri, by her situation and natural advantages, with the noble character and public spirit of her people, deserves this splendid accomplishment, and it is the ambition of all connected with the immediate control of the University to attain this end. Missouri should never pause for a moment in her onward movement, until none can mention her name or celebrate her glories without giving first thought and consideration to her great University. For at last it is great minds that most adorn a state, and elevate it far above the grandeur, fruitfulness and beauty of nature in the achievements of history and permanent beneficence of true glory. All experience carries this testimony. Intelligence discounts nature. A country is known by its men. The university is the creator of power—the power of thought—and elevated thought is the inspirer of sublime conduct. A country without great schools is incapable of lofty enterprise, and buries its annals with its years, leaving neither name nor memories to redeem it from oblivion.

It is equally true that the system of education which does not tend strongly and persistently to sustain and nurture the moral virtues and higher spiritual aspirations of mankind is not only deleterious to the social structure, but injurious to the State. A government can be no better than its people, whatever its form. A country cannot rise superior to its homes, nor defeat the inevitable influence of its schools. That which is sown in the university shall surely be reaped in the field, shop and factory; in the forum, on the rostrum and the hustings. It spreads everywhere and touches everything—the sacred vestments, the judicial ermine, the pulse of commerce, the thrift of business, the course of law and the fundamental institutions, the public credit and the national honor. If education is power, still it may be for evil as well as good. Society has reason to dread the power which learning and culture confer on the reckless and misguided. It is not disloyal to higher education to aver that the pathway of science which leads the youth away from the door-yard of the old home where he learned the first lessons of truth and goodness were better never to be trodden. A highly educated and brilliant adept at scorn of the plain and simple ways of virtue, truth and honor, or skilled to trifle with the sacred assurances to the deep yearnings of the soul for

a nobler attainment and ultimate higher development, is destined to become a merciless vulture upon the vitals of the very institutions that give him prominence. It is this reflection that affords the profoundest pleasure in referring to the high order of moral discipline prevailing among the corps of students at our University. It is no easy task to govern and adjust all affairs of theory and practice among 600 students and many professors with varying dispositions, tastes, interests, conditions and ambitions, and to hold the general progress to the universal course of right and the sure unfolding into permanent form of the nobler impulses of human nature. But it is believed that the University in this measure of excellence does not fall below any similar institutions in the country. Within its walls is the greatest safety that can be given the university student. And it is the fixed policy of the management to shape all organized efforts to the promotion of the highest moral attainment and a pure and lofty patriotism.

Expansion—New Departments.

The rapid expansion of the University, as well as a proper policy of gradual development of University facilities and utilities, has caused the establishment of several new departments and the strengthening of others. And this is a policy that ought to be persistently pursued until the University of Missouri shall afford the opportunity, in equal measure and with equal aids with the greatest colleges, to acquire all the knowledge that can be gained at any institution in the United States. And until this is accomplished, the State will neither have done its duty to its people nor acted up to the full measure of its dignity and responsibility. A poor university is poor economy in this rich and rapid age. To postpone from year to year establishments and improvements that ought to be instituted at once by energy and a reasonable outlay is a reckless waste of time and opportunity. Besides, students cannot be deceived. They know what constitutes a university, and to them it is a sad discouragement should they discover that any essential or eminently useful thing is absent, or that any department is defective in professional superintendence or material equipment. The work is the work of the State, and it should be organized with that vigor and completeness, and conducted with that force and efficiency that will answer the dignity of the commonwealth and the demands of this precise and exacting age. The world has made more true progress in the last hundred years than in all the previous ages. The world now waits for nothing. Its anxieties for improvement are intense and its discoveries are sudden and startling. It meets every emergency and it meets it with scientific precision and lightning rapidity. And the University that is not organized in full complement with the wants and progressive spirit of the age will receive the frown of the age. It cannot and ought not to succeed. A piece of a university is contemptible. The Curators could not make the sacrifices of time and business required of them were it not for the comfort of the

assurance that our great State is fully awake to the interests of higher education, and is now prepared and anxious to supply the means necessary to an earnest and careful administration of the University. With this encouragement the Board of Curators are inspired with new energy and the hope of successful effort.

Normal Department.

In 1867, the Legislature passed an act authorizing the Board to establish a Normal department, and requiring them to employ a professor. But no provision was made for payment of salary, and the position remained vacant, its duties and responsibilities meanwhile being assigned to the department of English, already burdened with its own labors. But, for the time, no better disposition could be made. However, the Board on the 3d day of June, 1891, elected Professor J. P. Blanton to this chair, and he entered upon its duties at the beginning of this session with great zeal and energy. He has given the department great prominence, and made it very attractive and influential. Through it the University is being brought into touch with the public schools and public school teachers of the State. Unfortunately in former years it has seemed to be inconvenient to the University management, doubtless for want of means, to institute a close and confidential relation with the vast body of public school teachers of the State, numbering about fourteen thousand. In this all have suffered, but doubtless the greatest sufferer has been the University. But it is evident that the University can never succeed to its full measure until it merits and receives the approbation, friendship and assistance of the organized educational forces of the State, as well as the general popular favor. The University is based on the general intelligence and educational work of the State. It cannot go forward as it ought without the support and help of the army of teachers of the State. Whose duty is it to take the initiative? It is certainly the duty of the University. It belongs to it to solicit the acquaintance it so much needs and the friendship which no money can purchase. It is to be won by presenting the University to the schools where the schools are, and in state, district and county institutes; by the University seeking good will by showing good will. For we cannot like those who show indifference to us, to our feelings and to the affairs of our lives.

By the institution of a Normal department the public school teachers are now given a direct and proprietary interest in University work. It is their department, for their special benefit; and with an energy that is tireless, Prof. Blanton is seeking to make known the superior advantages of this department in connection with the great library and other departments of the University, all of which are fully open to all students. It is the design speedily to increase the teaching force in this department, and make it fully equal to the demands which are now pressing upon it. It is our opinion that the establishment of this department was most wise, and that through its expansion is speedily to come great increase in number of students and popular favor to the University. Eventually its work

must be of such a high order as to make its diploma of inestimable value to the student and the high schools of the State. This department cannot be given entire and complete working efficiency until it is supplied with a High School for purposes of a model school, for which provision should be made at as early a period as possible. Such a high school is to the Normal department what the laboratory is to the sciences. It is the work-room for the student for demonstration and illustration, and for improvement by observation of just and reasonable methods of childhood government and instruction. Its importance cannot be over-estimated.

Commercial Department.

Believing that a regular system of book-keeping, correct business habits, and a course of commercial study, are an essential part of the education of every young man preparing himself for the duties and cares of life, the Board established a Commercial department, and on the 18th day of September, 1891, elected Prof. M. S. King to the same. The department has proved to be exceedingly popular, and speedily filled up to the full measure of Prof King's time. It is evident that the students fully comprehend the practical advantages to them in future business life of this department. As soon as possible, it should be expanded to meet the requirements of a full school and the number of students who desire its course of instruction. Opportunity should be equal to the demand.

This is the age of pen and ink. In all business transactions, memory is almost dispensed with. In disputes in court, in investigations, the man with the book beats the man with memory alone. The book of account is the arbiter. This is also the age of accuracy. The careless man, the bookless man, the inkless man fails. The accurate man succeeds. Business is careful, margins are close. The dealer, the trader, the manufacturer, the professional man, the farmer, all need the preserving memory and tell-tale disclosures of the orderly account.

Only this can reveal the profit or loss of a business and authorize its continuance or discontinuance. Book-keeping brings writing and arithmetic together in a partnership of demonstration of the effect of every fact and detail upon the final result of a long process, giving personal satisfaction, preserving friendship and preventing law-suits. Great business cannot be conducted without it, and every small business is more profitable with it. It opens the way to a young man to immediate and paying employment.

It deserves such encouragement in the schools as to become universal in acquisition and habitual in practice. It is designed to be a common feature of education at the University.

Department of History and Political Economy.

The Board also established a Department of History and Political Economy, and on the 26th of December, 1891, elected Dr. Frederick C. Hicks to fill the same. This is esteemed one of the most important meas-

ures adopted by the Board. No separate department for instruction in these studies has ever before existed in the University. The only instruction given in them was irregular, and dependent upon the opportunities of the several professors in some collateral line of study.

Yet it must be conceded that nothing more strongly tends to prepare one for the high duties of citizenship than a knowledge of the history of one's country and of mankind, and of the great and leading principles of business, and of social and political stability and progress, on which rests the happiness of all civilized peoples, and which determine, regulate and bound the formation, growth and power of nations. Particularly is the knowledge and discipline gained by a systematic course in these things becoming and necessary under a republican form of government, where the mind of every citizen enters continually into the ceaseless current of political action, which defines and tempers the rights and liberties of all. If the people are to be and remain sovereign, to sustain popular liberty under constitutional forms rendered effective by honest political habits and traditions—if civilization of a noble and stable character under democratic institutions, sacredly protecting the rights of property and person, is to become and remain the permanent happiness and glory of mankind—then it is essential that the universal mind shall be made habitually to comprehend the basic and eternal principles of liberty and right government, of the inalienable rights of person and the reasonable limits of state authority and action over the citizen, and the equally fixed methods of business prosperity discovered by the experience of mankind through ages of struggle up to the light and life of modern times.

The impending danger over all governments to-day is the inability of many to make a broad survey of the real causes affecting their condition, and to comprehend what are the possibilities and impossibilities of relief by governmental action. Hence they are subject to that irritability, envy, desperation and revenge that pertains to immature knowledge, attended by a consciousness of wrong. The remedy is enlightenment. The situation demands the conscious strength of correct principles, of habits based on firm knowledge, of that self-possession springing from the convictions of truth. The people need the light and assurance of history, and the guide-posts erected by the universal experience of the race.

The universities cannot afford to neglect their opportunities in this field of service to mankind and the cause of free government and economic science. It is fitting that the people who sustain with their means institutions of higher education should receive back from their schools the well-prepared youth, to advocate and sustain in their midst right views of political proceedings and the true principles of business prosperity. Besides, for self-respect and personal happiness, it is a shame that any young man should quit his Alma Mater ignorant of the history of his own country and its fundamental principles. From the importance of the matter, we feel confident that the action of the board in establishing the chair of History and Political Economy will be approved. The effect

will be to greatly extend the power and usefulness of the University and to draw to it many students who otherwise would leave the State for the opportunity to pursue their studies at other colleges.

Acts of Congress July 2, 1862, and August 30, 1890.

By the land grant act of the United States of July 2, 1862, the equivalent of 330,000 acres of land was donated to the State for the purpose of establishing an Agricultural College, embracing instruction in agriculture, military science and tactics and the mechanic arts. It was intended that the proceeds of this grant should be used only for maintenance, and that the State should supply the buildings and equipment. The State, by act of the General Assembly, accepted this trust and assumed entire control of the trust fund. By act of the Legislature of February 24, 1870, the Agricultural College, with the School of Mines and Metallurgy, was established as a department in the University. At a later period the Military department was developed, and under the patronage of the State, and presided over by able and accomplished officers of the United States army, detailed by the Secretary of War, is most successful. In this the design of the United States has been fully accomplished.

But the School of Mechanic Arts has been for nearly thirty years wholly neglected by the State, it having made no provision whatever for its institution or support. But by act of August 30, 1890, the United States Congress made further and liberal provision for the Agricultural College. This act yields an annually increasing amount from \$15,000 in 1890 up to \$25,000 when the latter sum becomes a fixed annual income. Of this amount Lincoln Institute receives a part, in the ratio of the colored children to the white children of the State. The School of Mines at Rolla, as a part of the Agricultural College, receives 25 per cent, and the remainder goes to the Agricultural College at Columbia. By means of this unexpected income, without any aid from the State, the Board have been enabled to establish and put in operation in the Agricultural College at Columbia the Normal department, the Commercial department, the Department of History and Political Economy, and also a

School of Mechanic Arts,

Or Manual Training School. This latter deserves an emphatic notice. It is an entirely new feature in university work. The first Manual Training School established in the United States was due to the thought of Dr. C. M. Woodward. It is a part of Washington University, at St. Louis, and he is its present Dean. The fame of that school is national, and Dr. Woodward is everywhere recognized as the originator of the system. As a member of the Board of Curators, he has taken a deep interest in the organization of the Manual Training School in the University. This in itself is a guaranty of the very best form. And he has stated that it is as well equipped and ably conducted, so far as developed, as any school of its kind in the country.

On the 3d day of June, 1891, Prof. C. W. Marx was elected by the Board Superintendent of the school, who gives instruction in the theories pertaining to his department, and also superintends the manual work. Prof. C. B. Rearick is instructor in drawing.

About five thousand dollars have been expended in equipping this department. It was first located in the basement of the west wing of the main University building, and was burned out. Most of the equipment, however, was saved, and the school is now conducted in a leased building. A separate and suitable brick building will be erected on the campus this summer, ample for its accommodation and free development.

The course in this department is intended to cover four years, and embraces four rooms or stages of progress, viz.: plain wood-work or joinery, wood turning, work in cold iron and the forge-room. It is no part of the scheme to manufacture anything for commerce, but to give practical instruction to the students in drawing and in the use of tools of every kind, and in the construction of all the forms and patterns of wood and iron work. Thus are educated together in the most natural and easy way the brain, eye and hand, developing at once the sense and method of useful form, and evolving ideas, mental conceptions and intellectual processes into the material of practical life. The scholar is also a mechanic. While he thinks, action is present. While he studies, he learns to do. He comprehends the necessity of mental and physical co-operation as equal elements of success. He creates or preserves habits of industry. He prepares to help himself in after life as occasion requires. He is rendered independent. This condition makes him confident and self-reliant. Gradually it dawns upon him that study and toil are only different applications of the same intelligent force, of like merit, and worthy equal honor. Thus the first principle of good citizenship impresses itself upon him. Every one must do something "to earn a night's repose." He perceives that an idle philosopher is not so valuable to society as a chimney-sweep, and that truth dormant and inactive, however great, is of less value than junk or old rags on the way to market.

The workers move the world to-day. All the mighty forces that once poured through the gates of civilization in ruinous war are now engaged in wonderful competitive activity in commerce, construction, art and manufacture. The man that can think and do in this age must surpass the man trained to think but not to do. The hand of industry is every hour growing into greater comparative importance. Hitherto it has been committed for instruction to the minor schools and to tradition. It was denied a position by the side of the professions. Now the spirit of the age calls the industrial pursuits into the halls of the university, and crowns the hand of toil and the implements of industry with the same honor in which it clothes the bar, the bench and the forum. Thus passes away the cruel and barbarous period of personal preference, based on no merit but the accident of birth or calling—a monstrous imagination that has harassed and oppressed nine-tenths of mankind for centuries.

Seventy-three students have this year entered the Manual Training School, and a want of room prevented a greater number. The bounty of the General Government enables us to deal liberally with this department. There are no special charges for anything. Paper, pens, ink, drawing instruments, desks, models, wood, lumber, tools, work benches, metals, supplies, forges, and all the necessary and costly machinery and outfits, are furnished every student without cost, just as scientific instruments, maps, charts, technical books and suitable equipment are furnished to other departments. A substantial building, designed with special adaptation to the uses of this department, will be a strong feature upon the campus. This will be erected from means supplied by the State. Thus the State and Nation join in welcome of the industries to the home of the classics and sciences.

The Agricultural College.

From what precedes, it is evident that the Agricultural College in the University, embracing the School of Mines at Rolla, the Military, the Mechanic Arts and the other important schools mentioned, with yet capacity for still greater enlargement, and having at the same time control of the farm, the Horticultural department, and the Experiment station with its revenues, constitutes a strong element in university organization. The Curators have given it special consideration in the endeavor to foster its highest interests and bring to its support the popular favor its importance and merit demand. In a prominent position upon the campus it has a commodious building for its own special uses, heated by steam and hot air, repaired and improved throughout during the present year at a cost of over \$6,000, newly equipped for its work and elegantly appointed in every part. It wholly escaped injury by the fire. To-day the Agricultural College building stands alone, but soon will be one of a group of modern buildings, erected like itself for the special use of the several departments, and standing coequal with engineering, physics, medicine or law, and having an income greater than any other department. Seventy-one students, professional agriculturists, have this year entered this department, and are pursuing a special and technical course of study to equip themselves for their life work, in like manner as medical or law students, either of which schools they excel in number.

The Agricultural College is succeeding far beyond expectation in its own special work and professional course; and when it is allowed that by legal association and community of organization and support from the same fund, there are due to it the courtesies of the School of Mines, the Military School and School of Mechanic Arts, its interests, power and influence as compared with the other departments are imposing and of wide range. In former years it has been impeded for lack of sufficient means to meet its necessities, the physical sciences being very expensive as compared with the classics and similar learning. But for the present the income of the Agricultural department is deemed ample for the pay of its professors and for all the "facilities for instruction," to which uses

alone it is limited by law. It will therefore be inexpensive to the State, except for buildings and fixtures.

It is our opinion that time will prove the wisdom of associating together all these departments of learning and building up one great University, instead of dissipating the energies of the State at far greater cost and loss of that massive effect produced by a grand unity, which is in itself a mighty influence over the imagination in fixing the attention, inspiring ambition, creating energy, exciting enthusiasm and impressing every one with the earnestness, zeal and self-respect that spring from the combined power of all. Besides, all learning is of the same nature, all truth is of the same essence, and all students far into life pursue the very same studies and investigations. Only when the practical demands for business and subsistence begin to press do they differentiate into law, agriculture, mechanics, medicine and the various specialties. Moreover, the association of all the schools multiplies the influence and benefits of each, and through acquaintance and friendship draws together the young men of the State, producing a good understanding, obliterating local prejudices and follies of business distinction, and creating a spirit of toleration and mutual self-respect. Agriculture, far from suffering by this association in the University, must itself, by the inherent purity, beauty and beneficence of its learning, in which is nothing evil, tend to the advantage of all other departments, and they have a deep interest in its permanent presence upon the campus.

The Fire.

The burning of the main building on the 9th of January, 1892, is now a matter of history, as is also the action of the 36th General Assembly in making provision by creation of a building fund of \$237,000 for the erection of new buildings at Columbia, and for equipping the same, and the purchase of a new library.

The Insurance and the Building Fund.

The insurance upon the buildings and their contents amounted to \$147,500, all of which has been collected and paid into the State treasury except \$923, salvage allowed the insurance companies on settlement by the appraisers of the loss on scientific instruments and apparatus, some of which were saved. The remainder of the building fund consists of \$10,000 transferred from the "State Insurance Department fund" by said act, and \$50,000 subscribed by the people of Columbia and Boone county "In aid of the State University Building fund," thus making a total building fund of \$236,577.

Subscription of the People of Columbia and Boone County.

The subscription of \$50,000 by the people of Columbia and Boone county is collected and in the hands of private parties appointed by the subscribers for this purpose, except a small amount, delay in payment of which was caused by the death of the subscriber, which made the allow-

ance of the same in the probate court necessary. But I am informed that the entire amount will be paid to the Curators within one week, or before the first day of June.

Water Bond.

“The Inhabitants of the Town of Columbia,” being a corporation by that name, has executed and delivered to the Curators the bond provided for in said act of March 24, 1892, obligating it to “provide and furnish a water supply at once for said University buildings,” etc., on the University campus. Said bond being for the protection of the State’s interest, the same was referred to the Attorney-General, Hon. John M. Wood, and he has given a written opinion, now on file with the Secretary of the Board, that the bond is in due form.

The New Buildings.

The Curators, after careful study of the locality, have adopted a campus plan for the main building and such departmental buildings as may be erected now and in the future. The buildings will be erected upon a quadrangle extending lengthwise from north to south, and being 300 feet wide—the west line facing with the east wall of the Agricultural College building, which will form one of the group, and which is really the initial point determining the position of the other buildings.

The new main building will stand to the south of the position of the old one and at the head of the quadrangle facing north. The main building cannot be erected at present. It is estimated that it will cost \$300,000, and the 37th General Assembly will be asked to appropriate that amount for the purpose. No plans, however, have been drafted for this building.

The buildings which the Board have resolved to erect out of the building fund now authorized are six in number, viz.: a boiler and engine house for heating and power purposes, a building for the Manual Training School, a building for Physics and Engineering, a building for Biology and Geology combined with a Museum, a Chemical laboratory and a Law building. The Physics building will stand on the west side of the quadrangle, about 55 feet south of the Agricultural College building; the Manual Training School building will stand south of the Physics building about 50 feet; the boiler-house will stand south and west of the last named building. The other three departmental buildings will stand on the east of the quadrangle. All will face upon the enclosed area. The plans for the first three buildings named have been adopted and the advertisement for bids to erect the same is made, but the time has not elapsed. The plans for the other three buildings are now being prepared by the architect, and will be ready in a few days for action by the Board. These buildings will be pushed to completion as rapidly as possible.

The first object in construction has been to secure sufficient room for the departments, with the greatest convenience and economy of arrangement possible. It is believed also that the architectural effect will be pleasing, especially when the main building is in its place. The Board

selected Mr. M. F. Bell, of Fulton, as architect and superintendent, in accordance with said act, at the compensation therein mentioned.

Material Saved.

The walls of the burned building have been taken down and the grounds cleared up. The net value of the stone and brick and iron saved from the wreck which can be sold or worked into the new buildings will be about \$4,000.

Library.

The entire library was lost except a few books in the hands of professors at the time, and except a considerable portion of the law library, which being in the west wing of the building was saved. The law library was damaged about one thousand dollars. These books the Board have ordered to be supplied, and the purchase will soon be made. The insurance on library and cases was \$11,000. It is the intention of the Curators to reinvest this amount immediately in a new library, and to add to it several thousand dollars. While this amount may not equal the cost of the old library, it is believed that the new library will prove much more select and satisfactory to the students. The Faculty have been authorized to prepare a list of books for purchase this summer, so as to have the new library open at the beginning of the next session.

A large and well-selected library is of the first importance to the success of the University, and it should equal if not exceed for the present fifty thousand volumes. No one feature in university equipment is more useful or more pleasing and satisfying to students. The very existence of such a force and aid attracts students. Thoughtful and investigating minds will not be content without it. The Missouri University cannot afford to be less enterprising in this respect than other similar institutions. The State could not better serve itself than by the expenditure of fifty thousand dollars in the creation of a splendid library at the University. It would attract to it minds of large caliber and earnest men pursuing investigations and post-graduate studies.

Scientific Apparatus.

All our scientific apparatus was lost in the fire except about \$923 worth. This was a great misfortune to the current year. It could not all be replaced in time to meet the wants of the classes. Some of the most needful, however, was purchased in time.

As soon as possible, it is the design to equip each department in the most efficient and complete manner, so that the University of Missouri shall not be adjudged less progressive and less enterprising than other schools of like character.

The Museum.

The fine cases and specimens on the second and third floors of the museum were lost in the fire, it being impossible to remove them. But a part of the large specimens on the first floor were saved by taking them out

through an opening made in the wall for the purpose. The elephant was thus saved, though somewhat damaged. The remnants of the museum are now preserved in a frame structure, erected temporarily for the purpose. The insurance on the specimens was \$3,000, which will be used in repairing them and supplying those lost. With this amount it is thought the museum can again be made useful and attractive, though a much larger sum could profitably be expended in this direction.

Additional Expense from Fire.

The burning of the main building caused many unexpected expenses. These could not be avoided, and, of course, had to be met out of the ordinary maintenance fund. It is the purpose, however, to keep the biennial disbursements within the appropriations, and if we succeed in this it will be an attainment resulting from the most careful management.

Leases.

It has been necessary to provide new and temporary quarters for some of the departments. In this emergency, the Agricultural College building has extended its courtesies to some, also the Medical building, which was repaired for the purpose. The town of Columbia furnished free of rent for chapel exercises the splendid and elegant hall known as Haden's opera house. Other necessities for room had to be met by lease of suitable buildings, and this system will be continued until the new buildings are completed.

Records.

The records of the University corporation, with all the papers pertaining to its history and current business, were saved without loss. These, being conveniently situated, were removed from the vault; otherwise they must have been destroyed, as the vault proved to be insufficient against the intense heat. The saving of the records is due to the carefulness and energy of the Secretary, J. G. Babb, who, as soon as he perceived that the fire was beyond control, organized a force for their removal.

It would be a sad injustice in this report were proper mention not made of the prompt and noble conduct of the people of Columbia, and the spirited and manly action of the students and professors, on the occasion of the fire. The people immediately by a common impulse threw open to the uses of the University every available room and hall free of cost, sparing no effort to lessen the misfortune, and to protect to the utmost the interests of the State. And it is a great satisfaction to the Curators to recognize their generous action and public spirit.

The President and Faculty also exhibited such energy and good judgment as merits and elicits the highest commendation. And the manly and prudent conduct on the part of the students excites our highest admiration. Without exception they stood by their duties, deeming it more worthy to suffer affliction with the University in its sorrows than to desert their posts. The fire occurred about 7:30 o'clock p. m., on Saturday, and on Tuesday morning at 9 o'clock every student answered to

roll-call, and every class was heard in its newly appointed place, just as if nothing had occurred. This is conduct worthy of Missourians, and it challenges the admiration of all who know the value of brave and honorable behavior under severe circumstances. It is proof of the noble and dutiful spirit nurtured and developed at our University, which promises that safety and honor to the State which is due to manly spirits and brave hearts.

In front of the main building, eighteen feet from the wall line, stood six stone columns on a raised platform, and supporting the portico. They are separated from one another by a space of ten feet on a straight line from east to west. Their diameter is four feet eight inches, and their height is thirty-seven feet to the capitals that crown them, which are four feet high. They are of the Ionic order of architecture, massive and simple. The heat from the burning building so affected them that they are now scaling deeply on the side that was nearest to the fire, giving them the character of a ruin, and telling in silent eloquence the story of the sorrow that befell them on January 9, 1892, when the flames destroyed the grand structure to which they were mated and left then standing alone. They are now the only memento upon the campus of the old University building, which was erected over fifty years ago, and preserve in their scarred and crumbling magnificence the one feature by which the long line of students that have passed out from these scenes can recall the likeness of their Alma Mater. They will be left standing just as they are, in the very midst of the area around which will be grouped the new buildings.

Between these columns, through the wide entrance to the spacious rotunda of the old building, in years gone by, have entered into the University more than fourteen thousand students. As they approached up the broad aisle leading over the campus, the very first thing that caught the eye, and impressed the imagination, was these magnificent columns. Dull indeed was the soul and unfit for the learning of those grand halls, upon which they did not impress themselves with deep and sacred effect. They will stand reflected forever in the hearts of the noble band of youth who here were initiated into the mysteries of that learning which endowed them with the power of cultivated thought, expanded their hearts to all the high claims of the divinest of social structures, and inspired their souls with a deathless ambition to rival and lead the world in the offices of patriotism and service to their country.

Fifty years have marked the ceaseless procession, coming and going, of this army of students. Year after year they have departed into the mighty throng of toil, bearing with them in the pursuit of fortune, and through all the mutations of business and the adventures of life, the dear memories of the scenes, associations, trials and triumphs of their college days. Many now adorn the social and political life of their State, some have given their talents to other states, while others, on sea or land, with distinguished service have borne the national honor. They are a scattered band of brothers. Life has brought them varied fortune, hardships

to some, success and happy scenes to others, and some are beyond the touch and bitter cup of this great disaster.

But to all who think and feel, one sentiment is dear—the love of the old University and its fond recollections.

“Be it a weakness, it deserves some praise:
We love the play-place of our early days.”

Few hearts did not bend and few eyes did not moisten at the knowledge of this irreparable loss. For it is manly to feel deeply, and tenderness is a badge of nobility.

Let these columns stand. Let them stand a thousand years. Crown them with an arch, memorial to the men who in their magnificent presence learned what life and duty are, and how to live the one and do the other. They will be to all a rallying point of future devotion and service to the University. For surely the strongest bulwark around any institution is the ceaseless recollection and loving devotion of its intellectual children. No university can be most attractive and great till age has brought it this support. No argument persuades like sentiment, and no force impels like affection.

And these sad columns will in future also prove of deep significance and impressive force upon the column of new students, growing ever longer as time proceeds and the State makes greater provisions. They will walk up the broad aisle where their elder brothers walked, and, through these columns, bereaved of their former glory and tortured into ruins by fire, they will behold the new University, a nobler structure, with its associate buildings arranged on either side, the whole in proportion and on a scale worthy the expanded power and wealth and in fitting correspondence to the increasing dignity of the State.

Respectfully submitted.

G. F. ROTHWELL,
President of the Board of Curators.

CORPORATION.

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- _____,
Professor of Mechanical Engineering (to be supplied soon).
- _____,
Professor of Art (to be supplied soon).

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M. H. LOCKWOOD,
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- IRVIN SWITZLER,
Secretary of the Experiment Station.
- CHAS. P. FOX, AG. B. (OHIO STATE UNIV.),
Assistant Chemist of the Experiment Station.
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- GEN. J. B. DOUGLASS,
Superintendent of Unsold College Lands.

* School of Mines and Metallurgy at Rolla.

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A. LANGUAGE.

- I—English.
- II—Latin.
- III—Greek.
- IV—Modern Languages.
- V—Hebrew.
- VI—Sanskrit.
- VII—Comparative Philology.

B. SCIENCE.

- VIII—Political Science.
- IX—Mental and Moral Philosophy.
- X—Mathematics.
- XI—Physics.
- XII—Chemistry.
- XIII—Geology and Mineralogy.
- XIV—Biology.

II. PROFESSIONAL.

- XV—1. Agriculture and Mechanic Arts.
- XVI—2. Normal Instruction.
- XVII—3. Law.
- XVIII—4. Medicine.
- XIX—5. Mining and Metallurgy.
- XX—6. Engineering.
- XXI—7. Military Science and Tactics.
- XXII—8. Art.

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ACADEMIC FACULTY.

(Excepting those of the President and the Chairman of the Faculty, the names are printed in the order of appointment.)

R. H. JESSE, LL. D.,
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Emeritus Professor of Physics.

PAUL SCHWEITZER, Ph. D.,
Professor of Chemistry.

JAMES SHANNON BLACKWELL, M. A., Ph. D.,
Professor of Semitic and Modern Languages.

W. C. TINDALL, M. S.,
Associate Professor of Mathematics.

J. C. JONES, A. M., Ph. D.,
Professor of Latin Language and Literature.

EDWARD A. ALLEN, Litt. D.,
Professor of English.

WM. B. SMITH, A. M., Ph. D. (GOETT.),
Professor of Mathematics and Astronomy.

W. W. CLENDENIN, S. M.,
Assistant Professor of Geology and Mineralogy.

H. C. PENN, A. B.,
Assistant Professor of English.

GEORGE D. PURINTON, A. M., M. D., Ph. D.,
Professor of Biology and Curator of the Museum.

G. C. BROADHEAD, M. S.,
Professor of Geology and Mineralogy.

- BENJAMIN F. HOFFMAN, L. M.,
Assistant Professor of Modern Languages.
- M. L. LIPSCOMB, A. M.,
Professor of Physics.
- W. G. MANLY, M. A. (HARV.),
Professor of Greek Language and Literature.
- MILTON UPDEGRAFF, M. S., B. C. E.,
Assistant Professor of Mathematics and Astronomy, and Director of the Observatory.
- J. P. BLANTON, A. M.,
Professor of Mental and Moral Philosophy.
- JOHN M. BURNAM, A. M., Ph. D.,
Assistant Professor of Latin.
- WALTER MILLER, M. A. (HONORARY MEMBER OF THE ROYAL ARCHÆOLOGICAL
SOCIETY OF LEIPZIG).
Associate Professor of Greek.
- GEO. A. WAUCHOPE, M. A., Ph. D.,
Assistant Professor of English.
- JOHN W. CONNAWAY, D. V. S., M. D.,
Professor of Physiology.
- WM. SHRADER, B. S., Ph. D. (STRASBURG),
Assistant Professor of Physics.
- FRED. HOMBURG, B. S.,
Assistant Professor of Chemistry.
- FREDERICK C. HICKS, Ph. D.,
Professor of History and Political Science.

ASSISTANTS AND TUTORS.

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| SILAS DINSMOOR,
<i>Assistant in Chemistry.</i> | H. J. GERLING,
<i>Tutor in Modern Languages.</i> |
| W. R. DODSON, S. B.,
<i>Assistant in Biology.</i> | R. F. BRYAN,
<i>Tutor in Modern Languages.</i> |
| J. F. PAXTON, A. B.,
<i>Assistant in Latin.</i> | G. L. BROWN,
<i>Tutor in Modern Languages.</i> |
| J. W. FROLEY, B. S., Pe. B.,
<i>Tutor in Mathematics.</i> | M. H. LOCKWOOD,
<i>Tutor in Mineralogy and Geology.</i> |
| L. M. DEFOE, Pe. P.,
<i>Tutor in Mathematics.</i> | CORA A. EITZEN, Pe. P.,
<i>Tutor in Mathematics.</i> |
| C. J. KEYSER, B. S.,
<i>Tutor in Mathematics.</i> | |

I. Department of English.

EDWARD A. ALLEN, Professor { H. C. PENN,
G. A. WAUCHOPE, } Assistant Professors.

The following courses are offered:

1 and 2. The principles of written discourse. Exercises and themes. Four sections, two semesters, two hours a week, Wednesday, Friday (Freshman). Professors PENN and WAUCHOPE.

Clark's Rhetoric; Lectures.

3 and 4. The History of English Literature, (1) from its Beginnings to the Restoration, (2) from the Restoration to the Present; and the study of masterpieces of representative authors from Chaucer to Tennyson. Parallel readings. Essays on literary and historical subjects. Two semesters, three hours a week, Tuesday, Thursday, Saturday (Sophomore). Prof. ALLEN.

Lectures; Nicoll's Landmarks of English Literature; English Classics.

For reference: Stopford Brooke's English Literature; Greene's Short History of the English People; Minto's Manual of English Prose; Ward's English Poets; Saintsbury's Elizabethan Literature; Gosse's Literature of the Eighteenth Century; Stedman's Victorian Poets.

5. History of the English Language. Theses. First semester, three hours a week, Tuesday, Thursday, Saturday (Junior). Prof. ALLEN.

Lectures; Lounsbury's History of the English Language; Sweet's Anglo-Saxon Primer.

6. Study of modern Prose style, based upon masterpieces of best authors. Essays. Second semester, three times a week, Tuesday, Thursday, Saturday (Junior). Prof. ALLEN.

Genung's Rhetorical Analysis; Prose Authors.

Required for L. B., courses 1, 2, 3, 4, 5 and 6; for S. B., courses 1, 2, 3, 4 and 5; for A. B., courses 1, 2, 3 and 4.

ELECTIVE COURSES.

7 and 8. Anglo-Saxon Prose and Poetry. *First and second semesters*, two hours a week, Wednesday, Friday (Senior). Prof. ALLEN.

Sweet's Anglo-Saxon Reader; Earle's History of Anglo-Saxon Literature.

9. Middle English. *Second semester*, two hours a week, Wednesday, Friday (Senior). Prof. ALLEN.

Morris and Skeat's Specimens of Early English, Part II.

10. Anglo-Saxon Grammar (Comparative). *Second semester*, two hours a week, Tuesday, Saturday (Senior). Prof. PENN.

11. Gothic. *Second semester*, two hours a week (Senior). Prof. WAUCHOPE.

Wright's Gothic Primer. For reference: Braune and Baig.

12. Anglo-French. *First semester*, two hours a week. Knowledge of Latin and French necessary. Prof. ALLEN.

13. Chaucer. *First semester*, two hours a week. Prof. ALLEN.

14. Shakspeare. *First semester*, two hours a week. Prof. PENN.

15. The Elizabethan Drama. *First semester*, two hours a week. Prof. WAUCHOPE. Thayer's Best Elizabethan Plays.

16. Principles of English Versification. One hour a week.
17. Course 5 (Lectures on the English Language) is open, as a Junior elective, in the A. B. course. First semester.
18. Course 6 (Modern Prose) is open, as a Junior elective, in the A. B. and S. B. courses. Second semester.

Seminaries in literature will be in charge of the several instructors.

A Post-graduate course is provided for students desiring to carry on further their studies in English. The following will indicate in a general way the work done: Beowulf (Harrison and Sharp); Cynewulf (Kent); Cook's Siever's A.-S. Grammar; Ten Brink's Literature; Skeat's Principles of English Etymology.

[Courses preparatory to the Freshman class are outlined in the schedule of preparatory work. They embrace Advanced Grammar, Composition and Rhetoric, and American Literature.]

A special medal, known as the "McAnally medal," is offered for the best essay, thesis or poem by members of the Senior class competing under certain rules laid down by founder of the prize. Subject for 1832-93: "Contemporary Fiction."

Enrollment of students in the English department, 1891-92: Collegiate (required and elective), 251; Preparatory, 284; in College of Agriculture, 81; in Teachers' course, 13.

II. Department of Latin Language and Literature.

Professor JONES; Assistant-Professor BURHAM; J. F. PAXTON, Assistant.

The subjects taught in this department are the Latin Language and Literature, the Geography, Mythology, Antiquities and History of the Romans.

1. Sallust. *First Semester*, daily at 9 (Freshman).

Text-books: Herbermann's Sallust, Allen and Greenough's Grammar, Allen's Prose Composition, Allen's History of Rome.

2. Cicero (Orations). *Second Semester*, daily at 9 (Freshman).

Text-books: Allen and Greenough's Cicero, Allen and Greenough's Grammar, Allen's History of Rome.

The aim of the above courses is to give the student facility in reading Latin prose. Daily practice in sight-reading will be given during this year.

3. Virgil. *First Semester*, daily at 12 (Sophomore).

Text-books: Greenough's Virgil, Allen & Greenough's Grammar, Prose Composition.

Lectures on Mythology will be given by the instructor.

4. Horace. *Second Semester*, daily at 12 (Sophomore).

Text-books: Wickam's Horace, Kirkland's Horace, Allen & Greenough's Grammar, Prose Composition.

Lectures on Roman Literature will be given by the instructor.

5. Livy or Tacitus. *First Semester*; Tuesday, Thursday, Saturday at 10 (Junior).

Text-books: Lord's Livy, Hopkins' Tacitus, Allen & Greenough's Grammar, Tighe's Roman Constitution. This course involves minute study of syntax and some attention to Latin philology.

All of the above courses are required of candidates for the A. B. degree, and all except 5 of candidates for L. B. degree.

ELECTIVE COURSES.

6. Cicero. Two hours a week, *first semester*. Prof. JONES.
7. Terence. Three hours a week, *second semester*. Prof. JONES.
8. Plantus. Three hours a week. *first semester*. Prof. JONES.
9. Syntax. A study of the Cases, Moods and Tenses. Remnants of Early Latin. Two hours a week, *second semester*. Prof. JONES.
10. Rapid reading of Latin prose. Two hours a week, *first semester*. Prof. BURNAM.
11. Rapid reading of Latin poetry. Three hours a week, *second semester*. Prof. BURNAM.
12. Roman Literature. Three hours a week, *first semester*. Prof. BURNAM.
13. Lectures on Roman Constitutional Law. Two hours a week, *second semester*. Prof. BURNAM.
14. Teachers' Course. This is intended for students who plan to engage in teaching. It is offered both semesters once a week. Hours of all elective courses to be arranged with the instructor.

Courses 6, 7, 8 and 9 are designed for such students as desire to study the historical development of Latin; Courses 10, 11, 12 and 13 are designed for those who desire to study the literature and antiquities.

PREPARATORY COURSE.

This course is intended for those students who are not prepared for the Freshman year (Course 1), and extends over two years.

First Year—Collar & Daniell's Beginner's Latin Book completed.

Second Year—Cæsar (De Bello Gallico), books II, III, IV, V, I.

Text-books: Kelsey's Cæsar, Allen's Prose Composition, Allen & Greenough's Grammar, Ginn's Classical Atlas.

The Roman pronunciation is used, and its adoption is urged upon all teachers preparing students for the University.

A prize is offered for competition in the Sophomore and Junior classes. It will be awarded in 1892-93 to the student who makes the best translation into Latin of Chap. I, McCarthy's History of Our Own Times, through the words "his early promise." At the Commencement of 1892 this prize was awarded to Mr. J. E. Goodrich.

Enrollment of students in the Latin department: in required courses, 285; in elective, 17.

III. Department of Greek Language and Literature.

PROFESSOR MANLY; Associate, PROFESSOR MILLER.

REQUIRED COURSES.

1. Xenophon: *First Semester*, Tuesday, Wednesday, Friday, Saturday, at 11. (Kelsey's Xenophon's Anabasis, Goodwin's Greek Grammar, Woodruff's Greek Prose Composition, Cox's History of Greece (Students' series), Kiepert's or Ginn's Classical Atlas.)
 2. Herodotus: *Second Semester*, Tuesday, Wednesday, Friday, Saturday, at 11. (Herodotus, Book VII, Seemann's Mythology, Goodwin's Greek Grammar, Woodruff's Greek Prose Composition.)
 3. Homer: *First Semester*, daily at 9. (Merry's Odyssey XIII-XXIV, Autenrieth's Homeric Dictionary, Jebb's Introduction to Homer.)
 4. Demosthenes: *Second Semester*, daily at 9 and one extra hour. (Demosthenes Philippics and Olynthiaca, Goodwin's Greek Moods and Tenses, Jevon's Greek Literature)
 5. Greek Tragedy: *First Semester*, Tuesday, Thursday, Saturday, at 12. Plays of Æschylus, Sophocles or Euripides will be read, and study made of the Greek theatre.
 6. Greek Comedy: *Second Semester*, Tuesday, Thursday, Saturday, at 12. Study of comic presentation and reading of plays of Aristophanes.
- Courses 1 and 2 (Freshman), 3 and 4 (Sophomore), 5 and 6 (Junior), are required for the A. B. degree; Courses 7 and 8 (Junior) are required for the L. B. degree.

ELECTIVE COURSES.

7. Private Life of the Greeks. *First Semester*, Tuesday, Thursday, Saturday at 11. Prof. MANLY. Lectures illustrated by maps, charts and stereopticon views.
 8. Public Life of the Greeks. *Second Semester*, Wednesday, Thursday, Friday at 11. Prof. MANLY. Lectures illustrated by maps, charts and stereopticon views.
 9. The Idylls of Theocritus. *Second Semester*, two hours a week. Prof. MILLER. Lectures and recitations. Hours to be arranged with the instructor.
 10. Teachers' Course. Two semesters, one hour a week. Prof. MANLY. This course will be conducted on the normal plan, and special attention will be given to methods of teaching preparatory Greek. Hour to be arranged with instructor.
 11. New Testament. One semester, two hours a week. Prof. MANLY. Selections from the New Testament will be read and compared with Attic Greek. Hours to be arranged with instructor.
 12. Reading at Sight. Two hours a week to count as one. Prof. MANLY. Hours to be arranged with instructor.
 13. Lectures on the History of Greek Sculpture. Three hours a week, both semesters. Prof. MILLER.
 14. Historical Development of Greek Architecture. Two hours a week, *first semester*. Prof. MILLER.
- Preparatory Course. Two semesters daily at 9. This course is intended for students not prepared to enter the Freshman Class.
- J. W. White's "Beginners' Greek Book," Xenophon's Anabasis, Goodwin's Greek Grammar, Cox's History of Greece, Kiepert's or Ginn's Classical Atlas.
- Enrollment for 1891-92, 100.

IV. Department of Modern Languages.

Professor BLACKWELL—Assistant-Professor HOFFMAN.

Tutors—R. F. BRYAN, G. L. BROWN, H. J. GERLING.

Besides the study of several grammars, classes in German in 1891-92 practiced composition, received lectures on German literature, and read Schiller's "Maria Stuart," "der gefrorene Kuss," Lessing's "Minna von Barnhelm," Goethe's "Egmont," Faust, Pt. I, part of "Wahrheit und Dichtung," and Lessing's "Laokoon." Classes in French read Feuillet's "Roman d'un Jeune Homme Pauvre," Merimee's "Colomba," Souvestre's "Philosophe sous les Toits," Victor Hugo's "Hernani" and "Ruy Blas," Moliere's "Bourgeois Gentilhomme," Lyrical Selections from Lamartine, Beranger and other poets, DeMusset's "On ne badine pas avec l'Amour" and "Fantasio," and Gautier's "Voyage in Espagne," grammar and composition.

Courses of instruction are outlined as follows:

GERMAN.

1. Whitney's Brief German Grammar, Elementary Reader.
2. Whitney's Revised Grammar; Reader completed; Blackwell's Manual of Prefixes and Suffixes, weekly recitations.
3. Grammar, weekly recitations; Literary and Scientific Prose Readings; Manual completed; Studies in Synonyms.
4. Prose composition daily; Heine's "Harzreise," "Goetz von Berlichingen;" Study of Style; lectures on Language and Literature weekly.
Classes recite three times a week.

ELECTIVE COURSES IN GERMAN.

5. Egmont: Study of the Drama; The Laokoon.
6. Nathan der Weise; Themes; Schiller's Tell.
7. Faust: Themes.
8. Studies in Herder, Richter and Schiller; General Review.
Composition throughout the elective courses.
Equivalent work to the above courses will receive acknowledgment.
All elective studies to be timed at the convenience of the professor and students.
The Post-graduate course will embrace studies in Middle High German (Paul's "Mittel-hochdeutsche Grammatik, der arme Heinrich, the Nibelungenlied"), Old High German, and Comparative Teutonic Philology.

FRENCH.

1. Whitney's Brief Grammar and Reader.
2. Grammar and Reader completed; "Tableaux de la Revolution Francaise;" Composition.
3. "Le Roman d'un Jeune Homme Pauvre," by Octave Feuillet; "Le Romantisme Francaise;" Composition.
4. Composition; Study of Synonyms; De Musset; Moliere's "Bourgeois Gentilhomme;" Lectures on the Language and Literature.
Classes meet three times a week.

ELECTIVE COURSES.

5. "Eugenie Grandet," by Balzac; Selections from Moliere; Study of Style; Themes.

6. "Numa Roumestan," by Daudet, selections; Lamartine's Poems, selections; "Ruy Blas," by Victor Hugo; Study of Prosody; Themes.

7. Selections from "Les Miserables" of Victor Hugo; "Les Trois Mousquetaires," by A. Dumas: Themes.

8. Studies in Racine and Corneille, and the Drama; General Review of the work. Composition throughout the elective courses.

Equivalent work will receive acknowledgment.

All elective studies to be timed at the convenience of the professors and students.

Post-graduate studies embrace work in Old French, the "Langue d'Oïl," Provençal (Bartsch, Burguy, Kitchin), and Romance Philology (Diez, Meyer, French editions of both preferred).

ELECTIVE STUDIES.

SPANISH.

1. Manning's Grammar and "Lecturas de Clase," by Knapp.

2. Grammar continued, Knapp's Readings.

3. Gaspar's "Castigo de Dios," Selections from Don Quixote.

4. Lope de Vega's "Dorotea," selections from the Cancioneros, History of Spanish Literature (Ticknor).

Post-graduate studies will include studies of Calderon, "Garcilasso de la Vega," and attention to Catalanian and Valencian Literature.

These studies at the time and convenience of the professor.

A class was formed in 1891-92, and continued throughout the year.

ITALIAN.

1. Grandgent's Grammar, Easy Readings.

2. "Il Marco di Visconte," Fanfani's Synonyms.

3. Calogero's "Novelle Calebresi," Tasso's "Girusalemme Liberata," four cantos.

4. The Prince of Machiavelli, selections from the Purgatorio of Dante, history of the Literature.

Post-graduate studies will include studies in Ariosto, Petrarch (Le Rime and Le Lettere, especially), Dante, and modern poets.

These studies at the time and convenience of the professor.

A class pursued this work in 1891-92.

PORTUGUESE.

1. Cabano's Grammar, Historio do Brazil (Ginn).

Four semesters in Spanish, or Italian or French, necessary for entrance.

At the time and convenience of the professor.

No class in this work in 1891-92.

RUSSIAN.

1. Reiff's Grammar, Riola's Reader.

2. Reiff and Riola continued, Vogue's "Russkiye Pisateli."

3. Selections from Tolstoi's "Volna i Mir."

Candidates must have had four semesters in German, or Latin, or Greek.

At the time and convenience of the professor

Course offered in 1891-92, and applied for by two students, one of whom has learned to read the language.

Enrollment of students in German and French, 250; in Spanish and Italian, 18.

V. Department of Semitic Languages.

Professor BLACKWELL.

There was one class in Hebrew in 1891-92, and it continued the work through the year, reading in Genesis.

HEBREW.

1. Harper's Method and Manual.
2. Harper's Elements, Books of Ruth and Esther.
3. Harper's Syntax, The Psalms, Driver's Tenses, Ancient History.
4. Study of Isaiah (Alexander, Cheyne and Delitzsch), Wickes' Accent.

Post-graduate studies will include post-biblical literature, the Pirke Aboth from the Mishna (Taylor), and the Pentateuchal Question.

(Delitzsch, Dillman, Wellhausen, Kuenen, Bissell, Harman, Harper, Green and others.)

ARAMAIC.

1. Brown's Grammar and Reader.
 2. The Targums.
- Two semesters of Hebrew are necessary for entrance.
No class in 1891-92.

SYRIAC.

1. Nestle's Grammatik and Chrestomathie.
 2. Bagster's Peshitto New Testament and Lexicon.
- Two semesters in Hebrew necessary for entrance.
No class in 1891-92.

ARABIC.

1. Lansing's Grammar and Chrestomathy.
 2. Wright's Reading Lessons, Wortabet's Dictionary, first two surahs of the Koran.
- Two semesters of Hebrew necessary for entrance.
No class in 1891-92.
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VI. Department of Sanskrit.

Professor BLACKWELL.

1. Perry's Sanskrit Primer, Whitney's Grammar.
 2. Story of Nala, Hitopadeca, Dharmacastro.
 3. Hymns to Agni and Varuna, and the Funeral Hymns of the Rigveda, Brahmanas.
- Three students enrolled in 1891-92.

VII. Department of Comparative Philology.

Professor _____

VIII. Department of Political Science.

FREDERICK C. HICKS, Professor.

First Semester—

1. History of England. Text-book. Wednesday, Friday, 3 p. m.
3. Ancient and Modern Governments. Text-book. Wednesday, Friday, 2 p. m.
5. Political Philosophy. Lectures. Tuesday, Thursday, Saturday, 2 p. m.
7. Problems in Economics (Social). Lectures and Topics. Tuesday, Thursday, Saturday, 3 p. m. Course 7 must be preceded by Course 6.
9. Theory of Jurisprudence. Lectures. Wednesday, Friday, 4 p. m. Course 9 must be accompanied or preceded by Course 5.
11. Seminary in History. Topics. Thursday, Saturday, 4 p. m. Course 11 must be preceded by Course 5 and one other course in Political Science.

Second Semester—

2. History of the United States (Political). Text-book. Tuesday, Thursday, Saturday, 3 p. m.
4. Political Institutions of the United States. Text-book. Wednesday, Friday, 3 p. m.
6. Theory of Economics. Lectures. Tuesday, Thursday, Saturday, 12 m. Course 6 must be preceded by Course 5.
8. Problems in Economics (Industrial). Lectures and Topics. Tuesday, Thursday, Saturday, 2 p. m. Course 8 must be accompanied or preceded by Course 6.
10. Theory of Finance. Lectures. Wednesday, Friday, 12 m. Course 10 must be preceded by Course 5.
12. Seminary in Economics. Topics. Wednesday, Friday, 2 p. m. Course 12 must be preceded by Course 7 or 8.
13. Constitutional and International Law. Hours to be arranged. Open only to Seniors who have taken Course 9.

REQUIRED WORK.

COURSE 1—History of England is required of students in the L. B. and S. B. courses during the first semester of the Sophomore year.

COURSE 2—History of the United States is required of students in the L. B. course during the second semester of the Sophomore year.

COURSE 3—Ancient and Modern Governments is required of students in the A. B. and L. B. courses during the first semester of the Sophomore year.

COURSE 5—Political Philosophy is required of students in the L. B. course during the first semester of the Junior year.

COURSE 6—Theory of Economics is required of students in the L. B. course during the second semester of the Junior year.

IX. Department of Mental and Moral Philosophy.

Professor BLANTON.

First Semester—

Psychology. Recitations and Lectures. Text-book: Murray's Hand book.

Second Semester—

Logic. Recitations and Lectures. Text-book: Jevons.

Ethics. Recitations and Lectures. Text-book: Murray.

A course of reading in the history of philosophy will be required.

X. Department of Mathematics and Astronomy.

W. B. SMITH, Professor. W. C. TINDALL, Associate Professor.

MILTON UPDEGRAFF, Assistant Professor and Director of Observatory.

(Arabic numerals in parenthesis indicate the enrollment for 1891-92.)

The following courses are offered:

1 and 2. Solid Geometry, Plane and Spherical Trigonometry. Thrice weekly, both semesters, Freshman.—UPDEGRAFF. (71)

Texts: Hayward's solid Geometry, Smith's Clew to Trigonometry.

3 and 4. Advanced Algebra. Twice weekly, both semesters, Freshman.—TINDALL. (33)

Text: Smith's Treatise on Algebra, from Chapter XIX.

5 and 6. Co-ordinate Geometry and Determinants. Thrice weekly, *first semester*; four times weekly, *second semester*, Sophomore.—SMITH or TINDALL. (42, 22)

Texts: Smith's Co-ordinate Geometry, Muir's Determinants.

7 and 8. General Astronomy. Thrice weekly, both semesters, Junior.—UPDEGRAFF. (13)

Text: Young's General Astronomy.

Of the foregoing courses there are prescribed 1, 2 and 3 for the degrees of A. B. and L. B., and all but 7 for the degree of S. B.

ELECTIVES.

9 and 10. Infinitesimal Calculus (Double Course). Six times weekly, both semesters, Junior.—SMITH or TINDALL. (9)

Text: Greenhill's Calculus.

11 and 12. Higher Algebra. Theory of Equations and Quantics. Thrice weekly, both semesters, Junior.—TINDALL. (5)

Text: Burnside & Panton's Theory etc.

13 and 14. Solid Co-ordinate Geometry.—Thrice weekly, both semesters, Senior.—SMITH or TINDALL. (3)

Text: Frost's Solid Geometry.

15 and 16. Differential Equations.—Four times weekly, both semesters, Senior and Post graduate —SMITH. (5)

Text: Forsyth's Differential Equations.

17 and 18. Functions of Complex Argument, in particular Doubly Periodic Functions.—Four times weekly, both semesters, Post graduate.—SMITH. (4)

Text: Halphen's *Traite*, supplemented from Hermite and Weierstrass.

19. Mathematical Seminary (for orientation in various mathematical disciplines and for incitement to original research).—Twice weekly, first semester, Junior and Senior.—SMITH.

20. History of Mathematics.—Twice weekly, second semester, Junior and Senior.—SMITH.

21 and 22. Practical Astronomy.—Thrice weekly, both semesters, Junior.—UPDEGRAFF. (21 is required for the degree of C. E. and is open to students that have passed in Trigonometry.) (4)

Text: Greene's Spherical and Practical Astronomy.

22 presupposes one semester's Calculus (9) and is elective.

23 and 24. Practical Astronomy.—Four times weekly, both semesters, Senior.—UPDEGRAFF. (1)

25. Least Squares.—Thrice weekly, second semester, Junior. Required for the degree of C. E.—UPDEGRAFF. (2)

Text: Merriman's Least Squares.

26 and 27. Rest and Motion.—Four times weekly, both semesters, Post-graduate.—SMITH. (2)

Text: Budde's *Allgemeine Mechanik*.

Courses 11 and 12 are continuations of 3 and 4; Courses 13 and 14 of 5 and 6; Courses 9 and 10 are continued in 15 and 16, which may themselves be extended on demand into the Theories of Linear and Partial Differential Equations; and the series is especially recommended to students of Engineering. Courses 15-20 are designed for teachers and special students of Mathematics

The general condition of admission to any course is knowledge presumably adequate to profitable pursuit of the subject in hand. For admission to the Freshman classes there is required the equivalent of the Preparatory Courses outlined below, and examination for such admission will be based upon the texts there mentioned, viz.: Smith's Elementary Algebra, Smith's Treatise on Algebra (to chapter XIX), and Smith's Modern Geometry—all published by Macmillan & Co.

PREPARATORY COURSES.

These extend through two years, as follows:

Ia. Elementary Algebra (Smith's, 1-240), thrice weekly, both semesters. (165)

Ib. Elementary Geometry (Smith's Modern Geometry, to Areas), twice weekly, both semesters. (191)

IIa. Mediate Algebra (Smith's Elementary completed, Smith's Treatise, selections, to chapter XIX, p. 273), thrice weekly, both semesters. (103)

IIb. Mediate Geometry (Smith's Modern Geometry, completed), twice weekly, both semesters. (93)

Candidates for admission to any of these courses must pass a satisfactory examination on Arithmetic, through percentage. The classes are taught by instructors chosen with careful regard to mathematical attainment and aptitude for teaching.

Total enrollment of individuals, 894.

THE OBSERVATORY.

MILTON UPDEGRAFF, Director.

The Observatory is pleasantly situated on the campus, and is equipped with the following instruments:

(1) A 7½-inch refracting Equatorial Telescope, by MERZ UND MAHLER, of Munich, furnished with a driving clock, position flar micrometer, two spectroscopes, by Fauth & Co., eye-pieces and adapters.

(2) A $2\frac{1}{5}$ -inch Transit Instrument, by BRUNNER, of Paris, with a divided circle in declination read by two verniers to 3 seconds of arc.

(3) An Altitude and Azimuth Instrument, by BLUNT, of New York, aperture 2 inches, and also a Sextant by the same maker.

(4) A Sidereal Clock by FAUTH & Co., of Washington, a Mean Time Clock by GREGG & RUPP, of New York, and a Sidereal Break-circuit Chronometer, by WM. BOND & SON, of Boston.

(5) A Chronograph, by FAUTH & Co., Theodolite, by GREGG & RUPP, 20-inch Celestial Globe, Barometer and Thermometers, by H. J. GREEN, of New York, electrical apparatus, and other smaller instruments.

The clocks and instruments are connected with each other by means of insulated copper wire for the transmission of electric signals, and a double line of telegraph wire connects the Observatory with the Western Union Telegraph office in Columbia for the transmission of time signals. Both clocks and instruments are mounted on piers of solid masonry, isolated from the floor and walls of the building. The dome of the equatorial telescope is $17\frac{1}{2}$ feet in diameter, and is made of wood covered with sheet-iron. It is supported by an octagonal brick tower at the east end of the building, and revolves on wheels that run on a cast-iron track. The telescope is mounted on a wooden stand which rests on a brick pier. A portion of the west end of the building is surmounted by a cone 14 feet in diameter, which revolves on cannon balls and shelters the altitude and azimuth instrument. The transit room has three slits in the walls and roof for observation, and contains the transit instrument, chronograph and sidereal clock. An office 15×18 and a library room 15×12 with basement 15×30 have been recently erected adjoining the west end of the Observatory building.

The course in Practical Astronomy comprises instruction in the theory of instruments, in the solution of the more important problems of Spherical Astronomy, in the use of portable instruments for the determination of Time, Latitude, Longitude and Azimuth, and also in the computation of predictions of eclipses of the sun and moon and transits of the inferior planets. Whenever possible, observations of these phenomena are made by the student, under the supervision of the professor, and thus the accuracy of both computation and observation is tested. When sufficiently advanced, students may undertake a series of micrometric observations with the equatorial telescope, and also the mathematical calculations involved in the reduction of the same. Instruction in the determination of the orbits of comets and planets will be given to students who are fitted to undertake this class of work.

XI. Department of Physics.

JOSEPH G. NORWOOD, Professor Emeritus. MILLARD L. LIPSCOMB, Professor. WILLIAM SHRAEDER, Assistant Professor.

The instruction in Physics consists of recitations, lectures, lecture-room experiments and laboratory work, and comprises the following courses:

1. Recitations and lectures three times per week during the first semester of the second preparatory year, attended by all students, in which the whole subject of physics is discussed in an elementary manner and fully illustrated by experiments.

2. Recitations and lectures four times per week in the second semester of the Sophomore year. Subjects: Mechanics, Hydrostatics, Pneumatics and Electricity and Magnetism. Requisite for admission, grades in all mathematics up to the first semester of the Sophomore year. Required in the Scientific and Engineering Courses, elective in the A. B. and L. B. Courses.

3. Recitations and lectures twice per week. Subject: Sound and Light. Requisite for admission, same as in Course 2. Required in Scientific and Engineering Courses, elective in A. B. and L. B. Courses.

4. Laboratory. Two hours a week through the first semester of the Junior year. Requisite for admission, a grade in Course 3. Required in the Scientific and Engineering Courses, elective in the A. B. and L. B. Courses.

5. Recitations and lectures. Subject: Heat. Requisite for admission, same as Course 2. Required in Scientific and Engineering Courses, elective in A. B. and L. B. Courses.

6. Laboratory. Four times a week through the second semester of the Junior year. For courses in Physics in the Engineering Courses, see Engineering.

ELECTIVES.

To students in the A. B. and L. B. courses is offered the Physics laid down in the Sophomore and Junior years of the Scientific course.

To all Academic students the following courses are offered:

JUNIOR.

7. Laboratory. Two hours a week, first semester.

8. Special instruction in the construction and manipulation of apparatus for lecture table experiments. This course is especially intended for teachers. Three hours a week, first semester.

9. Electricity and Magnetism. Four hours a week, second semester.

SENIOR.

10. Mechanics. Four hours a week, first semester.

11. Laboratory. One hour a week, first semester.

12. Mechanical Theory of Heat (Clausius) or Thermodynamics. Five hours a week, second semester.

13. Special Laboratory work.

LABORATORY.

In addition to the instruction received in common with the other classes, the students in the scientific and engineering courses are required to take two hours per week during the first semester of the Junior year, and four hours per week during the second semester of the Junior year, in the Physical Laboratory.

The work consists of precise weighings, determinations of densities, verification of the laws of elasticity and capillarity, determinations of the intensity of gravity, barometric readings and reductions, magnetic declination and inclination, horizontal intensity of the earth's magnetism, variation of magnetic intensity, magnetic moment, temperature co-efficient of magnets, measurement of resistance of conductors and batteries, electro-motive forces, potentials, capacities, strength of currents, calibration of rheostats, verification of the laws of sound and radiant heat, determinations of specific and latent heats, expansions and vapor densities, radii of curvature of lenses and mirrors, focal lengths, wave lengths, indices of refraction, angles of crystals and verification of the laws of diffraction and interference.

The students study spectrum analysis, learn the use of the microscope, and in polarized light determine the rotation of the plane of polarization, percentage of sugar in solutions by means of saccharimeter, experiment with double refracting bodies, distinguish between positive and negative crystals, determine angle of optical axes of crystals, etc.

Advanced laboratory work and reading courses in Physics will be given to suit the individual needs of special students.

PHYSICAL APPARATUS.

The instrumental equipment of the Department of Physics was almost entirely destroyed by the fire of January 9, 1892, but is being rapidly replaced, and will consist of apparatus especially selected for accurate measurements, principally from the following renowned makers: Queen, Ritchie, Becker and Green of this country; Browning, Patterson and Cooper, and Elliott Bros., London; Hartmann and Braun, and Edelmann, Germany; Dubosq, Demeritens and Breguet, and Koenig, Paris; Societe Genevoise, Geneva.

A fee of five dollars per semester is charged for laboratory instruction.

Text-books and Books of Reference—Deschanel's Natural Philosophy; Ganot's Physics; Maxwell's Theory of Heat; Thompson's Lessons in Electricity; Daniell's Principles of Physics; Glazebrook and Shaw's Practical Physics; Kohlrausch's Physical Measurements; Pickering's Physical Manipulations; Trowbridge's New Physics; Stewart and Gee's Practical Physics; Everett's Physical Constants; Kempe's Hand-book of Electrical Testing; Ayrton's Practical Electricity; Thompson's Dynamo-Electric Machinery; Kapp's Transmission of Electrical Energy; Gray's Absolute Measurement; Maxwell's Electricity and Magnetism; Wiedemann's Elektricitat; Houston's Dictionary of Electrical Terms, Phrases, etc.; Mascart and Joubert's Electricity and Magnetism; Watson and Burbury's Mathematical Electricity and Magnetism; Stokes' Mathematical and Physical Papers; Ball's Experimental Mechanics; Goodeve's Principles of Mechanics; Rayleigh's Theory of Sound; Gore's Electro-Metallurgy; Schellen's Spectralanalyse; Pope's Telegraphy; Fiske's Electrical Engineering; Preece and Maier's Telephone; Cumming's Theory of Electricity.

THE PHYSICAL SEMINAR.

The object of this society is to develop general scientific culture, and at the same time to keep abreast with the current work and thought in special branches of science and engineering.

Meetings are held once a month, at which papers are read, giving a review of the current scientific and engineering periodicals, with explanation and discussion of the most important articles. Special historical sketches are also read from time to time. The attendance at and participation in these meetings is voluntary, but judging from the interest manifested by the students during the past year, this society is doing a useful work.

Enrollment of students, 1891-92, 230.

XII. Department of Chemistry.

Professor SCHWEITZER.
 FREDERICK HOMBURG, Assistant Professor.
 SILAS DINSMOOR, Assistant.

I. ARRANGEMENT OF CLASSES BY SEMESTERS.

First Semester—

- 11-12 (4 hours). Phenomenal Chemistry.
 4 hours Laboratory work, divided according to plan into
 3 hours Young Chemist,
 5 hours Qualitative Analysis.

ELECTIVES.

- 3 hours Applied Chemistry.
 3 hours Organic Chemistry.
 3 hours Quantitative Analysis.

Second Semester—

- 11-12 (4 hours). Phenomenal Chemistry.
 4 hours Laboratory work, divided according to plan into
 3 hours Young Chemist.
 5 hours Qualitative Analysis.
- 10-11 (3 hours). Rational Chemistry.

ELECTIVES.

- 3 hours Agricultural Chemistry.
 3 hours Physiological Chemistry and Toxicology.
 3 hours Quantitative Analysis.

II. SYNOPSIS OF WORK.

1. *Phenomenal Chemistry*, 4 hours, an elementary course of instruction, consisting in experimental demonstrations of the facts of the science, and embracing both the metalloids and the more common of the metals; calculations of quantities by weight and volume, of changes in the volume of gases by changes of temperature and pressure, writing of reactions and establishing of formulas upon proper physical facts, accompany the work. (Ira Remsen: An Introduction to the study of chemistry.)

2. *Chemical Laboratory*, 8 hours, divided as indicated above between work in which the use of apparatus and the art of making experiments are taught—the experiments being simple and illustrative of the properties of the more common of the elements and their compounds (Appleton: The Young Chemist); and practice in qualitative analysis, separating and detecting all of the more common bases and acids in simple compounds and in complex mixtures. (Curtman: Lessons in qualitative and volumetric chemical analysis.)

3. *Rational Chemistry*, 3 hours; the principles of Chemical Philosophy, with a review of inorganic chemistry. (Cooke: Principles of Chemical Philosophy, Part I.)

ELECTIVES.

4. *Applied Chemistry*, 3 hours; Air, respiration, vitiated air and ventilation; infection, contagion, germ theory of disease. Water, potable water, hard and soft; impurities in it, such as lead and sewage matter, and their effects upon health and life; mineral and other waters. Food, composition and general properties; bread, meat, milk, sugar; preservation of food, and food adulterations. *Illuminants, Disinfectants, Antiseptics.*

5. *Organic Chemistry*, 3 hours; a general view of subject; detailed treatment of monatomic alcohols, acids and derivatives; aromatic compounds; compound ammonias, alkaloids. (Ira Remsen: An introduction to the study of the compounds of carbon.

6. *Agricultural Chemistry*, 3 hours; general introduction; functions of the plant, including production, conversion, transportation, deposition of organic matter; physiological structure of the cell; respiration; the green cell an apparatus for doing work dependent upon light and heat; nitrogenous constituents of the plant and their relation to free and combined nitrogen; mineral constituents; membranous diffusion; assimilation; conditions of vegetation.

Soil, its formation, composition, alteration by mechanical, chemical, biological agencies; its relation to light, heat and moisture.

Manures, natural and artificial; their composition, application, value.

7. *Physiological Chemistry and Toxicology*, 3 hours; general introduction; constituents of the body; inorganic, histogenic and products of retrogressive metamorphosis; blood and related fluids; milk and other secretions; urine, healthy and pathological.

Poisons, their classification, description, recognition; action of poisons; their detection and isolation in judicial investigations.

8. *Laboratory work*, twice 3 hours; quantitative analysis, as may be determined upon.

Number of students in this department during the scholastic year just ending, 344.

XIII. Department of Geology and Mineralogy.

Professor BROADHEAD; W. W. CLENDENIN, Assistant Professor; M. H. LOCKWOOD, Assistant.

MINERALOGY AND LITHOLOGY.

Students in Science and Engineering courses are required to take the course in Mineralogy and Lithology. The time occupied may be found in the schedule. One afternoon each week is devoted to Laboratory work.

Students in Arts and Letters may elect the course in Mineralogy.

In Physical Mineralogy, students will also receive instruction in Crystallography, including the measuring of angles of crystals, their physical characters, such as H., Sp. Grav., polarized light, etc.

In the study of minerals the most important will be considered, including the rock-making species (*a*), chief ores (*b*), the gems (*c*), and those of economic value (*d*).

The course of Lithology embraces the study of the composition, structure and origin of the most important rocks.

To students who elect special work in Mineralogy and Lithology will be furnished facilities for work in Mathematical Crystallography and optical investigations of minerals; also a systematic and comprehensive course in Mineralogy.

Fees to cover use of apparatus and material will be charged.

For admission into class in Mineralogy students must have taken a Course in Chemistry.

PHYSICAL AND ECONOMIC GEOLOGY AND MINERALOGY.

Instruction in this course will be given to the Agricultural and Engineering Students. The instruction will be chiefly by lectures upon Economic Geology and Mineralogy, Lithology, Physical Geography and Geological Surveying, embracing the study of build-

ing materials, decomposition of rocks and production of soil; useful minerals, their occurrence in veins and beds, coal deposits, useful mineral substances, and surface Geology and its application to Engineering and Agriculture.

Text-book: Williams' Applied Geology.

The rich mineral resources of Missouri will be freely discussed, and its Geology often referred to.

Advanced students in Geology will devote a large portion of their time to the study of Palæontology and the determination of fossils, with occasional practice in Field Geology. The course in Palæontology will be mainly by lectures and the study of fossils.

To students who elect a special course, opportunity for field work will be given during both semesters.

Students in Geology are expected to have previously studied Physical Geography, Zoology and Chemistry. The course in Physical Geography is quite thorough.

Text-book: Appleton's Physical Geography.

Text-book for Geology: Le Conte's Elements.

Text-book for Mineralogy: Dana. Books of reference, Dana's Geology.

The Geology of Missouri will be often discussed and its structure fully explained.

Books of reference: Missouri State Geological Reports.

ELECTIVE COURSES.

Full opportunity will be given students to continue the course in Mineralogy for an additional semester, or longer, if so desired. This will include—

- A. 1. Physical Mineralogy, Crystallography and Physical Properties of Minerals.
2. Laboratory work relating to the above.
- B. Descriptive and Determinative Mineralogy, with Laboratory work.
- C. Lithology, with such Laboratory work as we are prepared for.
- D. Discussion of Ores, Mines and Mining.

To students who have already taken a semester's work in Mineralogy, the Elective course will consist of studies of additional minerals. As far as practicable they can add microscopical, as well as macroscopical, studies of both minerals and rocks.

The following is a general statement of the character of the regular course, as well as the

ELECTIVE COURSE IN GEOLOGY.

Students in Arts and Letters may elect the course in Geology. Full opportunity will be given students to continue the course in Geology and Palæontology for an additional session, and to take also additional field work.

First Semester:

Physiographic and Lithologic Geology (one week).

Dynamical and Structural Geology.

Occasional Geologic excursions.

Applied (Economic) Geology.

Missouri Ores.

Study of Fossils.

Second Semester:

Historic Geology and Palæontology, with Laboratory and Field work.

The course in Geology includes the form and features of the earth, its physical changes due to atmospheric agents and to temperature, trend of mountain ranges, erosion and transportation of sediments.

Lithological Geology—Definition of minerals and rocks, classification of rocks.

Dynamical Geology—Glaciers, drift, chemical agents, formation of caves, deposits in springs, salt lakes, alkaline lakes, organic agencies, formations of peat, coal, iron ore, coral reefs; volcanoes, earthquakes, elevation and depression of earth's surface, mountain making.

Structural Geology—General form of the earth, its crust, continental form, stratified rocks, how formed, how changed; folds, faults, dip, cleavage, etc.; structures common to all rocks, mineral veins, metamorphism, igneous rocks.

Economic Geology—Substances used in the arts, building stones, limes, clays, fuels, minerals, ores.

Classification of soils—how formed and reclaimed; fertilizers; water supply; Missouri ores described, their occurrence, distribution; related minerals and value.

HISTORIC GEOLOGY AND PALÆONTOLOGY.

Classification of strata and their distribution, as related to Missouri; use of fossils and how formed; description of chief palæozoic forms of life, their advent, culmination, decline or extinction; carboniferous flora and formation of coal, and area of coal fields; animal life of each age; age of various mountain systems, how and when formed; Appalachian, Alpine, Ozark uplift.

Geological excursions when practicable.

Students who have already taken the S. B. course in Geology may supplement their work by additional studies in Historic Geology and Palæontology, including a determination of characteristic fossils; the formation and relative age of the various mountain systems; the whole supplemented by Lectures on Economic and Areal Geology.

Total number of students in the Department for 1891-92, 101.

XIV. Department of Biology.

GEO. D. PURINTON, Professor; W. R. DODSON, Assistant Professor.

The School of Biology includes—A, Botany, and B, Zoology.

A. BOTANY.

All students in the Preparatory Department are required to take Elementary Botany, and it is a requisite for admission from approved schools.

The Elementary Course includes a study of the fundamental principles of Vegetable Morphology, Plant Nutrition and Physiology, and introductory Plant Analysis.

The object of the course is to fit the student for the higher work in Botany, and to meet the requirements of the Normal Course in Biology as at present constituted in the University.

Text-books: Gray's School and Field Book of Botany, Purinton's Plant Analysis.

All students in the Scientific Course are required to take an advanced course in Botany during the spring term of the Freshman year. This course is also open to classical and literary students who may elect Science. Elective courses in Botany are also offered as shown in the appended table of elective studies.

B. ZOOLOGY.

Preparatory students, whether at the University or in the approved schools, are required to take one term in Elementary Zoology, accompanied by simple dissections in the Laboratory.

The Advanced Course for Scientific students begins with the commencement of the Freshman year and continues for one term, and is open alike to Classical and Literary students.

The course consists of lectures on Comparative Anatomy and Physiology, Histology, Embryology, the Mental Traits and Habits of the Lower Animals, and the Natural History of Man.

The course is accompanied by Laboratory practice with the microscope.

THE BIOLOGICAL LABORATORY.

The Biological Laboratory is supplied with Bausch and Lomb, Crouch, and Nachet microscopes, hand microtomes, a large and superior Thoma microtome, turn-tables, and various accessories for the critical histological study of vegetable tissues.

Science students are required to spend three afternoons of each week during the fall term of the Sophomore year in the Biological Laboratory, and the same course is open to students in the Classical and Literary Courses. The course includes a study of the minute anatomy of common phanerogams, and such ordinary cryptogams as are obtainable, and the microscopic fungi (rusts, smuts, moulds, and plant diseases in general).

For Medical students there is a course in Botany, embracing lectures in Plant Physiology and Nutrition, for three days in each week, extending through the fall term.

A course in Economic Botany for Engineering students is given upon two days in the week in the spring term.

A short two months' teachers' course in Botany and Zoology is given during the months of April and May.

ELECTIVES IN BIOLOGY.

Year.....	Course.....	Term.....	BOTANY.	Hours per week..	Year.....	Course.....	Term.....	ZOOLOGY.	Hours per week..
Junior.	A B	2	Cryptogamic Botany, or Bacteriology.....	3	Junior.	A B	1	Embryology.....	3
	B L	2	Cryptogamic Botany, or Bacteriology.....	3		L B	1	Embryology.....	3
	B S	2	Cryptogamic Botany, or Bacteriology.....	3		B S	1	Embryology.....	3
Senior.	A B	2	Economic Botany, or Vegetable Histology.....	3	Senior.	A B	1	Histology.....	3
	B L	2	Economic Botany, or Vegetable Histology.....	3		L B	1	Histology.....	3
	B S	2	Economic Botany, or Vegetable Histology.....	3		B S	1	Histology.....	3

Number of students in Biology during the year, 245; number of elective students in Biology during the year, 14.

THE MUSEUM.

Prof. PURINTON, Director and Curator.

Many of the most valuable collections of the old Museum were saved from the fire, others will be added, and in the immediate future a new and well-appointed Museum will be equipped.

THE NEW BUILDING.

The erection of a new and commodious building for the combined uses of the departments of Biology, Geology and the Museum has been ordered by the Board of Curators, and the work of building will be pushed with all possible dispatch, so that it is safe to anticipate its completion early in the coming year.

FEES AND DEPOSITS.

All students in advanced Zoology are required to pay a fee of \$2 for laboratory supplies, and make a deposit of \$8, to be returned, less breakage and damage, at the end of the year.

Elementary students in Zoology pay a fee of \$1, and students in the Biological Laboratory, \$3 per term.

YOUNG WOMEN.

Mrs. J. P. ROYALL in charge.

It is now twenty years since the University was opened alike to both sexes. The number of young women matriculating has increased steadily from year to year, and now exceeds one hundred. In this University, as in so many others, co-education has thoroughly approved itself, and is now passed quite beyond the stage of experiment. Large liberty is allowed in the selection of studies, but the same demands are met by all members of the same class, and the young women often distinguish themselves in the severest subjects. The lady in charge, whose chief duty it is to chaperone her wards, extends to them at all times the friendliest counsel and sympathy, and every other provision is made for their health, comfort, convenience and improvement. While no such educational advantages for young women are to be found outside of a University, the expense is even less than at ordinary schools for girls.

DRESS.

A simple uniform, becoming to all young women, is particularly desirable for students, as it not only economizes time, money and attention, but also identifies them, outwardly, with the University, while at the same time it abolishes in a measure the distinction of rich and poor. Accordingly the following has been adopted as the attire of matriculates for every day, regular and special holidays excepted:

A walking suit of black cloth with black trimmings. During the first month of the first semester and the last month of the second semester, a white basque or waist may be worn instead of a black one. The hat must be black, but its shape and material are left at discretion, except that ornamental trimmings, such as flowers and feathers, are forbidden. The rule of the Faculty, authorized by the Board of Curators, prescribing this uniform, is enforced by a penalty of ten demerits for each day's violation of it.

LITERARY SOCIETIES.

Of these, there are two, the Philalethean and the Thalian. Both have large membership, and afford the young women ample opportunity for culture in forms of discipline, such as the composition and presentation of addresses, orations, essays not especially provided for in the ordinary curricula, and of these opportunities they have not been slow to avail themselves.

In the new University buildings there will be made the most complete and perfect provision of society and study halls and other apartments for the young women.

A Young Woman's Christian Association recently organized with a large active and associate membership is doing an earnest and zealous work, sure to be crowned with beneficent results. All the professional departments of the University are open to young women.

SCHEME OF ACADEMIC STUDIES.

On the opposite page will be seen the scheme of Academic studies, divided into three groups or courses:

The Classical, leading to the degree of A. B.; the Literary, to the degree of L. B.; the Scientific, to the degree of S. B.

A slight examination will show that in the Classical course Latin and Greek predominate; in the Literary course, English and Modern Languages; in the Scientific course, Mathematics and the Sciences.

On reaching the Junior year, the candidate for a degree may choose such special lines of work as he finds suited to his taste and need. In the choice of electives, however, certain rules are laid down for his guidance.

REGULATIONS CONCERNING ELECTIVES.

1. In the Junior and Senior years, students in the classical or A. B. course *must elect twelve hours*—that is, three hours each semester—from the electives offered in Latin or in Greek, or Roman or Greek History, or Comparative Philology; those in the Literary or L. B. course *must elect twelve hours*—that is, three hours each semester—from the electives offered in English (Language or Literature), French, German, or History (Mediæval or Modern), or Political Science; those in the Scientific or S. B. course *must elect twelve hours*—that is, three hours each semester—from the electives offered in Mathematics or in Science. The student may give the entire twelve hours to one department, or divide the time as he may deem proper among the departments included in the prescribed limits.

2. The student may apply the remaining hours of elective work to any *academic* elective course (for which he is prepared) offered in the University, or to any regular academic study which is not required in that course which he is pursuing, or to a course in Pedagogy of not more than three hours a week, or to a course in Veterinary Science of not more than three hours a week.

By *academic* course is meant one not given in any of the professional schools of the University.

3. When the student has elected a subject which he has not studied before, he must pursue it for at least two semesters unless the subject is completed in less time.

4. Seniors and Juniors who have Sophomore or Freshman work (or both) to *make up*, *must* give such work precedence over elective work in making out their cards.

5. No student shall change an elective after two (2) weeks from the time of his enrollment in the class.

Any student not a candidate for a degree may take any subject taught in the University, in any class, for which, in the judgment of the head of department, he is sufficiently equipt.

CONDITIONS OF ADMISSION.

For admission to the Freshman class in the A. B. course are required: Two years of Latin (including Cæsar); one year of Greek; two years of Algebra and Plane Geometry. In English, elementary Rhetoric and Composition, and advanced Grammar. For other subjects, see the table of Preparatory courses, p. 58.

For admission to the Freshman class of the L. B. course, the conditions are the same as for the A. B. course, except that no Greek is required, but elementary Physics, U. S. History and American Literature instead.

For admission to the Freshman class of the S. B. course, the conditions are the same as for the L. B. course, except that German or French may be substituted for Latin.

SCHEME OF STUDIES.

A. B.	L. B.	S. B.
<i>Freshman, First Semester.</i>	<i>Freshman, First Semester.</i>	<i>Freshman, First Semester.</i>
I. Latin..... 5	I. Latin..... 5	†I or VI. Ger. or French, T., Th. S..... 3
III. Greek, T., W., F., S..... 4	IV. Comp. and Rhetoric, W., Th., F..... 3	II. Biology, T., W., F., S..... 4
IV. Comp. and Rhetoric, W., F..... 2	V. Geom. and Trig., T., Th., S..... 3	III. Chem., T., W., F., S..... 4
V. Geom. and Trig., T., Th., S..... 3	VI. Ger. or Fr., T., Th., S..... 3	IV. Comp. and Rhetoric, W., F..... 2
*Science, T., W., F., S..... 4	*Science, T., W., F., S..... 4	V. Geom. and Trig..... 5
<i>Freshman, Second Semester.</i>	<i>Freshman, Second Semester.</i>	<i>Freshman, Second Semester.</i>
I. Latin..... 5	I. Latin..... 5	I or VI. Ger. or French, T., Th. S..... 3
III. Greek, T., W., F., S..... 4	IV. Comp. and Rhetoric, W., Th., F..... 3	II. Biology, T., W., F., S..... 4
IV. Comp. and Rhetoric, W., F..... 2	V. Geom. and Trig., T., Th., S..... 3	III. Chem., T., W., F., S..... 4
V. Geom. and Trig., T., Th., S..... 3	VI. Ger. or Fr., T., Th., S..... 3	IV. Comp. and Rhetoric, W., F..... 2
*Science, T., W., F., S..... 4	*Science, T., W., F., S..... 4	V. Geom. and Trig..... 5
<i>Sophomore, First Semester.</i>	<i>Sophomore, First Semester.</i>	<i>Sophomore, First Semester.</i>
I. Greek..... 5	I. Ger. or Fr., T., Th., S..... 3	I. Ger. or Fr., T., Th., S..... 3
II. Anal. Geom., T., Th., S..... 3	II. Anal. Geom., T., Th., S..... 3	II. Anal. Geom., T., Th., S..... 3
III. English, T., Th., S..... 3	III. English, T., Th., S..... 3	III. English, T., Th., S..... 3
IV. Latin..... 5	IV. Latin..... 5	IV. Miner'gy, T., W., F., S..... 4
V. Pol. Science, W., F..... 2	V. Pol. Science, W., F..... 2	V. Biology, W., Th., F..... 3
	VI. Pol. Science, W., F..... 2	V. Pol. Science, W., F..... 2
<i>Sophomore, Second Semester.</i>	<i>Sophomore, Second Semester.</i>	<i>Sophomore, Second Semester.</i>
I. Greek..... 6	I. Ger. or Fr., T., Th., S..... 3	I. Ger. or Fr., T., Th., S..... 3
III. English, T., Th., S..... 3	III. English, T., Th., S..... 3	II. Physics, W., Th., F., S..... 4
IV. Latin..... 5	IV. Latin..... 5	III. English, T., Th., S..... 3
Math. or Science..... 4	V. Pol. Sci., W., Th., F..... 3	IV. Geology, T., W., Th., F..... 4
	Math. or Science..... 4	VI. Anal. Geom..... 4
<i>Junior, First Semester.</i>	<i>Junior, First Semester.</i>	<i>Junior, First Semester.</i>
I. French, T., Th., S..... 3	I or VI. French or Ger- man, T., Th., S..... 3	I or VI. French or Ger- man, T., Th., S..... 3
II. Latin, T., Th., S..... 3	II. English, W., Th., F..... 3	II. English, W., Th., F..... 3
IV. Greek, T., Th., S..... 3	III. Greek Antiquities, T., Th., S..... 3	III. Geology, T., Th., S..... 3
VI. German, T., Th., S..... 3	V. Pol. Sci., T., Th., S..... 3	V. Physics, T., Th., S..... 3
Elective..... 6	Elective..... 6	Elective..... 6
<i>Junior, Second Semester.</i>	<i>Junior, Second Semester.</i>	<i>Junior, Second Semester.</i>
I. French, T., Th., S..... 3	I or VI. French or Ger- man, T., Th., S..... 3	I or VI. French or Ger- man, T., Th., S..... 3
IV. Greek, W., Th., F..... 3	II. English, T., Th., S..... 3	II. Chemistry, T., Th., S..... 3
VI. German, T., Th., S..... 3	III. Greek Antiquities, W., Th., F..... 3	III. Astronomy, W., Th., F..... 3
Elective..... 9	IV. Pol. Sci., T., Th., S..... 3	V. Physics, T., Th., S..... 3
	Elective..... 6	Elective..... 6
<i>Senior, First Semester.</i>	<i>Senior, First Semester.</i>	<i>Senior, First Semester.</i>
I. Fr. or Ger., T., Th., S..... 3	I. French or German, T., Th., S..... 3	I. French or German, T., Th., S..... 3
II. †Ment. and Mor. Phil. 5	II. †Ment. and Mor. Phil. 5	II. †Ment. and Mor. Phil. 5
Elective..... 9	Elective..... 9	Elective..... 9
<i>Senior, Second Semester.</i>	<i>Senior, Second Semester.</i>	<i>Senior, Second Semester.</i>
I. Fr. or Ger., T., Th., S..... 3	I. French or German, T., Th., S..... 3	I. French or German, T., Th., S..... 3
II. †Ment. and Mor. Phil. 5	II. †Ment. and Mor. Phil. 5	II. †Ment. and Mor. Phil. 5
Elective..... 9	Elective..... 9	Elective..... 9

* Students may elect four hours of any scientific study or studies.

† If German be taken during the Freshman and Sophomore years, then French must be taken during the Junior and Senior years, and *vice versa*.

Military Science and Tactics may be taken in addition to the 18 hours of other subjects.

Military exercises held from 4:10 to 5:10 p. m., Wednesdays, Fridays and Saturdays.

‡ Pedagogics may be taken in place of Mental and Moral Philosophy. (See p. 84.)

PREPARATORY COURSES.

	A. B.	L. B.	S. B.
<i>First Term.</i>	I. Latin..... 5 II. Mathematics..... 5 III. Civil Government... 3 IV. Phys. and Hygiene. 4 V. Zoology..... 3 VII. Military Science or Book-keeping.... 3	I. Latin..... 5 II. Mathematics..... 5 III. Civil Government... 3 IV. Phys. and Hygiene. 4 VII. Military Science or Book-keeping.... 3	I. *Latin, Ger. or Fr... 5 II. Mathematics..... 5 III. Civil Government... 3 IV. Phys. and Hygiene. 4 VII. Military Science or Book-keeping.... 3
<i>Second Term.</i>	I. Mathematics..... 5 II. Botany..... 3 III. English..... 5 IV. Latin..... 5 VII. Military Science or Book-keeping.... 3	I. Mathematics..... 5 II. Botany..... 3 III. English..... 5 IV. Latin..... 5 VII. Military Science or Book-keeping.... 3	I. Mathematics..... 5 II. Botany..... 3 III. English..... 5 IV. Latin, Ger. or Fr... 5 VII. Military Science or Book-keeping.... 3

SECOND YEAR.

<i>First Term.</i>	I. Greek..... 5 II. Latin..... 5 IV. Mathematics..... 5 VI. English..... 5	I. English..... 5 II. Latin..... 5 III. Physics..... 3 IV. Mathematics..... 5 V. Zoology..... 3	I. English..... 5 II. Latin, Ger. or Fr... 5 III. Physics..... 3 IV. Mathematics..... 5 V. Zoology..... 3
<i>Second Term.</i>	I. Greek..... 5 II. Latin..... 5 III. Physical Geog'phy 5 IV. Mathematics..... 5	II. Latin..... 5 III. Physical Geography 5 IV. Mathematics..... 5 VI. U. S. History and Am. Literature... 5	II. Latin, Ger. or Fr... 5 III. Physical Geography 5 IV. Mathematics..... 5 VI. U. S. History and Am. Literature... 5

NOTE.—The Roman numerals denote the hour at which the class recites; the Arabic numerals denote the number of times per week.

*Those who elect two years of German or French in the preparatory science course, in place of Latin, will be excused from German or French in the University course, but must elect an equivalent, approved by the Faculty.

ADMISSION TO PREPARATORY COURSES.

For admission to the preparatory courses, the applicant must pass a satisfactory examination in English Grammar and Composition, and in Arithmetic (through percentage).

The full course of study pursued at the University as preparatory to the Freshman class is outlined above. This schedule of sub-Freshman work has been arranged in the belief that the majority of High schools and Academies in the State are prepared to adopt it. If any such school conform its own curriculum to any of these courses, such school shall, upon application to the President of the University, and on approval by the Faculty, be enrolled as "approved" in the University catalogue, and its certificate shall admit the bearer, without examination, to the Freshman class of such course or courses.

LIST OF APPROVED SCHOOLS.

The following schools have been approved, and their certificate will admit the bearer to the Freshman class without examination:

Name of school.	Location.	Name of school.	Location.
Bethany High School....	Bethany.....	Marshall High School ...	Marshall
California High School ...	California.	Maryville High School ...	Maryville
Cameron High School	Cameron	Memphis High School....	Memphis
Carrollton High School...	Carrollton	Mexico High School	Mexico
Chillicothe High School..	Chillicothe.	Missouri Military Acad ..	Mexico
Clinton Academy	Clinton.....	Mound City High School.	Mound City....
Clinton High School.....	Clinton	Mountain Grove Academy	Mountain Grove
Cooper Institute	Boonville	Neosho High School.....	Neosho.....
Craig High School	Craig	Nevada High School	Nevada.....
Ft. Smith High School....	Ft. Smith, Ark.	Odessa High School	Odessa
Hannibal High School....	Hannibal.....	Otterville College	Otterville.....
Higginsville High School.	Higginsville ...	Paris High School	Paris
Hooper Institute.....	Clarksburg	Perry Institute.....	Perry.....
Independence High School	Independence ...	Richmond High School...	Richmond.....
Jefferson City High School	Jefferson City...	Salem High School	Salem
Joplin High School.....	Joplin	Salisbury Academy.....	Salisbury
Kansas City High School.	Kansas City.....	Sedalia High School.....	Sedalia
Kemper Family School...	Boonville	St. Joseph High School ..	St. Joseph
Lamar High School	Lamar	St. Louis High School....	St. Louis.....
Louisiana High School...	Louisiana	Trenton High School	Trenton.....
Macon High School.....	Macon	Wentworth Academy ...	Lexington.....
Marmaduke Mil. Acad ...	Sweet Springs...	Windsor High School....	Windsor

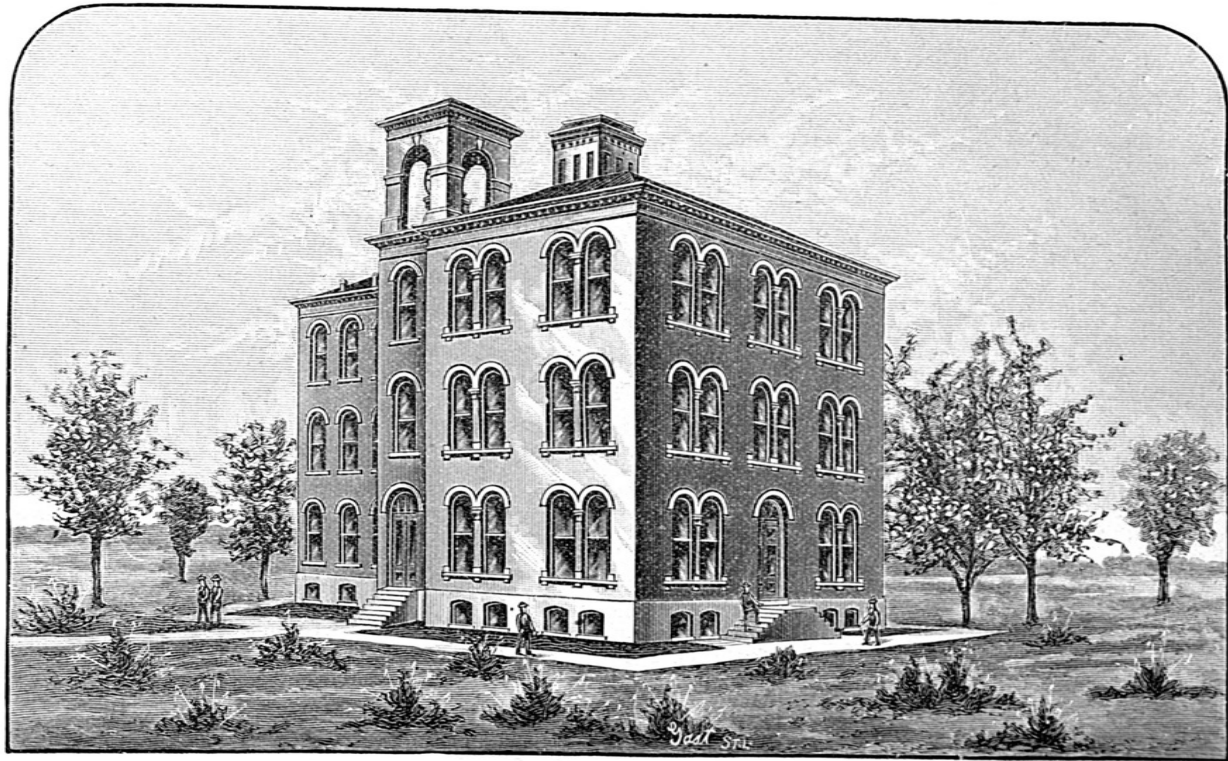
NOTE.—By an order of the Board of Curators, the student who attains the highest rank in the graduating class of any approved school will be permitted to enter the Academic department of the University or the Agricultural and Mechanical College without the payment of the ordinary matriculation fees.

II. THE PROFESSIONAL DEPARTMENTS

OF THE

UNIVERSITY OF MISSOURI.

- XV-1. AGRICULTURE AND MECHANIC ARTS.
- XVI-2. NORMAL INSTRUCTION.
- XVII-3. LAW.
- XVIII-4. MEDICINE.
- XIX-5. MINING AND METALLURGY.
- XX-6. ENGINEERING.
- XXI-7. MILITARY SCIENCE AND TACTICS.
- XXII-8. ART.



COLLEGE OF AGRICULTURE.

ANNOUNCEMENT

OF THE

Faculty, Courses of Study and Methods of Instruction

IN THE

COLLEGE OF AGRICULTURE
AND MECHANIC ARTS.

COLUMBIA, MO.: 1892-1893.

XV. College of Agriculture and Mechanic Arts.

FACULTY.

- R. H. JESSE, LL. D., President of the University,
Ex officio Chairman of the Faculty.
- EDWARD D. PORTER, A. M., Ph. D.,
Dean and Professor of Theoretical and Practical Agriculture.
- PAUL SCHWEITZER, Ph. D.,
Professor of Chemistry.
- THOMAS JEFFERSON LOWRY, S. M., C. E.,
Professor of Engineering.
- JOHN W. CONNAWAY, D. V. S., M. D.,
Professor of Veterinary Science and Comparative Medicine.
- EDWARD A. ALLEN, Litt. D.,
Professor of English.
- WM. B. SMITH, A. M., Ph. D.,
Professor of Mathematics.
- GEORGE D. PURINTON, A. M., Ph. D., M. D.,
Professor of Botany, Entomology and Zoology.
- G. C. BROADHEAD, M. S.,
Professor of Geology and Mineralogy.
- M. S. KING, M. Acc'ts,
Instructor in Commercial Course.
- CHARLES H. KEFFER, M. H.,
Professor of Theoretical and Practical Horticulture.
- M. L. LIPSCOMB, A. M.,
Professor of Physics.
- Lieutenant B. B. BUCK (detalled from the Regular Army),
Professor of Military Science and Tactics.
- ALEXANDER MARTIN, A. M., LL. D.,
Lecturer on Agricultural Law
- C. W. MARX, B. E.,
Superintendent of School of Mechanic Arts.
- C. B. REARICK,
Assistant in School of Mechanic Arts.
- FREDERICK C. HICKS, Ph. D.,
Professor of History and Political Science.
- J. P. BLANTON, A. M.,
Professor of Theory and Practice of Teaching, and Mental and Moral Science.

AGRICULTURAL EXPERIMENT STATION.

BOARD OF CONTROL :

The Curators of the University of Missouri.

EXECUTIVE BOARD OF THE UNIVERSITY :

Hon. G. F. ROTHWELL, Hon. B. M. DILLEY, Hon. J. S. CLARKSON.

ADVISORY COUNCIL :

The Governor of the State.
The President of the Board of Curators of the State University.
The Master of the State Grange.
The President of the State Board of Agriculture.
The President of the State Horticultural Society.
The Secretary of the State Horticultural Society.
The Professor of Agriculture, Missouri Agricultural College.
The Professor of Chemistry, Missouri Agricultural College.
The Professor of Veterinary Science, Missouri Agricultural College.
The Professor of Horticulture, Missouri Agricultural College.
The Professor of Geology, Missouri Agricultural College.

OFFICERS OF THE STATION :

EDWARD D. PORTER..... Director and Agriculturist.
P. SCHWEITZER..... Chemist
CHARLES A. KEFFER..... Horticulturist
..... Assistant Agriculturist
PAUL EVANS..... Veterinarian
CHARLES P. FOX..... Assistant Chemist
A. C. VANDIVER..... Farm Superintendent
IRVIN SWITZLER..... Secretary
R. B. PRICE..... Treasurer

COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

INTRODUCTION.

This College had its origin in the beneficence of National, State and local governments. Its location, objects and aims are defined in the following extracts from the acts of Congress and the laws of the State of Missouri:

Its leading objects shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life. (Act of Congress, 1862, Sec. 4.)

There is hereby established the Agricultural and Mechanical College, and a School of Mines and Metallurgy, provided for by the grant of the Congress of the United States, as a distinct department of the University of the State of Missouri. (Revised Statutes of Missouri, Sec. 8738.)

To effect the said leading objects of the colleges, as herein established, it is provided that the students and members thereof shall be admitted to the libraries, museums, models, cabinets and apparatus, and to all lectures and instructions of the University which now exist or may hereafter exist, and to all other rights and privileges thereof, in a manner as full and ample as are the students of any other department in said University; and to provide for instruction in military tactics, as herein required, it is enacted that in case a system of military education shall be established by Congress, the State University is hereby required by law to make the necessary provision for carrying out the plan so established in connection with the institution. (Revised Statutes, Sec. 8741, p. 2017.)

The Agricultural and the Mechanical College, and the School of Mining and Metallurgy herein provided for, shall have each a separate and distinct faculty, whose officers and professors may be the same in whole or in part as the officers and professors in other colleges and departments of the University. (Revised Statutes of Missouri, Sec. 8742.)

In consideration of the permanent location of the Agricultural and Mechanical College in connection with the State University, the county of Boone shall donate not less than thirty thousand dollars in cash, to be used in erecting such buildings and making such improvements as may be needed for such college, and also for a Mechanical College in connection with the State University, and that the same shall be held for the uses and purposes of said Agricultural and Mechanical College. (Revised Statutes of Missouri, Sec. 8744.)

In accordance with the above provisions, the citizens of Boone county made a donation of ninety thousand dollars for the erection of necessary buildings and the purchase of lands for an experimental farm, and this college was permanently located at Columbia, in connection with the University of Missouri and the School of Mines and Metallurgy at Rolla, under the same control and supported from the same congressional appropriations.

ENDOWMENT OF THE COLLEGE.

The support of the College is derived from:

1. The proceeds of the sales of the public lands donated to Missouri by the act of Congress of July 2, 1862. This State received as her share two hundred and seventy-five thousand acres, of which there have been sold up to date two hundred and sixteen thousand seven hundred and sixty acres, yielding three hundred and twelve thousand dollars, which sum is invested in a State certificate of indebtedness, at five per cent, yielding fifteen thousand six hundred dollars; of this amount one fourth, or three thousand nine hundred dollars, is by law appropriated to the support of the School of Mines and Metallurgy, at Rolla.
2. The annual appropriations from the United States treasury by the act of Congress of August 30, 1890, of fifteen thousand dollars for the years 1889-90, and increased each year by one thousand dollars, until it reaches twenty-five thousand dollars, which shall remain an annual appropriation. Of this amount, one-sixteenth is by law appropriated to the "Lincoln Institute," at Jefferson City, for the education of negro children in agriculture and mechanic arts, and one-fifth of the balance to the School of Mines and Metallurgy, at Rolla.
3. The act of Congress of March 2, 1887, known as the "Hatch bill," appropriates fifteen thousand dollars annually to the College of Agriculture, for the purpose of conducting investigations and experiments in various lines of work connected with agriculture. By the acts of Congress making the above appropriations, the expenditures are expressly restricted to the purposes of instruction, illustration and original scientific investigations in agriculture, and not one dollar can be used for the erection or repair of buildings; such facilities are to be provided by the State of Missouri.
4. The College building and Experimental farm, donated by the citizens of Boone county, and costing originally ninety thousand dollars.

The above sums, together with the assistance derived from the association of the College of Agriculture with the University, furnish an abundant income for all purposes of instruction and experimentation.

LOCATION.

The College of Agriculture and Mechanic Arts is located at Columbia, Boone county, in the north central portion of Missouri, one of the most beautiful towns of the State, containing about four thousand inhabitants, noted for their culture, refinement and morality, and surrounded by a region of country of well-known healthfulness and fertility.

Columbia is connected by a branch of the Wabash Western railroad with Centralia, whence it is accessible from all portions of the State by the Wabash and the Alton systems of railways. Three daily trains furnish ample facilities for communication with all portions of the State.

GENERAL INFORMATION.

Applicants for admission to the College of Agriculture should read carefully and follow the directions for new students given on a following page. The Dean of the College will be found in his office in Agricultural hall at the opening of each semester, from 9 to 12 o'clock, to assist students in their examinations, to direct them to suitable homes, and to advise with them in reference to their classes and studies.

CONDITIONS OF ADMISSION.

Applicants for admission to the Freshman class must be not less than sixteen years of age, and must have completed the "Public School" course of the State.

Applicants for advanced classes in the course must sustain examinations in the preparatory studies, and in all the book studies previously pursued by the class which they propose to enter; but if they have pursued such studies in any of the high schools of the State approved by the Faculty, or in other institutions of similar rank, they may receive credit for their standing in those institutions, upon presenting a certificate from the proper officers, showing that they have obtained a passing grade in courses of studies equivalent to those given here.

The proper dates for examination and admission are those given in the Calendar, and it is very important for students to be present and prepared to enter their classes at the beginning of the College year, as every absence from the lectures, recitations and exercises of the classes, after their work has begun, is a loss very difficult to regain.

EXPENSES.

There is no charge for tuition in this College, but there is an annual charge of \$10.00, to be paid on the entrance of the student, covering entrance fee, incidental expenses and library charges for that year.

Injury to the College property of whatever sort is charged to the author when known, otherwise to the section, class, or the entire body of students, as may seem most just in the individual case.

BOARDING.

Board in private families, with lodging, washing and fuel, may be obtained for \$3 to \$4.50 a week. Those who enter the clubs may reduce this amount to \$1.75.

The new club-houses afford accommodations for about one hundred and twenty students. The rooms are furnished with bedstead, stove, table and two chairs. Occupants are expected to furnish whatever else they deem necessary.

The members of the clubs have their own organization—president, commissary, secretary, censors, etc. They assess themselves, collect the money, buy their own provisions and regulate their own expenses.

The students of agriculture will have the preference of rooms in the Agricultural club buildings, which are situated on the horticultural grounds, provided application be made before the opening of the first semester, in September; the charges will be paid the same as by other students.

As the accommodations of the club-houses are limited, it will be necessary for students who wish to avail themselves of these advantages to make early application for rooms, as they are frequently all engaged before the opening of the college year. The rooms are assigned in the order of application, and requests for rooms must be made to the Proctor of the University.

COURSES OF STUDY.

The courses of study in the College of Agriculture, and Mechanic Arts have been selected to fully meet the requirements of the acts of Congress providing for its organization, and while they are especially adapted to prepare students for the industrial pursuits of life, they are also sufficiently comprehensive, and of such a character as to secure the mental discipline and practical experience necessary for other callings and professions, and to qualify pupils for the duties and responsibilities of American citizenship.

OUTLINE OF STUDIES.

The subjects are more fully outlined in the following pages :

AGRICULTURE.

History of Agriculture, and its development. Brief review of the chemical composition and physical properties of air and water, and their influences combined with heat and light, upon soils and vegetation. Origin, composition and practical classification of soils; properties, treatment and adaptation of each kind of soil to the various branches of husbandry; the reclamation and improvement of soils, including drainage, sub-soiling, trenching, fallowing, preparatory tillage, fencing and road-making; manufacture, preservation and application of manures; green manures, and irrigation; farm implements and machinery; production, management and sale of the different crops of the farm; the different breeds of farm animals, their characteristics and adaptations; breeding, rearing, feeding and management, for different purposes; selection of farms, and their adaptation to the different branches of agriculture; location and erection of farm buildings, and their adaptation to the purposes for which they are intended; rotation of crops, general principles, and their practical application; dairying; selection of cows for milk, butter and cheese; best methods of feeding; farm and factory systems; methods of testing milk; improved implements and machinery, and methods of handling dairy products; work of the Agricultural Experiment stations, objects to be accomplished, and methods.

All the above subjects are illustrated by the equipment and work of the College farm, and the Experiment station. Pupils are required to devote a sufficient amount of time in both of these departments to become familiar with their practical work, and to perform all the operations of the farm with facility.

BOOKS OF REFERENCE.—Morton's *Cyclopaedia*, Low's *Practical Agriculture and Domesticated Animals*, Storer's *Agriculture*, Miles on *Stock-breeding*, Thomas' *Farm Implements*; *Bulletins and Reports of the Experiment stations*, and the *Herd-books of the various Live-stock associations*.

HORTICULTURE.

The class-room instruction in Horticulture is by lectures, supplemented by written abstracts, and a discussion of the matter gone over.

The subjects treated are: Plants, their structure and the functions of their different organs, with the effect of the different conditions of the atmosphere and soil on their development; propagation of plants by seeds, cuttings, layers, buds, grafts, etc.; the nursery and its operations; forestry; fruit-growing; glass structures, their use, construction and management; market-gardening; floriculture and landscape gardening.

Students are required to devote enough time to work on the horticultural grounds to familiarize themselves with the different operations; and if they desire to make a specialty of horticulture, an opportunity is offered of working there for wages during their spare hours.

BOOKS OF REFERENCE.—Lindley's *Horticulture*, Downing's *Rural Essays and Landscape Gardening*, Loudon's *Cyclopedia of Horticulture*, the works of Warder, Fuller, Henderson and Quinn, and the horticultural reports of various states and experiment stations.

BOTANY.

This study begins with an examination of the organs of plants, after which their minute anatomy is considered. This is followed by a study of vegetable physiology, the classification of plants and vegetable products, with special reference to their agricultural and commercial uses.

The advanced course embraces a more thorough study of vegetable physiology, covering cell structure, germination, development of tissues, parasitic fungi, especially the molds, smut, rust and other cryptogamic plants.

The instruction is given by lectures, both in the class-room and in the field, supplemented by means of living plants from the gardens and green-houses of the College, objects from the Museum, and the charts, drawings and photographs prepared in the department. Each student has the use of a superior Compound microscope, and is taught the use of the instrument, and how to prepare and mount his own specimens.

Each student is required to provide himself with a pocket lens for field work, under the instruction of the professor in charge; the same instrument is used in the study of Entomology and Mineralogy.

ENTOMOLOGY.

Instruction in this study is given by a course of lectures, aided by the collection of insects in the Museum, and by work in the laboratory, gardens and fields. Especial prominence is given to the life history and habits of insects injurious to vegetation, and the methods of successfully checking their ravages.

The importance of this study to the agricultural interests of our country may be shown from the statement made by the Census bureau, that the ravages of insects amount to over \$200,000,000 annually.

ZOOLOGY.

The course of instruction in this study embraces descriptive and comparative anatomy and physiology of the classes and orders of the animal kingdom, and is given by lectures, field work and laboratory practice, at the seasons of the year most favorable for the study of animal life. In the lectures, constant use is made of the diagrams, models and specimens from the Museums, and practical dissections of some type of each class, while microscopic study is a regular portion of the laboratory work.

DRAWING AND SHOP-WORK.

The aim of the instruction in this department is not to make finished mechanics or artisans; it is not designed to be a "Trade school," but is designed, primarily, for intellectual development and discipline; and, secondarily, to cultivate habits of physical training, and to make farmers' boys familiar with the tools and processes, in working wood and iron, and to give them such training as will enable them to perform with facility the ordinary mechanical operations of the farm. The course of instruction embraces:

COURSE IN DRAWING.

First Year. Free-hand and Instrumental drawing, which is taught by lectures, and from objects, models, and flat copies, including intersections, development of surfaces, and lettering.

Second Year. Mechanical drawing, isometric projections, plans, sections, and elevations of machines, and structures.

Third Year. Geometrical drawing, tinting, brush and line shading; shades and shadows.

Fourth Year. Original professional work.

COURSE IN SHOP-WORK.

First Year. WOOD-WORKING AND PATTERN-MAKING.—This course begins with a series of exercises in wood-working, each of which is intended to give the student familiarity with a certain application of a certain tool; and the course of exercises, as a whole, is expected to enable the industrious student easily and exactly to perform any ordinary operation familiar to the carpenter, to the joiner and the pattern-

maker. Time permitting, these prescribed exercises are followed by practice in making members of structures, joints, small complete structures, patterns, their core-boxes, and other constructions in wood. Particular attention will be paid to the details of pattern-making.

Second Year. FORGING, MOLDING AND FOUNDRY-WORK.—These courses are expected not only to give the student a knowledge of the methods of the blacksmith and the molder, but to give him that manual skill in the handling of tools which will permit him to enter the machine-shop and there quickly to acquire familiarity and skill in the manipulation of the metals, and in the management of both hand and machine tools.

Third Year. MACHINE-WORK.—The instruction in the machine shop, as in the foundry and at the forge, is intended to be carried on in substantially the same manner as in the wood-working course, beginning by a series of graded exercises, which will give the student familiarity with the tools of the craft, and with the operations for the performance of which they are particularly designed, and concluding by practice in the construction of parts of machinery, and, time permitting, in the building of complete machines, which may have a market value.

Fourth Year. Original work in construction of machines or parts of machines, or special devices.

MATHEMATICS.

This course embraces a thorough review of the principles of Arithmetic, with their practical applications to the various demands of business life. Algebra, Geometry and Trigonometry are taught, with their special applications to mechanical draughting, mensuration, plane surveying and civil engineering. The leading objects kept constantly in view in this course are—first, to impart a practical knowledge of the subjects and methods of computation used in the ordinary affairs of life; and, second, to secure the discipline of the reasoning powers so essential in the advanced courses of study, and in practical life.

VETERINARY SCIENCE

Embraces an *elementary* and an *advanced* course.

The elementary course is designed for students in the "Short course" of two years, and will be given by lectures, illustrated by plates, models, skeletons and prepared specimens of the various organs of domestic animals. This course is not designed to prepare young men for veterinarians, but to give them such practical knowledge of the anatomy, physiology and hygiene of domestic animals as will enable them to handle intelligently ordinary farm stock. The course will embrace Comparative and Human Anatomy; the ordinary diseases of domestic animals and their treatment; water supply for stock; ventilation of stables; varieties of food, their value and preparation.

The Advanced course, given during the "Four Year course," will embrace a thorough knowledge of the study, including Anatomy and Physiology, both human and comparative; general Pathology and Histology; practical Medicine and Surgery; Animal Obstetrics; Bacteriology, and the study of contagious and infectious diseases.

ENGLISH LANGUAGE AND LITERATURE

Embraces a review of English Grammar, the origin, structure and use of the English language, including correct expression. Exercises in composition and declamation are continued throughout the entire course. A course in Rhetoric will be given, embracing the principles of argument, and the outlines of sound criticism. A course of lectures will be given on the English language and literature, with abundant illustrations from the best authors. Students are aided in the use of the libraries of the University, to which all members of the College of Agriculture have free access, and the various literary societies under the control of the students furnish an invaluable aid to young men, in perfecting themselves in oratory and composition.

CHEMISTRY

Includes a consideration of chemical action, with nomenclature and formulas, and a careful study of the history, manufacture, physical, chemical and physiological properties, tests and uses of the various elements and their compounds. While teaching the facts of such, it is the aim to give prominence to those which show relations and illustrate principles. Special attention is given to those substances having extended application in the arts. In addition to the usual lecture-room experiments, the student repeats, as far as practicable, all the experimental work at his private work-table.

In Chemical Analysis, each student has his stand in the Qualitative laboratory, completely furnished with apparatus and chemicals for his own use. His work includes the analysis of more or less complex mixtures of chemicals, ores, soils, mineral waters, well waters, etc.

AGRICULTURAL CHEMISTRY

Includes a thorough consideration of the application of chemical principles to the economy of the farm; the origin and formation of soils; the classification of soils; their composition; the analysis of soils, and their adaptation to the purposes of production; the composition and use of manures; composting; chemistry of farm operations, such as plowing, fallowing, draining; chemistry of plant growth; the composition of grain and fodder plants, and their use and value as food; feeding; the chemistry of milk, butter and cheese.

GEOLOGY AND MINERALOGY.

This study includes a general consideration of the earth's features: the constitution of rocks, and the arrangement of rock masses; the order of events in geological history; the order of succession of the strata of the earth's crust; and embracing the study of building materials, decomposition of rocks, and production of soils; useful minerals occurring in veins and beds; coal deposits, and the ordinary useful mineral substances; surface geology, applied to engineering and agriculture.

Instruction in this course will be given by lectures on Economic Geology and Mineralogy, Lithology, Physical Geology, and Geological surveying, and illustrated by charts, lantern projections, and the large collections of rocks, fossils, ores, minerals and specimens of building stones in the museums.

PHYSICS AND METEOROLOGY.

These subjects are taught by lectures, text-books and laboratory practice, and embrace a consideration of the laws of force and motion; the principles of the mechanical powers, and their application to the construction and use of farm implements and machinery; the movements of fluid bodies; atmospheric phenomena; the laws of heat, light, electricity and magnetism, with their application to agricultural science. After a knowledge of the fundamental principles of Physics has been obtained, students are admitted to the Physical Laboratory, where they are made practically acquainted with the construction and use of philosophical apparatus.

HISTORY AND POLITICAL ECONOMY.

These subjects are taught by lectures and recitations from standard text-books, and embrace a thorough knowledge of American history, treating of the development of political principles, the growth of population, education and industries. A course of lectures will be given on general history, with special reference to the origin of American ideas and institutions and the progress of civilization.

Under the head of Political Economy will be given a presentation of subjects connected with production, distribution and consumption of wealth, with special reference to the questions of wages, profits, trade unions, money, interest, usury laws, systems of taxation and finance. Special attention will be given in this department to the principles of civil governments, and the study of the Constitutions of the United States and of the State of Missouri.

For detailed information in regard to courses etc., see page 44.

MENTAL AND MORAL SCIENCE.

A course of lectures will be given upon these subjects, covering the laws governing the operations of the human mind, such as the relations of body and mind, the senses as factors in mental life, the laws of association and memory, the nature of reasoning and practical applications, especially in the field of education.

In Ethics the aim will be to lay a foundation for systematic thought on the problem of morals. Theories of right and wrong and correct principles of action are made the means of a clear understanding of the nature of government in various forms, with special application to individual rights and duties.

A BUSINESS COURSE

Will embrace thorough and systematic instruction in penmanship, commercial arithmetic and book-keeping, with special reference to the business of the farmer and artisan. Students will be drilled in the use of the several account books, and common business forms, in folding and filing papers, and in conducting business correspondence, the object being to lay the foundation for correct business habits and methods, so much wanted by the majority of American farmers.

FARM ENGINEERING.

As much instruction will be given in this study as will qualify the students in Agriculture to perform intelligently the operations of land surveying, leveling, the location and construction of ditches, drains, farm and country roads.

MILITARY SCIENCE.

An officer of the Regular army is detailed by the War department as Professor of Military Science and Tactics, to carry out the provisions of the act of Congress of 1863, which, in endowing this and similar institutions, stipulates that military tactics shall be taught.

All students entering this department are required to conform to the rules and regulations prescribed for the Military School, as contained in the subsequent pages of this Catalogue. The requirements of this department are so adjusted as to harmonize with the regular academic work of the students.

NORMAL INSTRUCTION.

As numbers of young men from the industrial classes expect to engage in teaching, either as a life work or as a means of partial support during their college course, and as there is a growing demand among the farmers of our country for the introduction of the study of agriculture in the public schools, it has been deemed advisable to establish in the College of Agriculture a chair of Pedagogics, in which will be given a course of instruction on the theory and practice of teaching, on school law and hygiene, and on school management. This course will be elective, but all students will be required to take the course in Agriculture.

The studies in the College of Agriculture and Mechanic Arts, as above outlined, are arranged in the following courses:

I. A THREE MONTHS' WINTER COURSE.

To meet the wants of a class of young men who have not the time to go to college for a regular course of study, but who desire to secure a certain amount of practical instruction, bearing upon the work of the farm, and to aid them directly in its prosecution.

The instruction in this course will be given by means of lectures and practical illustrations; text-books will not be used except for reference.

This course will cover those specific fields of the science and art of agriculture, that will have a direct business value to farmers. Fundamental principles of science, in its relation to agriculture, will be so far presented as to reveal the laws upon which certain operations of agriculture rest, while at the same time a discussion of the world's best methods, as gained by experience, will be required—the equipment of the college, and its farm, affording some aid in the work.

There will be lectures by the teachers of Agriculture, by successful farmers, by the Professors of Horticulture, Veterinary Science, Chemistry, Botany, and by others.

This course will be given during the months of January, February and March. Students entering it must be at least sixteen years of age, and have a good common-school education. No entrance examinations will be required, and an entrance fee of \$5 will cover all college expenses.

II. A TWO YEARS' COURSE.

This course is designed to take young men of fair average ability, not under sixteen years of age, and with such preparation as can be obtained in good district schools of the State, and give them a sound practical training that will broaden and strengthen them as citizens of the State, while it educates them in such branches of natural science as will cultivate their tastes for industrial pursuits and develop skill in their practice.

This course embraces the First and Second years of the regular Four Years' course, and those students who have not the opportunity of continuing their studies will find this an excellent preparation for practical life, and the introduction of the industrial feature, by devoting two hours of each day to work on the farm, in the gardens, in the work-shop or in military drill, will keep up habits of industry, physical training, and that respect for labor, which will tend to send the student back to the farm from choice, and not to educate him away from it.

III. A FOUR YEARS' COURSE.

This course is a two years' extension of the previous course, and is designed to give young men an advanced training in the higher departments of collegiate work, and to prepare them to enter upon their avocations in life as successful farmers, superintendents of farms, engineers, veterinary surgeons, botanists, entomologists, agricultural chemists, or lecturers.

Students completing this course will be entitled to the diploma of the University, conferring upon them the degree of B. Agr.

IV. A TWO YEARS' POST-GRADUATE COURSE

Is designed to give a professional training in one or more of the schools of this College to graduates of the College, or of other colleges of the same character.

Young men completing this course and complying with the requirements for graduation will receive the degree of M. Agr.

COURSES OF STUDY.

FARMERS' LECTURE COURSE.

(*Twelve weeks.*)

LECTURES ON AGRICULTURE.

Subjects: Soils, their origin and classification; tillage; farm manures and commercial fertilizers; rotation of crops; live stock; breeding and feeding; dairy farming.

LECTURES ON AGRICULTURAL CHEMISTRY.

Subjects: Study of the more important elements as applied to agriculture; chemistry of soils, their composition and relation to light, heat and moisture; physiology of plant growth; composition and feeding value of cattle food; the chemistry of the dairy.

LECTURES ON BOTANY.

Subjects: Analysis of plants; how plants grow; economic botany; smut of grains; diseases of plants and their remedies.

LECTURES ON HORTICULTURE.

Subjects: Origin of varieties of fruits, flowers and vegetables; cross-fertilization; practical work in horticulture; budding, grafting, layering; construction and management of hot-beds and cold frames; parasites and insecticides.

LECTURES ON VETERINARY SCIENCE.

Subjects: Anatomy of the leading domestic animals, illustrated by skeletons, charts and the celebrated "Azoux" anatomical models; examination of the horse for soundness; diseases of the feet, limbs, stomach and lungs; wounds and their treatment.

LECTURES ON ZOOLOGY.

Subjects: The evolution of animal life; the classification of the animal kingdom; study of the vertebrate sub-kingdom, including the muscular, alimentary, nervous and circulatory systems, and the organs of respiration, secretion and reproduction.

The lectures in the above course will begin on January 5, 1893, and will be continued daily, except Sunday and Monday, until March 23, 1893. Three lectures will be given each day, and the remaining time can be used by the student in work in the shops, laboratories, museums and libraries.

THE TWO YEARS' COURSE.

First Year.

First Term.

Elements of Agriculture.
Practical Mathematics and Algebra.
Analysis of Language.
Commercial Course.
Anatomy and Physiology.
Shop-work and Drawing.
Military Science (optional).

Second Term.

Elements of Agriculture.
Algebra.
Rhetoric.
Commercial Course.
Civil Government.
Shop-work and Drawing.
Military Science (optional).

Second Year.

<i>First Term.</i>	<i>Second Term.</i>
Horticulture.	Agriculture.
Geometry.	Trigonometry and Surveying.
English Literature.	Botany.
Elementary Chemistry.	Agricultural Chemistry.
Elementary Physics.	Elementary Veterinary.
Shop-work and Drawing.	Shop-work and Drawing.
Military Science (optional).	Military Science (optional).
Normal Instruction (optional).	Normal Instruction (optional).

The above will constitute the "Two Years' course," and students completing it will be entitled to a certificate of the College, testifying to that fact.

This course is preparatory to the "Degree," or

THE FOUR YEARS' COURSE.

Third Year.

<i>First Term.</i>	<i>Second Term.</i>
Advanced Agriculture.	Horticulture and Forestry.
Entomology.	Zoology.
Higher Algebra.	Advanced Geometry.
Organic Chemistry.	Agricultural Chemistry.
Advanced Physics.	Advanced Physics.
Political Science.	Political Science.
Farm-work and Laboratory Practice.	Horticult'1 work and Laboratory practice.

Fourth Year.

<i>First Term.</i>	<i>Second Term.</i>
Horticulture.	Geology.
Mineralogy.	Veterinary Science.
Agricultural Engineering.	Experiment Station work.
Veterinary Science.	Elective Studies.
Experiment Station work.	
Elective Studies.	

THE COLLEGE YEAR.

This commences September 13, 1892, and closes with the annual Commencement exercises, Thursday, June 1, 1893.

The year is divided into two terms: The first term opens September 13, 1892, and closes January 30, 1893; the second term opens January 31, 1893, and closes June 1, 1893.

STUDY HOURS.

Recitations, lectures and practical exercises are conducted Tuesday, Wednesday, Thursday, Friday and Saturday of each week, and the hours for the College of Agriculture are from 9 o'clock to 1 o'clock, and from 2 o'clock to 5 o'clock. Chapel exercises are held from 8:45 to 9 o'clock, at which all students are expected to be present.

FACILITIES FOR INSTRUCTION.

Museums, Apparatus and Farm Library.—A valuable library of farm books has been collected, to which additions are being made. In addition to the Agricultural library, the students of the Agricultural College have access to the libraries of all the associated schools.

Agricultural Museum.—Large additions have been made to this Museum of objects especially adapted to illustrate the lectures in agriculture and agricultural botany. The World's Exposition at New Orleans was the source of much valuable matter. The Museum now contains an unusually fine collection of wool and of cotton fibers, numbering about 600 specimens. These fibers represent most all civilized sections of the world. The wool fibers include the various breeds of sheep, affording as a whole, opportunity to study the influence of climate, soil and breed on wool fiber. Various fiber-producing plants are well represented, and are often accompanied by the various manufactured products. Nearly all of the woods of the State are represented by three feet of the trunk of such tree, so prepared as to show its heart and sap in the rough and under polish. The grasses of the State are represented by 125 species, collected by a graduate of the Agricultural College. In addition to the grasses of the State, the Museum contains one of the finest general collections of grasses in the country. In seeds it contains ninety Japanese varieties, 150 species of American farm seeds, and a great number of varieties of wheat, corn, oats and barley. It has 179 different grades of the milling products of wheat. It contains several hundred models of farm machinery. Sorghum and all its varied products are represented by forty-six objects. A large collection of miscellaneous materials of great value that cannot be enumerated. The list contains many woods and their products from the States of this country and from South America and Europe; also a long list of plants and their products.

In addition to these means of illustration, 318 lantern slides have been already collected of the larger number intended. These are found to be a very great aid to the lecture-room.

Chemical and Physical Laboratories.—Laboratories in each of these departments are well supplied with modern appliances for illustrating lecture-room teaching.

Green-house.—A green-house, which is connected with the Horticultural department, affords invaluable assistance in connection with the botanical studies and for the improvement of plants.

Farm.—The farm is divided into two departments—Farm and Horticultural—both of which were well equipped with buildings, stock and tools of modern character. But owing to a disastrous fire in 1889, the barn, implements and machinery were totally destroyed. They have been partially replaced, and it is hoped that necessary appropriations will be made by the next Legislature to thoroughly equip the farm for the best work. The farm consists of 700 acres of land of varying quality, and is well adapted to its purpose of instruction and experiment work. The students will be required to perform such labor on the farm as is deemed necessary for the acquirement of proficiency in the methods taught, and will be compensated according to the character and amount of the work to be done, ten cents being the maximum pay per hour. In addition to this field labor, students will be required to perform farm labor whenever it is desirable to illustrate lecture-room teachings. Such work will be done without pay.

Experiments will be constantly carried on for the farming interests of the State and for lecture-room work. Students will be required to assist in the experiments.

The Horticultural department will stand in the same relation to the lecture-room and to the public that the farm does. It is an indispensable aid in teaching the student small-fruit culture, grafting, budding, pruning, hot-house propagation, vegetable gardening, etc.

In the orchard and fruit garden are about 800 varieties of fruits, which are used in illustrating lecture-room work and for experimental purposes.

THE AGRICULTURAL EXPERIMENT STATION.

This station is made by the act of Congress of 1837, and by the acts of the General Assembly of Missouri accepting its provisions, and by the order of the Board of Curators of the University of Missouri, a department of the College of Agriculture.

The following are the essential sections of the act of Congress referred to, and define clearly the objects to be accomplished in the organization of these stations:

AN ACT to establish agricultural experiment stations in connection with the colleges established in the several states under the provisions of an act approved July second, eighteen hundred and sixty-two, and of the acts supplementary thereto.

Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and application of agricultural science, there shall be established, under direction of the college or colleges or agricultural department of colleges in each state or territory established, or which may hereafter be established, in accordance with the provisions of an act approved July second, eighteen hundred and sixty-two, entitled "An act donating public lands to the several states and territories which may provide colleges for the benefit of agriculture and the mechanic arts," or any of the supplements to said act, a department to be known and designated as an "agricultural experiment station:" *Provided, that in any state or territory in which two such colleges have been or may be so established, the appropriation hereinafter made to such state or territory shall be equally divided between such colleges, unless the legislature of such state or territory shall otherwise direct.*

SEC. 2. That it shall be the object and duty of said experiment stations to conduct original researches or verify experiments on plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analyses of soils and waters; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective states and territories.

SEC. 4. That bulletins or reports of progress shall be published at said stations at least once in three months, one copy of which shall be sent to each newspaper in the states or territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same, and as far as the means of the station will permit. Such bulletins or reports and the annual reports of said stations shall be transmitted in the mails of the United States free of charge for postage, under such regulations as the Postmaster-General may from time to time prescribe.

SEC. 5. That for the purpose of paying the necessary expenses of conducting investigations and experiments and printing and distributing the results as hereinbefore described, the sum of fifteen thousand dollars per annum is hereby appropriated to each state, to be specially provided for by Congress in the appropriations from year to year, and to each territory entitled under the provisions of section eight of this act, out of any money in the treasury proceeding from the sales of public lands, to be paid in equal quarterly payments, on the first day of January, April, July and October in each year,

to the treasurer or other officer duly appointed by the governing boards of such colleges to receive the same, the first payment to be made on the first day of October, eighteen hundred and eighty-seven: *Provided, however*, that out of the first annual appropriation so received by any station an amount not exceeding one-fifth may be expended in the erection, enlargement or repair of a building or buildings necessary for carrying on the work of such station; and thereafter an amount not exceeding five per centum of such annual appropriation may be so expended.

It will be noted that the act of Congress of 1862 was designed to promote Agricultural education, while that of 1837 provides for Agricultural investigation.

In accordance with the provision with the above act of Congress, the Board of Curators of the University of Missouri in January, 1888, reorganized the Experiment station by transferring to it the entire use of what has been known as the "Agricultural College farm," upon which for many years this work of experimentation had been conducted by the Professor of Agriculture of the College.

The results of these experimental investigations have been given to the public in a series of bulletins or reports, which are furnished free of charge to any one applying for the same. These bulletins are numbered from 1 to 35 of the Farm series, and 1 to 17 of the Station series, since its reorganization.

NOTICE.

Any information desired concerning the College of Agriculture or the Experiment station will be cheerfully given upon application to

EDWARD D. PORTER,

Dean of the College of Agriculture and Director of the Experiment Station.

Work done in the College of Agriculture and Mechanic Arts during the year 1891-2.

As this College was reorganized in September, 1891, only the First Year class has been admitted.

The following table exhibits the whole number of students in attendance, both regular and special, from September 8, 1891, to June 2, 1892; also the number in the several classes:

Class	Regular	Special	Total
Agriculture	71	5	76
Horticulture	3	3	8
Shop-work	53	18	71
Drawing	65	24	89
Mathematics	92	16	108
English Language	71	10	81
Civil Government	47	61	108
Commercial Course	71	90	161
Anatomy, Physiology and Hygiene	46	4	50
Veterinary Science	6	7	13
Normal Instruction	4	0	4
Military Science and Tactics	25	0	25
Number of students in all classes			790
Deduct all counted more than once			683
Total number of individual students			205

XVI. Normal Department.

 FACULTY.

- R. H. JESSE, LL. D.,
President.
- J. P. BLANTON, A. M., Dean,
Professor of Theory and Practice of Teaching, and Mental and Moral Philosophy.
- PAUL SCHWEITZER, Ph. D.,
Professor of Chemistry.
- J. S. BLACKWELL, M. A., Ph. D.,
Professor of Semitic and Modern Languages.
- J. C. JONES, A. M., Ph. D.,
Professor of Latin.
- EDWARD A. ALLEN, Litt. D.,
Professor of English.
- WM. B. SMITH, A. M., Ph. D. (GOETT.),
Professor of Mathematics and Astronomy.
- GEORGE D. PURINTON, A. M., M. D., Ph. D.,
Professor of Biology.
- G. C. BROADHEAD, M. S.,
Professor of Geology and Mineralogy.
- M. L. LIPSCOMB, A. M.,
Professor of Physics.
- W. G. MANLY, M. A. (HARV.),
Professor of Greek.
- JOHN W. CONNAWAY, D. V. S., M. D.,
Professor of Physiology.
- FREDERICK C. HICKS, Ph. D.,
Professor of History and Political Science.
- C. W. MARX, B. E.,
Superintendent of Shop-work in Department of Mechanic Arts.
- CHARLES B. REARICK,
Professor of Drawing.
- M. S. KING, M. Acc't's,
Instructor in Penmanship and Book-keeping.
-
- Professor of Elocution.*

NORMAL COURSES.

There are two distinct Normal courses, one Elementary and one Academic.

The Elementary course extends over two years, and is intended to prepare teachers for the public schools of the State. Graduates in this course receive a State certificate, which entitles the holder to teach for a period of two years from date of graduation.

The following is the Elementary course:

ELEMENTARY NORMAL COURSE.

JUNIOR YEAR.		No. times per week.
First Semester	*Elocution	2
	English Grammar and Analysis (third semester)	5
	Algebra and Plane Geometry (third semester)	5
	Physiology and Hygiene	3
	Zoology	3
	*Drawing	2
Second Semester	American Literature	2
	Physical Geography	5
	Elementary Botany	3
	English Composition	5
SENIOR YEAR.		
First Semester	English History	2
	English Literature	3
	Elementary Physics	3
	Book-keeping and Penmanship	3
	†Pedagogics	5
	U. S. History and Civil Government (Lectures and Recitations)	3
Second Semester	English Literature	3
	Young Chemist.	3
	Rhetoric	2
	†Pedagogics	5

* Elocution and Drawing are required in all four semesters two hours a week.

† Pedagogics in the above course embraces the study of educational psychology, the history of educational theories and the organization and management of schools.

ACADEMIC NORMAL DEGREE (Pe. B.).

The degree of Bachelor of Pedagogics is conferred upon regular graduates of the University in any one of the three academic courses (see page 57) who supplement their academic work by the courses in Pedagogics, which are given below. Those who take this degree receive a diploma which is a life certificate to teach anywhere in the State.

First Semester—

1. Theoretical and Critical: A consideration of the philosophic basis of education. Recitations and Lectures. Text-books: Compayre's Lectures on Pedagogy. Tu., Th., Sat., — hour.

2. History of Education: Comparative education, ancient and mediæval. Recitations and Lectures. Text-books: Compayre's History of Pedagogy and Quick's Educational Reformers. Wed. and F., — hour.

Second Semester—

3. Practical: The application of the principles to the teaching of the various branches of school education. The art of questioning and examining; illustration and exposition; school supervision, embracing general school management, the art of grading and arranging courses of study, the conduct of Institutes, etc. Recitations and Lectures. Text-books: Compayre's Lectures on Pedagogy; Payne's Chapters on School Supervision. Tu, Th., Sat., — hour.

4. History of Education: Comparative education, modern. Recitations and Lectures. Text-book: Compayre's History of Education. Wed. and F., — hour.

These courses are open to Juniors, Seniors and graduates, and are so arranged that academic students may distribute the work over the Junior and Senior years, or take all of it in the Senior year. Graduates of colleges of approved standing in the regular academic courses will, upon the completion of the above courses at the University, be granted the degree of Bachelor of Pedagogics and the life certificate to teach anywhere in Missouri.

ELECTIVE.

5. Pedagogic Seminary: Examination of Rosenkranz's Philosophy of Education. Discussions and essays on educational topics, and reports on visits to schools. Th., — hour.

Course 5 is intended only for students who have completed Course 1, or its equivalent.

6. Teachers' Course: Special courses of instruction were offered by professors in the University to the teachers of the State, beginning April 1, 1892, and continuing two months.

The following course in Pedagogics was among this number:

I. A consideration of (1) the subjects of instruction in the common-school curriculum to determine their relative values from the practical and culture standpoints; (2) the position of the instrumentary branches in school and their educative value; (3) the communication of "real" knowledge as a part of school work, including the knowledge necessary for the welfare of the individual and the citizen.

II. The Art of Teaching—The characteristics of teaching will be considered as they affect the subject-matter of instruction, its arrangement, the mode of communicating it, the language employed and the teacher's personal manner.

The ordinary mistakes in teaching will be pointed out.

III. The History of Education—The course will conclude with ten lectures on the history of educational theories, in which the following subjects will be discussed:

The Influence of the Introduction of Christianity on Education—Education in the Early Church—The Renaissance—The Reformation—Luther and Melancthon—Ratich and Comenius—Rabelais and Montaigne, Milton, Locke, Rousseau and Pestalozzi.

Something of the above nature and scope will be offered in 1893, beginning April 1st, announcement of which will be made during the second semester by circulars to the teachers. No fees are charged for any of these special courses.

ENROLLMENT.

Number of students in the Normal department.....	124
Candidates for graduation:	
Academic degree (Pe. B.).....	13
Elementary course.....	32

XVII. Law Department.

FACULTY.

- RICHARD H. JESSE, LL. D.,
President of the University.
- ALEXANDER MARTIN, A. M., LL. D.,
Dean of the Faculty and Professor of Law.
- JAMES A. YANTIS, LL. B.,
Professor of Law.
- JOHN D. LAWSON, B. C. L., LL. D.,
Professor of Law.
-

SPECIAL LECTURERS.

- ANDREW W. MCALESTER, A. M., M. D., Dean of the Medical Department,
Lecturer on Medical Jurisprudence.
- PAUL SCHWEITZER, Ph. D.,
Lecturer on Toxicology.
- FREDERICK C. HICKS, Ph. D.,
Lecturer on the Theory of Jurisprudence.
- HON. GEORGE B. MACFARLANE, Judge of the Supreme Court of Missouri,
Non-resident Lecturer on Criminal Law.
- HON. SEYMOUR D. THOMPSON, LL. D., Judge of the St. Louis Court of Appeals,
Non-resident Lecturer on Law of Corporations.
- HON. _____,
Lecturer on the Law of Wills and Administration.
- HON. JAMES A. SEDDON, A. M., LL. B., Ex-Judge of Circuit Court of St. Louis,
Non-resident Lecturer on Commercial Law.
- HON. UPTON M. YOUNG, of the St. Louis Bar,
Non-resident Lecturer on Equity Jurisprudence.

HISTORICAL STATEMENT.

The Law School was formally opened as a department of the University on the first Monday of October, 1872, since which time it has continued with uninterrupted progress and increasing success. Connected with its advancement in the past will be found the names of Judge Philemon Bliss, who, in his day, was a Judge of the Supreme Court of Missouri, and author of the well-known treatise on Code Pleading; Prof. C. G. Tiedeman, author of numerous valuable treatises on different subjects of the law, written during his connection with the school; Hon. Boyle Gordon, and Hon. Odon Gulfar, eminent practitioners at the bar of Missouri.

ADVANTAGES.

The advantages now offered by the University of Missouri for instruction in the science and practice of the common law, as prevailing in the United States, are not excelled in any university of the West.

ACCOMMODATIONS.—Two large lecture-rooms, with a large room for the Law library, have been set apart in the University building for the exclusive use of the Law department. These rooms are all on the same floor and communicate with each other.

Since the above was written, the building containing the rooms for the Law department has been destroyed by fire. The Curators are erecting a building for the exclusive use of the Law department. At present, ample accommodations are furnished in the court-house.

Lectures and recitations begin in both lecture-rooms at 9 o'clock a. m., and close at 1 o'clock p. m., daily. Moot courts are held in the lecture-rooms or library room every Friday at 3 o'clock p. m. Lectures and recitations are held in the afternoon when necessary to meet the requirements of the school.

LIBRARIES.—The library of the Law department consists at present of a large collection of reports, and treatises on every subject of the law. It is increasing rapidly every year. All the decisions of the American courts are received at the library as soon as published. A complete set of digests of decisions and reports is kept up, so that the latest expressions of authority are brought within reach of the students and professors. Members of the Law department have access to the general library of the University. The Law library was mostly saved from loss by the fire, and will be considerably increased this year.

LOCATION.—The University of Missouri is located in the town of Columbia, in Boone county, near the center of the State, within a five hours' ride from St. Louis, on the Wabash Western railway. The site of the town occupies a high and healthy plateau of the most fertile and beautiful land in Missouri. It is a place noted for the hospitality, cultivation and refinement of its society, which is generously opened to the youth of both sexes who resort to the University for education.

The connection of the Law department with the University enables the law student to pursue any branch of instruction in the Academic department, which does not interfere with his legal studies, without additional charge. Some of the members of every class have found it convenient to pursue studies in the Academic department, such as Latin, logic, rhetoric, military tactics, history, etc.

UNIVERSITY SOCIETIES.—Members of the Law School are eligible to membership in the two great literary societies of long standing in the University known as the "Athenæan" and "Union Literary." They are also eligible to membership in the "Bliss Lyceum," a society founded in connection with the Law department, and to which members of that department alone are admitted.

These societies in the University are its nurseries of oratory, debate and parliamentary law.

METHODS OF INSTRUCTION.

LECTURES, RECITATIONS, EXAMINATIONS AND STUDY OF TREATISES AND CASES.

The first benefit inuring to the student who enters a good law school is to learn how to read law.

A student in an attorney's office is too apt to continue in his reading of law the aimless and superficial habit contracted by him in the perusal of newspapers, literary periodicals and novels.

To read law with any hope of success, it is necessary that the student should read and re-read slowly, carefully considering the exceptions and qualifications to the principles embodied in the text; he should also make an abstract, in his own hand, of the substance of the text; and, after this is done, he should review each day's work, and consult references made in any part of it which he may not thoroughly understand.

He should also consult dictionaries to assist him in obtaining a definite and precise knowledge of legal terms and phraseology.

The Law Faculty is more satisfied than ever that the highest results cannot be reached by lectures alone, however clear and thorough they may be; but that the student as far as possible should be required to study the text of some approved treatise on the subject of instruction, and to examine critically well-considered cases illustrating the principles discussed in the lecture-room. For the purpose of ascertaining the progress of the student, and impressing upon him the necessity and advantages of precise and definite knowledge of the subjects upon which he has received instruction, he should be required to stand frequent recitations and examinations on the work accomplished by him. He should also be required to take notes of the substance of the lectures, and of the cases furnished by the professor for his investigation. In this manner, it is believed, he will receive the full advantages of the lecture and recitation methods of instruction as applied to the study of treatises and the examination and analysis of cases. A combination of these methods has, in the opinion of the Faculty, produced the most satisfactory results.

MOOT COURT.—A Moot Court is held every Friday, in which members from all the classes participate. In this court the matters discussed arise in some supposed cause. Regular pleadings are required, and, when the cause is supposed to be in the Supreme Court, in addition to the pleadings, papers are prepared, necessary in actual practice, as the writ of error, assignment of errors, bill of exceptions embodying the instructions to the jury, rulings upon the admission or exclusion of evidence, motions for new trial or in arrest, etc. Briefs of points and authorities must also be submitted and filed. A member of the Senior class or Post-graduate class is called to sit as special judge in each cause; who, the next week, gives his opinion in writing, subject to appeal to the member of the Faculty present at the trial.

COURSES OF STUDY.

The principal object of the courses of study adopted in the school is to qualify the graduates for an efficient and successful discharge of their duties as licensed attorneys. It has never been within the aim of the school to cram its students for the purpose of qualifying them to pass the special examinations which may possibly take place at the bars to which they may seek admission. The courses of study have been adopted with the view of familiarizing the successful candidate for a degree with the principles of substantive law, and the law of remedy and procedure, as prevailing in American jurisprudence. After a short study of the statutes and decisions of the State in which he expects to settle, he will deserve admission to its bar. As the degree of LL. B. from this school entitles the graduate to admission to the bar of the State of Missouri, the faculty cannot overlook the fact that a fair knowledge of the general statutes of the State, and of the modifications which the common law has undergone in the decisions of the courts, is an essential qualification for admission to its bar. But, as there is great similarity in the general statute and judiciary law of the Western, Northwestern and Southwestern

states, it is believed that what may be learned in that respect will be of benefit to a student settling in any of said states.

UNDER-GRADUATE COURSE.—The full Under-graduate course is for a term of two years. The students in it constitute two classes: Juniors and Seniors. The Juniors pursue the studies of the first year; the Seniors the studies of the second year. Instruction is given daily to these classes, in the form of lectures, recitations and examinations upon the text-books recommended and leading cases furnished by the Faculty. Every Friday they participate in the exercises of a Moot Court.

The Junior class will receive instruction on the following subjects:

Elementary Law and the Law of Torts:

By Professor YANTIS.

Contracts, Personal Property, Bailments, Sales, Domestic Relations and Criminal Law:

By Professor LAWSON and Special Lecturers.

Negotiable Instruments:

By the DEAN and Special Lecturers.

The Senior class will receive instruction on the following subjects:

Real Property, Evidence and Corporations:

By Professor YANTIS and Special Lecturers.

Agency, Partnership and Insurance:

By Professor LAWSON.

Equity Jurisprudence, Pleading and Practice, Admiralty, Maritime Law, Constitutional and International Law:

By the DEAN and Special Lecturers.

Law of Wills and Administration:

By Special Lecturers.

Theory of Jurisprudence:

By FREDERICK C. HICKS, Ph. D., Special Lecturer.

TEXT-BOOKS.

The text-books recommended for the Junior year are as follows:

Robinson's Elementary Law.

Lawson on Contracts.

Browne on Domestic Relations.

Bigelow on Torts.

Tiedeman on Sales.

Tiedeman on Commercial Paper.

Lawson's Leading Cases on Criminal Law.

Schouler on Bailments.

Darlington on Personal Property.

The text-books recommended for the Senior year are as follows:

Disphan's Principles of Equity.

Tiedeman on Real Property.

Bliss on Code Pleading.

Greenleaf on Evidence (1st vol.).

Taylor on Corporations.

Barber on Insurance.

Pollock on Partnership.

Mechem on Agency.

Werner on Administration.

Cooley's Principles of Constitutional Law.

Woolsey's International Law.

Desty on Shipping and Admiralty.

Desty's Federal Procedure.

POST-GRADUATE COURSE.

On the 18th of April, 1891, a further and additional course of instruction and study in the Law department was established by the Board of Curators. It occupies one year, and was opened for the first time in October, 1891. It is open to graduates of the two years' course in the Law department, and to graduates from other law schools who have completed a similar or equivalent course.

The object of this course is to provide the future practitioner with a more extended and practical knowledge of the most important subjects embraced in modern law, than the limited time of the under-graduate course will admit of. It is also intended to afford him assistance in prosecuting the study of any particular subject or department of law which he expects to follow specially in his future practice.

The course of instruction will embrace lectures and recitations on the following subjects: Constitutional Law, Corporations, Insurance, Trusts, Patents, Law of Homicide. The student in this course will be allowed to select any special subject in law for extended examination and study, to be prosecuted concurrently with the subjects embraced in the course. His examination and study will be directed by the Faculty, who will advise him of the books and cases to consult, and afford him assistance and counsel when called upon.

It is believed that many licensed attorneys, beginning or about to begin practice, will find it to their advantage to take the instruction of this course as special students.

The text-books recommended for the Post-graduate course are as follows:

- Lawson on Usages and Customs.
- Cooley on Constitutional Limitations.
- Miller on the Constitution of the United States.
- Lewin on Trusts (with Scott's notes).
- May on Insurance.
- Walker on Patents.
- Bishop on Criminal Law.
- Cook on Stockholders and Corporations.
- Thompson on Corporations (in course of preparation).

SPECIAL COURSES.

Students who do not wish to take any of the full courses, and who are not candidates for any of the degrees awarded to those who have successfully completed said courses, will be permitted to take an elective course, and pursue any branches of study and instruction, the exercises of which do not conflict with each other. They will be classed as special students, and will receive certificates from the Faculty of the time spent at the school, and the work accomplished by them. Those desiring to become special students are recommended to advise with the Faculty before fixing upon the special studies which they expect to pursue.

QUALIFICATIONS FOR ADMISSION.

UNDER-GRADUATE COURSE.

Junior Class.—For admission to the Junior class, no examination in law is imposed. In respect to academical education, candidates are advised to complete, if they can, a full academic or collegiate course. A good common-school education at least must be possessed by the candidate. The Faculty must be satisfied of this by certificates to that effect from instructors in the public schools, or by examination of the candidates conducted by themselves, or by professors in the English department of the University. If unknown to the Faculty, the candidate must bring testimonials of good character.

Candidates will be admitted to the Junior class at any time during the Junior year, upon passing an examination upon the work accomplished by the class at the date of the examination.

Senior Class.—No one will be admitted to the Senior class as a candidate for a degree unless he applies at the beginning of the year, and has sustained, or is able to sustain, an examination upon the studies of the Junior year. In exceptional cases, upon failure in one or two branches only, the examination, as to those branches, may be postponed to some period during the term, and the applicant will be admitted to the class as a candidate for a degree, upon the condition of sustaining a satisfactory examination on those branches at the time appointed for it.

POST-GRADUATE CLASS.

No one will be admitted to such class as a candidate for a degree unless he holds the degree of LL. B. from the Law department of this University; or is a graduate of some other law school, whose course of instruction and study, upon which his degree is predicated, is equivalent to the course of instruction and study required for the corresponding degree in the Law department of this University.

No admission to the Senior or Post-graduate courses will be permitted after two weeks from the commencement of the year.

SPECIAL COURSE.

The same qualifications as to a common-school education and character, required of candidates for the Junior class, will be exacted of students admitted to pursue special courses selected by them.

DEGREES AND HONORS.

Members of the Senior class who have successfully passed the examinations of the Senior year, will be entitled to receive from the Board of Curators the degree of Bachelor of Laws. Members of the Post-graduate course, who have successfully passed the examinations belonging to that course, will be entitled to receive the degree of Master of Laws.

Whenever a candidate for graduation attains a high degree of excellence in his class work, the degree of Bachelor of Laws or Master of Laws will be conferred upon him with distinction, and the words "*cum laude*" will be incorporated in the diploma. In determining the required degree of excellence, the student's conduct as a gentleman, as well as his attainments as a scholar, will be taken into consideration.

Only those Seniors who shall have attained "distinction" shall be eligible to the honor of valedictorian at Commencement.

The members of the Senior class are all invited to write essays upon some subject in the law, assigned to them by the Faculty, before January 1 of each year. The essays so written will be submitted to a committee of judges charged with the duty of designating the best two of said essays. The best one of the two thus designated will be read by the author at Commencement exercises, and both of them will be recommended for publication. Students not writing essays as aforesaid shall not be eligible to any of the honors and distinctions heretofore mentioned as in addition to the right of graduation, unless they have been excused therefrom for good cause.

The heirs of the late Hon. James S. Rollins have provided for the establishment of a prize fund, whose interest shall be expended annually in the bestowal of a prize of fifty dollars upon the most worthy Junior in several of the colleges of the University. According to the terms of the trust, one of these prizes is to be awarded to the Junior law student who shows himself entitled thereto by his superior scholarship and moral conduct.

The prize will be awarded at the Commencement following the close of Junior year.

All who receive the degree of Bachelor of Laws are by law admitted, without further examination, to practice in all the courts of the State of Missouri.

TUITION CHARGES AND EXPENSES.

Applicants for admission to any of the classes of the Law department, or as special students to elective courses, are required to pay the sum of fifty dollars for the first year's attendance and forty dollars for each successive year.

Applicants for admission to the Junior class, after January 1st, are required to pay \$35 for the balance of the year. All tuition charges are payable in advance.

No other charges are made by the University, except a fee of \$2 for the diploma given to every graduate by the Board of Curators. No charges are made for certificates of the Faculty given to special students.

Students provide themselves with text-books at their own cost, which will average, for necessary text-books, about \$35 per annum.

A copy of every text-book used in the lecture-room is procured for the Law library, where it may be ready for the occasional use of the students when pursuing their studies there.

Board may be had in clubs at the rate of \$1.75 per week; in families at \$3 to \$4.50 per week.

The Treasurer's receipt should be at once procured and presented to the Proctor of the University by the applicant for admission. His name will then be entered upon the University roll, and a card to that effect will be delivered to him.

The student must present the card thus received from the Proctor to the Secretary of the Faculty, who will enroll his name and issue to him his admission ticket, with instructions necessary for enabling him to have his name entered on the class-roll.

ATTENDANCE.

The attendance in the Law department for the year ending June 2, 1892, numbered sixty-six.

DISCIPLINE.

The Faculty requires every student to pay strict attention to the duties assumed by him, and to be honorable and considerate in his deportment to the Faculty, fellow-students and citizens. This is the only rule of behavior, the highest penalty for violation of which is expulsion.

OPENING AND CLOSING.

The Law department opens on the first Tuesday in October, and closes on the first Thursday in June of each year. The present year ends June 2, 1892. The year next succeeding the present one will open Tuesday, October 4, 1892.

EXAMINATIONS FOR ADMISSION.

Examinations for admission will be held in the lecture-rooms on the first Tuesday of October, at 11 o'clock a. m., and at the same hour on the first day of collegiate exercises after the first day of January, and again on the last Tuesday of January in each year.

Examinations for admission will be accorded at other times upon request, to suit the convenience of applicants.

For information and catalogues, address

ALEXANDER MARTIN, Dean, Columbia, Mo.

XVIII. Medical Department.

[Organized 1845. Suspended during the Civil war. Reorganized 1872.]

 FACULTY.

- R. H. JESSE, LL. D.,
President of University.
- A. W. McALESTER, A. M., M. D., Dean of Faculty,
Professor of Surgery and Obstetrics.
- P. SCHWEITZER, Ph. D.,
Professor of Chemistry and Toxicology.
- WOODSON MOSS, M. D.,
Professor of Practice of Medicine and Anatomy.
- GEO. D. PURINTON, M. D., Ph. D.,
Professor of Medical Botany.
- M. L. LIPSCOMB, A. M.,
Professor of Physics.
- J. W. CONNAWAY, D. V. S., M. D.,
Professor of Physiology (Human and Comparative).
- PAUL EVANS, M. D.,
Professor of Histology and Bacteriology.

 SPECIAL LECTURERS.

- PAUL PAQUIN, M. D.,
Lecturer on Bacteriology.
- A. B. MILLER, A. M., M. D.,
Lecturer on Gynecology.
- G. R. HIGHSMITH, M. D.,
Lecturer on Abdominal Surgery.
- M. D. LEWIS, M. D.,
Lecturer on Practice of Medicine.
- J. L. CORLEW, M. D.,
Lecturer on Obstetrics.
- F. P. HULEN, M. D.,
Lecturer on Diseases of Women and Children.
- W. A. NORRIS, M. D.,
Assistant Demonstrator of Anatomy.

REQUIREMENTS FOR ADMISSION.

The requirements for admission shall be the same as in the Academic departments. See page 58.

Students are strongly urged to take degrees in Art or Science before entering this department.

COURSE OF INSTRUCTION.

Graded, extending through three years. The 20th annual session will commence September 13, 1892, and will end June 1, 1893, continuing nine months.

The division of studies in the three years' course is as follows:

First Year—Anatomy (osteology and dissecting), Physiology (chemical, nutritive and reproductive), Chemistry, Physics, Normal Histology, Microscopy, with mounting and staining normal tissues; General Therapeutics.

Second Year—Anatomy, general and descriptive, and dissections; Physiology, Nervous System, Chemistry, Microscopy, mounting and staining bacteria; Therapeutics, Theory and Practice of Medicine, Surgery and Obstetrics.

Third Year—Theory and Practice of Medicine, Clinical Medicine, Physical Diagnosis, Surgery, Clinical Surgery; Anatomy, surgical and topographical; Obstetrics, Therapeutics, Gynecology, Diseases of Children; Diseases of eye, ear, nose and throat; Sanitary Science; Medical Jurisprudence; Work in Bacteriological Laboratory.

PLAN OF INSTRUCTION.

Instruction in this school is given by lectures, recitations, clinical teaching and laboratory work.

The length of the session, nine months, renders it practicable to distribute the different branches among the teachers in the most satisfactory manner, and in their natural order and succession. The student is thoroughly drilled each day by examinations upon the lectures of the previous day, and by recitations from the text-books.

By this method of teaching, it is claimed that we avoid the process of cramming—a deleterious practice, too prevalent in the general system of medical education. We believe that the proposed method of teaching will do more to elevate the standard of medical education, and to exalt the dignity of the profession, than any other measure that could be adopted.

Besides the ordinary instruction in chemistry, a special course is given to advanced students in Toxicology, the material and appliances for teaching which are not excelled by any institution in the United States.

The students are also taught the use of the microscope, both in relation to pathological and physiological studies. The methods of bacteriological investigation are taught by practical work in the laboratory. Besides the microscope, the department has the benefit of two superior magic lanterns. For illustrating lectures with the above instruments, there are over 500 slides.

Among the advantages offered by this school is the privilege granted without further cost to all students who enter the Medical department, of pursuing such studies as they may desire in the academic course. Academic students may take Anatomy and Physiology in the medical course, preparatory to entering on the full medical course after graduating in Art or Science. Such students are admitted to the Second year's medical class.

This department is equipped with models in plastic and papier mache, plaster casts, drawings and other appliances for the illustration of the lectures on anatomy, surgery and physiology.

Among the many valuable preparations for demonstrating anatomy and surgery is Dr. Auzoux's Plastic Man, a complete and accurate model of the male human body.

The figure is five feet ten inches in height, and is composed of ninety-two separate parts, which may be detached from one another. It exhibits over two thousand details of the viscera, muscles, nerves, blood-vessels, etc., in short, all that is usually embraced in a complete treatise on anatomy.

Also, Auzoux's female pelvis, with the external organs of generation, the lumbar vertebrae, diaphragm, muscles, aponeuroses of the perineum, vessels and nerves.

Also, his collection illustrating Ovology. These models are on an enlarged scale, and exhibit the modification of the ovum, envelopes and vitelline vesicle, etc.

In addition to the above are eight uteri, in plastic, containing the products of conception at the first, second, third, fourth, eighth and ninth months, with examples of tubular and ovarian pregnancy.

Another model, to which we deem it proper to call attention, is Dr. Auzoux's synthetic model of the brain, which exhibits the structure of that organ upon an immensely magnified scale. Designed in conformity with the new anatomical indications furnished by Dr. Luys, this model presents a resume of all the researches of ancient and modern anatomists. This entirely new method of studying the brain opens an immense field for the research of physicians and philosophers. The models of the eye and ear are greatly enlarged and very accurate, showing the complete gross structure of these organs, as described by modern anatomists. The preparation of the head is most admirably executed. The bones are disarticulated and mounted according to the method of Beauchene.

Besides these invaluable models and preparations, we have a complete set of the German anatomical models, in plastic, made at Leipzig.

PRACTICAL ANATOMY.

Every facility is afforded the student for the study of practical anatomy. Adequate provision is made for a supply of subjects amply sufficient for the number of students. The dissecting rooms are large and well ventilated, and will be open during the whole winter season, where, under the guidance of the demonstrators, the student may, by dissection, acquire a practical knowledge of the human body in all parts.

CLINICS.

The number and variety of Medical and Surgical Clinics are ample for the purposes of the highest order of clinical instruction.

DEGREES.

Upon a satisfactory completion of the above course, the degree of Doctor of Medicine will be conferred.

In addition to the ordinary degree of M. D., we recommend the degree of "M. D. *cum laude*" to all students having the degree of A. B. or S. B.

EXAMINATIONS.

Students must pass in the work of each class before admission to an advanced class.

FEES.

The first year's fees, \$20. Second and third years, \$50 each. Diploma, \$2.

REQUIREMENTS FOR GRADUATION.

1. The candidate must have completed and sustained a satisfactory examination upon the course prescribed in this school.
2. He must be twenty-one years of age, and exhibit to the Faculty satisfactory evidence of possessing a good character.

3. His last course of lectures must have been attended in this Institution.
 4. He must have been regular in attendance on lectures and recitations.
 5. He must have pursued the study of practical anatomy, under the supervision of the demonstrator, during his pupilage in this Institution.
 6. He must notify the Dean of the Faculty, on or before the first week of April, of his intention to become a candidate for graduation at the ensuing Commencement.
 7. Every candidate must appear before the members of the Faculty for examination in the various branches of medicine taught in this school, at the time appointed for such examinations.
 8. Violation of the general laws and rules established by the Curators and the Faculty for the government of the University, negligence of duties, habitual and prolonged absence from lectures and from the anatomical rooms, will prevent a student from obtaining a degree.
 9. If a candidate is rejected, his diploma fee will be returned to him.
- For flagrant violation of the rules and laws established for the government of the University, a professional student may be expelled from the Institution. In such a case the fees on his entrance will not be returned to him.

TEXT-BOOKS, AND BOOKS OF REFERENCE.

Anatomy—*Gray, Wilson, Ledy.*
 Surgery—*Ashurst, Gross, Erichsen.*
 Physiology—*Dalton, Flint, Foster, Kirke.*
 Principles and Practice of Medicine—*Flint, Niemeyer, Watson.*
 Materia Medica—*Bartholow, Biddle, Farquharson.*
 Chemistry—
 Obstetrics—*Ployfair, Lusk.*
 Diseases of Women and Children—*Thomas, Smith.*
 Histology—*Prudden's Normal, Rindfleisch's Pathological Histology.*
 Pathology—*Ziegler, Paget, Gross.*
 Toxicology—*Taylor.*
 Ophthalmology—*Wells, Williams.*
 Otology—*Toynbee, Turnbull.*
 Medical Jurisprudence—*Taylor, Tidy.*
 Nervous Diseases—*Ranney, Hammond, Reynolds.*
 Diseases of the Heart and Lungs—*Flint, Loomis.*

Every student should provide himself with a medical dictionary (*Dunglison's* is suggested). The text-books are designated by *italics*.

All works used as text-books in the school, as well as books of reference, can be purchased here on as favorable terms as in any of the eastern cities.

For any farther information in relation to the school, address

A. W. McALESTER, M. D.,
 Dean of Medical Faculty, Columbia, Mo

For catalogues, address
 WOODSON MOSS, M. D.,
 Secretary Medical Faculty, Columbia, Mo.

ENROLLMENT.

First year's class	27
Second year's class	5
Third year's class	

NOTE.—The adoption of the "Three Years' Course" accounts for no graduating class this year.

XIX. Department of Engineering.

 FACULTY.

- R. H. JESSE, LL. D.,
President of the University, Ex Officio Chairman of the Faculty.
- THOMAS JEFFERSON LOWRY, S. M., C. E., DEAN,
Professor of Civil and Topographical Engineering.
- PAUL SCHWEITZER, Ph. D.,
Professor of Chemistry.
- E. A. ALLEN, Litt. D.,
Professor of English.
- WILLIAM B. SMITH, Ph. D.,
Professor of Mathematics and Astronomy.
- Lieut. B. B. BUCK (detached from Regular Army),
Professor of Military Science and Tactics.
- G. C. BROADHEAD, M. S.,
Professor of Geology and Mineralogy.
- M. L. LIPSCOMB, A. M.,
Professor of Physics.
- HIRAM PHILLIPS, Top'l Engineer,*
Assistant Professor of Engineering.
- WILLIAM SHRADER, Ph. D.,
Assistant Professor of Physics.
- C. W. MARX, B. E.,
Superintendent of Shop-work in Department of Mechanic Arts.
- ALEXANDER MAITLAND, C. E.,
Assistant Professor of Civil Engineering.

* Resigned January 23, 1892.

GENERAL STATEMENT.

The School of Engineering is designed to furnish the students the means of acquiring a thorough knowledge, theoretical and practical, of those sciences and arts which are playing the most important parts in the development of the material resources of our country, and the advancement of our civilization.

The advances in scientific and technical education made in the last twenty years have been largely in the direction of the introduction of a certain amount of laboratory and practical training into courses of study which formerly consisted exclusively of text-books and theoretical work. The results of this innovation have been so satisfactory that it is no longer a question of debate. To this end it will be observed that shop-work, field-work, laboratory practice and drawing are made prominent features of the Engineering courses.

The sphere of the engineer is so broad and diversified that it is impossible, for anyone to become proficient in all the various specialties into which the profession has been so divided. To meet the demands for special engineering studies and training from the end of the second year of the studies laid down in the Engineering Synchronistic table, three parallel courses have been arranged, (see page 99), so as to allow of option and diversity of special studies. This department will thus foster the development of special fitness in each student, by offering him work in the line of his preferences. These courses are:

I—Civil Engineering.

II—Hydraulic and Topographical Engineering.

III—Electrical Engineering.

The course in Civil Engineering is designed for those who wish to make either road engineering, or railroad engineering, or the designing and construction of bridges and masonry, a specialty.

The course in Hydraulic and Topographical Engineering is arranged for those students who wish to make either geodesy, or irrigation, or water-works, or dams and foundations, or river improvement, a specialty.

The Electrical Engineering course has been established to meet the wants of young men desirous of entering upon the rapidly developing field of the applications of electricity to the arts. Its leading studies are physics, especially theoretical and applied electricity, mechanics, mathematics and chemistry. The course is made strong in shop-work, mechanical engineering and mathematics, because in many branches of electrical engineering a sound and practical knowledge of mechanics, measurements of power and its transmission is essential.

We especially ask the attention of those young men who desire to fit themselves for the duty of county surveyor and of government land surveyor to the fact that every effort will be made to enable them to accomplish this within a short time. To this end, at the beginning of each year, a class will be organized and instructed (theoretically and practically) in land surveying, with compass, theodolite and solar compass; in the surveys for and location and construction of roads, and in the surveys for and location of, and in the designs for and construction of, wooden bridges, and in locating and surveying base lines, meridians, and township and section lines, and in retracing old government, township and section lines. This class will also be instructed in drawing. This course can be completed in forty weeks. A certificate of proficiency will be given those who complete this course.

INSTRUCTION IN ENGINEERING.

The methods of instruction embrace the use of text-books, lectures (illustrated by diagrams of the great engineering and surveying operations and results of the present age), and actual field and observatory practice. The field and observatory practice and work in the chart-room are made to bear a large proportion to the theoretical instruction. The data thus obtained by actual field surveys and practice in the shops, laboratories and the observatory serve both to elucidate the principles and formula, and insure their ready and accurate application in professional life.

TECHNICAL ENGINEERING WORK.

CIVIL ENGINEERING.	HYDR. AND TOP'L ENGR'R.	ELECTRICAL ENGR'R.
<i>Junior, First Semester.</i>	<i>Junior, First Semester.</i>	<i>Junior, First Semester.</i>
App. Mech. 4	Des. Geom. 4	Physics 4
Des. Geom. 4	Diff. Calculus. 3	Analyt. Mech. 4
Diff. Calculus. 3	Int. Calculus. 2	Calculus. 5
Int. Calculus. 2	Drawing. 4	Shop or Drawing. 2
Drawing. 3	App. Mech. 5	French or German. 3
Shop (forg. iron and steel). 2		
<i>Second Semester.</i>	<i>Second Semester.</i>	<i>Second Semester.</i>
App. Mech. 4	Des. Geom. and Draught'g 3	Physics 4
Des. Geom. and Draught'g 5	Higher surveying. 5	Chemistry 3
Higher Surveying. 5	Steam Engine. 3	Calculus. 5
Physics. 2	Hydr Sur. and Pr. Astr. 2	French or German. 3
Shop (forg. iron and steel). 2	Drawing. 2	Elec. and Magnetism. 3
	Geodesy. 3	
<i>Senior, First Semester.</i>	<i>Senior, First Semester.</i>	<i>Senior, First Semester.</i>
R. R. Sur. and Eng'r. ... 4	Irrigation. 2	Electro-dynamics. 3
Strains in Fr. Structures. 5	Least Sqrs. 2	Applied Mechanics. 4
Masonry Construction. ... 4	Top'l Mapping and Field-work. 3	French or German. 3
Eng'r Test. Laboratory. ... 1	Hydraulic Eng'r Rivers and Harbors. 5	Dynamo-Elec. Machinery. 4
Shop (clipping, filing and fitting). 2	Foundations and Dams. ... 3	Physical Laboratory. 2
Tech. Drawing. 2	Drawing. 3	Chemical Laboratory. 2
<i>Second Semester.</i>	<i>Second Semester.</i>	<i>Second Semester.</i>
Designing Structures, Project and Thesis. 5	Water-works. 5	Tech. App'n of Electricity 3
Steam Engine. 2	Sanitary Eng'r. 5	Applied Mechanics. 4
Field-work. 3	Drawing. 3	Machine Design. 2
Eng'r Spec. and Contracts 2	Eng'r Spec. and Contracts 2	Steam Engine. 2
Eng'r Test Laboratory. ... 1	Project and Thesis. 3	Orig. Research and Thesis 5
Shop (clipping, filing and fitting). 2		

ACADEMIC WORK

Required for Graduation in the Courses in Civil, Hydraulic and Topographical, and Electrical Engineering.

CIVIL ENG'R AND HYDR. AND TOP'L ENG'R.

Freshman, First Semester.

Algebra, Geom. and Trig.	5
Chemistry	4
English	3
Drawing	4
Shop (Joining & Carp'try)	2

Second Semester.

Algebra, Geom. and Trig.	5
Chemistry	4
Land Surveying and Law	4
English	3
Drawing	1
Shop (Carp'try & Joining)	1

Sophomore, First Semester.

Analytical Geometry	3
Mineralogy	4
Roads, Streets & Pavem'ts	2
Elementary Mechanics	4
Drawing	2
Field Work	1
Shop (Wood Turn'g, Patt. Making and Moulding)	2

Second Semester.

Economic Geology	2
Analytical Geometry	4
Physics	4
Chemistry	3
Drawing	3
Shop (Wood Turn'g, Patt. Making and Moulding)	2

ELECTRICAL ENG'RING.

Freshman, First Semester.

Algebra, Geom. and Trig.	5
Chemistry	4
Shop	2
German or French	3
Drawing	2
Comp. and Rhetoric	2

Second Semester.

Algebra, Geom. and Trig.	5
Chemistry	4
Shop	2
German or French	3
Drawing	2
Comp. and Rhetoric	2

Sophomore, First Semester.

Descrip. Geometry	2
Analytic Geom. and Det.	3
Mineralogy	4
German or French	3
Drawing	2
Shop	2
English	3

Second Semester.

Physics	4
Analytic Geometry	4
French or German	3
Shop	2
Drawing	2
Elec. Measurements and Problems	3

Special Course in Electrical Engineering
Of two years, ending with Certificate.

Freshman, First Semester.

Chemistry	4
Comp. and Rhetoric	2
Geom., Trig. and Algebra	5
Drawing	2
Shop	2
Arithmetic of Elec. Measurements	4

Second Semester.

Chemistry	4
Comp. and Rhetoric	2
Geom., Trig. and Algebra	5
Drawing	2
Shop	2
Physics (from Soph.)	4

Sophomore, First Semester.

Physics (Junior)	3
Electro-dynamics	4
Drawing	3
Shop	5
Physical Laboratory	2
Electrical Laboratory	2

Second Semester.

Technical Application of Electricity	3
Steam Engine	2
Machine Design	2
Drawing	2
Shop	3
Chem. Lab'ory (Junior)	3
Electrical Laboratory	4

NOTE.—While the student is pursuing the first three years of the Engineering courses, the tuition is \$20 per year; the last two years, \$40 per year.

“The James S. Rollins Engineering scholarship” of \$50 will, on the first day of June of each year, be awarded to that member of the Junior class in Civil Engineering “who shall be adjudged entitled to it by the President and the Faculty.” For conditions of award, see article: “James S. Rollins University Scholarships,” page 110.

REPORT.

The following is the report of the Engineering department for the year ending June, 1892:

Senior class	3
Juniors, Sophomores and Freshmen	49
Total in the Engineering course	52
Candidates for certificate of surveyor	6
Total number in the Drawing classes of Engineering School	28

The classes in topographical surveying and engineering have, by frequent practice in the field, familiarized themselves with the use of the theodolite, sextant, spirit and water-levels, leveling rods, chain and compass, and plane-table. And the class in surveying, by frequent practice in the field, have familiarized themselves with the use,

manipulation and capabilities of the theodolite, compass and chain, and leveling rods and spirit levels, and the solar compass.

The energy, enthusiasm, painstaking care and accuracy displayed by these classes have confirmed me in the opinion previously formed from observation and experience of seven years with field officers of the U. S. Coast survey and navy, that the American mind possesses a fertility of resources, a power of adapting means to ends, and an acuteness of perception, which peculiarly fit it for an observer in the exact arts.

The wisdom of the Board of Curators in providing an assistant professor of Engineering to devote his entire time to work in the Engineering school, is shown in the increased efficiency of the engineering students in drawing-room and field-work

The fact that we have been able to secure positions (on the surveys and improvements of the Mississippi and Missouri rivers, on the coast survey, on railroad surveying and engineering parties, on bridge engineering, and on government land surveying parties) for the graduates from this department, has assisted materially in awakening an intelligent interest—a healthy enthusiasm—in the cause of engineering education at this University. And the present revival in the industries which demand engineering, electrical and chemical skill has already increased and promises to further increase the number of students in this department.

THOMAS J. LOWRY,
Dean of Engineering School.

XX. Military Department.

Lieutenant B. B. Buck, 16th U. S. Infantry,
Professor of Military Science and Tactics, and Commandant of Cadets.

During the year now drawing to a close, 193 cadets have received instruction in this Department. The Cadets are organized in a battalion of four companies, a band and an artillery detachment, as follows:

Battalion Staff and Non-Commissioned Staff.

Cadet First Lieutenant and Adjutant	J. J. Duncan
Cadet First Lieutenant and Quartermaster	F. W. Niedermeyer
Cadet First Lieutenant and Ordnance Officer	A. S. Holmes
Cadet Sergeant Major	O. W. Granger
Cadet Quartermaster Sergeant	J. N. Follows
Cadet Drum Major	C. Truitt

Company A.

Cadet Captain	S. F. Creelius
Cadet First Lieutenant	E. T. Allen
Cadet Second Lieutenant	T. W. Thompson
Cadet First Sergeant	H. G. McBurney

Company B.

Cadet Captain	C. G. Haines
Cadet First Lieutenant	(Vacancy)
Cadet Second Lieutenant	F. D. Wickam
Cadet First Sergeant	K. Stone

Company C.

Cadet Captain	A. J. McCulloch
Cadet First Lieutenant	J. E. Smith
Cadet Second Lieutenant	W. E. Gordon
Cadet First Sergeant	H. M. Dawes

Company D.

Cadet Captain	J. P. White
Cadet First Lieutenant	H. B. Walker
Cadet Second Lieutenant	J. E. Bishop
Cadet First Sergeant	J. M. Allen

Artillery Detachment.

Cadet Captain	H. L. Moore
Cadet First Sergeant	H. R. Mitchell

Those Cadets are appointed to office who show ready obedience, zeal and capacity in the discharge of military duty. The Governor of Missouri issues commissions to those entitled by their battalion rank to receive them.

GENERAL SUPPLIES.

One hundred and fifty Springfield cadet rifles of the latest model, one Gatling gun, cal. 45, with full equipment, two 3-inch rifled field-guns, with carriages and implements, and a suitable amount of ammunition and target materials are furnished by the United States. The State supplies ammunition, camp equipage, utensils, etc.

UNIFORMS.

Cadets wear but one style of uniform, known as the undress, or fatigue, uniform. Uniforms must be worn at all military exercises, and may be worn on all occasions. Tailor-made uniforms are supplied to volunteer cadets at a cost of \$16.50 each, including cap and gloves. The State furnishes uniforms to regularly appointed cadets free of cost. The 38th General Assembly made for this department a special appropriation of \$5,000, which is used to provide uniforms. These uniforms are of the very best material and make.

COURSE OF INSTRUCTION.

FIRST YEAR—SECOND CLASS.

Practical instruction in the Schools of the Soldier, Company and Battalion (infantry), and Extended Order.

Practical instruction in rifle firing, 100, 200 and 300 yards.

Practical instruction in duties of camp, embracing guard duty, etc.

Recitations in Infantry Drill Regulations through School of the Company, ceremonies of Guard Mounting, Dress Parade, Inspection, Review, Muster and Extended Order.

Recitations in guard duty, rifle firing and cadet regulations.

SECOND YEAR—FIRST CLASS.

Practical instruction in the Schools of the Company and Battalion, and in Extended Order.

Practical instruction in the service of field-guns (foot battery), with mechanical maneuvers.

Practical instruction in rifle-firing, 100, 200 and 300 yards.

Practical instruction in the duties of camp, embracing guard duty, etc.

Practical instruction in military signaling.

Recitations in Infantry Drill Regulations. School of the Battalion.

Recitations in Artillery Tactics, manual of the piece dismounted.

Recitations in the elements of Field Fortifications.

Recitations in the elements of the Art of War.

Lectures on Army Organization, the Army of the U. S., the Regulations of the U. S. Army, the Regulations of the National Guard of Missouri, Courts-Martial and Military Law and the Customs of War, Street Fighting, etc.

No cadet is excused from recitations, lectures, drills, camp or other duty now prescribed, or to be ordered as circumstances may render necessary, except as provided for in the cadet regulations.

All cadets who have *satisfactorily passed* the first year's course constitute the first class. All others constitute the second class.

CERTIFICATE OF PROFICIENCY.

To have passed through the entire course does not entitle a cadet to receive a certificate of proficiency in military science and tactics, but it is the rule now adopted in the department that the certificate will be issued to every cadet, State or volunteer, who takes the entire course and attains the second grade (at least 70 per cent) in *every examination* during the two years.

APPOINTMENT OF STATE CADETS.

The following extracts from the Militia law of the State of Missouri, enacted by the Thirty-fifth General Assembly, and now in force, will be of interest to those who desire to receive the appointment as cadet :

SEC. 5. The Military department of the University of the State of Missouri, as organized under section 1225, Revised Statutes of the United States, and section 7279, Revised Statutes of Missouri, 1879, is created the Missouri State Military School.

SEC. 6. The corps of cadets at the Missouri State Military School shall consist of one from each senatorial and representative district in this State, and shall be actual residents in the district from which appointed, and shall pass the required examination for admision to the University. Each Senator and Representative of the General Assembly of the State of Missouri shall appoint during the month of August in each year a cadet for such scholastic year.

SEC. 7. Cadets receiving instruction as provided in the preceding section shall be matriculated in all the academic departments of the University free from tuition fees, and subject only to the incidental fees and laboratory fees therein provided.

SEC. 8. The corps of cadets as provided in the preceding sections shall have the military organization prescribed for the National Guard of the State and reckoned a part thereof, and as such entitled to all such provisions as are or may hereafter be made for the National Guard of Missouri. The military government and discipline of the cadets shall be prescribed by regulations prepared by the Faculty of the University and approved by the Governor of the State.

A circular letter of instructions will be prepared and forwarded to Senators and Representatives prior to August 1, 1892, setting forth the conditions of entrance and inviting them to make appointments under this law. No cadet will be received who is under 16 or over 25 years of age, or who is less than five feet one inch in height, or who is in any way physically disqualified for military service. Although the law is silent on the subject, and each Senator and Representative must be his own judge in the matter, still it is desirable that appointments be made by competitive examinations, since the State, after making liberal provisions, is entitled to the very best material obtainable.

All male students of the University not physically disqualified, and who come within the limits of age and height, will be allowed to enroll themselves as voluntary cadets, but State cadets only will be matriculated in Academic departments of the University free of tuition, and provided with uniforms without expense to themselves. A copy of the regulations for the government of cadets will be given to each cadet upon his entrance into the Missouri State Military School. These regulations require cadets to enter and report to the commandant for duty *before* September 25th of each year. They should report by September 8th, if possible.

Cadet regulations prescribe that military drills, etc., shall be held at least three hours each week, one of which shall be for theoretical and two for practical instruction. The regulations also require an annual encampment of from eight to ten days, during which time the instruction is entirely military and practical. Here the cadets are put through all the duties of camp life. They conduct their own commissary and quartermaster departments. They have target practice at 100, 200, 300 and 400 yards, and perform the duties of sentinels, patrols, etc., and are given all the drills and ceremonies prescribed in the two years' course. The expenses of the camp are borne by the University.

B. B. BUCK, U. S. Army,
Professor of Military Science and Tactics.

XXI. Department of Art.

Professor _____.

UNIVERSITY LIBRARY.

Since our last (fifteenth) Annual Report, we have sustained the loss, by fire, of the University library. Only such books as happened to be out of the main building at the time were saved, and these numbered about 200. With the books, went down all the pictures, statuary, etc. But the courage of the Curators, Faculty, students and friends of the University was superb, so that in the face of calamity an effort was instantly made to retrieve our losses. As the news of the fire spread over the country, publishers, universities, libraries and private individuals came to the rescue with gifts and loans. The Curators have promptly furnished us with commodious quarters in the Medical building, and already books are pouring in. We have \$10,000 insurance money on books, which will be available in a short time to make purchases for our next school year, and this will form the nucleus of even a better library than the one burned. Our Sixteenth Annual Report is as follows:

	Books.	Pamphlets
General library	1,551	
*Destroyed by fire	900	
Law library	1,764	
Total	4,155	912

* Law books, to be replaced by July 1, 1892.

The thanks of the University are due to many persons for gifts of books, pamphlets and periodicals. The Wisconsin Historical Society and Wisconsin University have kindly remembered us. Their box of books did not arrive in time, however, to specify the contents. Several Missouri authors have generously placed copies of their works in the library—some, alas! previous to our disastrous fire. A list of donors is submitted below.

DONATIONS TO UNIVERSITY LIBRARY.

Donors.	Vols.	Donors.	Vols.
†United States government	1,342	J. W. Buel	5
Johns Hopkins University	187	R. E. Downing	5
Michigan University	165	Charles Scribner's Sons	4
Major J. B. Merwid	100	Cupples, Upham & Co	4
Ginn & Co.	25	State Geologist	3
MacMillan & Co.	15	Public Opinion Co	3
Dr. Duncan	51	Rev. Dr. Watts	3
State government	42	Bureau of American Republics	2
World's Exposition	26	Mrs. J. J. Sperry	2
L. M. Defoe	21	Captain Rollins	2
F. Hindesoper	15	Dr. W. B. Smith	1
W. W. Garth	15	Mrs. Kate West	1
Harper Bros	14	P. Cadmore	1
American Hereford Association	14	Ed. Oppenheimer	1
American Holstein-Friesian Ass'n	14	James Reed	1
American Short-horn Ass'n	14	Mr. Rozler	1
Houghton, Mifflin & Co	8	J. K. Smith	1
Pub. of North American Review	6	John Smith	1
D. Appleton & Co.	6	Dr. A. L. Branstetter	1
The Century Co.	6	John Boulton	1
W. M. Scott	6		
Rev. Geo. A. Watson	5	Total	2,108

†Special mention is made of the Hon. John T. Heard, member of Congress, for his indefatigable labors in this behalf.

Thanks are due Prof. J. K. Hosmer for the gift of five books of his own production.

PERIODICALS PRESENTED TO THE LIBRARY.

American Economist.....	Merck's Medical Bulletin.....
Apostolic Guide.....	Mexico Intelligencer.....
Centralia Courier.....	Mexico Ledger.....
Central Baptist.....	Mid-Continent.....
Colman's Rural World.....	Monroe City News.....
Columbia Herald.....	National Economist.....
Columbia Statesman.....	Post-Dispatch.....
Cooper County Democrat.....	Saline County Progress.....
Cynosure.....	San Jose Herald.....
Hannibal Daily Journal.....	Shelbina Democrat.....
Judge.....	St. Joseph Herald.....
Kansas City Live-Stock Indicator.....	St. Joseph Gazette.....
Knox County Democrat.....	The Voice.....
Medical Mirror.....	Weekly Democratic News.....

PERIODICALS PURCHASED FOR CURRENT YEAR.

Academy (Boston).....	Journal of Hellenic Studies.....
Academy (London).....	Journal of Royal Micros. Society (London).....
Agricultural Science Monthly.....	Journal of Society of Natural History.....
Albany Law Journal.....	Journal of Chemical Society (London).....
American Antiquarian.....	Kansas City Times (Daily).....
American Naturalist.....	Kansas City Journal (Daily).....
American Journal of Science.....	Kansas City Star (Daily).....
American Journal of Mathematics.....	Ladies' Home Journal.....
American Journal of Philology.....	Leslie's Illustrated Weekly.....
American Microscopical Journal.....	Lippincott's Magazine.....
American Law Review.....	London Quarterly.....
American Geologist.....	Magazine of American History.....
American Garden.....	Medical Journal (New York).....
Andover Review.....	Modern Language Notes.....
Annals of Mathematics.....	Nation.....
Arena.....	National Guard.....
Atlantic Monthly.....	New England Magazine.....
Century Magazine.....	Nineteenth Century.....
Chautauquan.....	North American Review.....
Chemical News (London).....	Post Lore.....
Christian Union.....	Political Science Quarterly.....
Classical Review.....	Popular Science Monthly.....
Critic.....	Public Opinion.....
Eclectic Magazine.....	Quarterly Review (London).....
Edinburgh Review.....	Review of Reviews.....
Education.....	Revue des Deux Mondes.....
Educational Review.....	Rhenisches Museum fur Philologie.....
Electrical Engineer.....	Sanitarian.....
Electrical World.....	Scientific American.....
Engineering and Mining Journal.....	Scientific American Supplement.....
Engineering News.....	Scribner's Magazine.....
Forum.....	Shakespeareana.....
Globe-Democrat (Daily).....	St. Louis Republic (Daily).....
Harper's Magazine.....	Sunday School Times.....
Harper's Weekly.....	Trubner's Oriental Record.....
Hebraica.....	University Magazine.....
Hermes Zeitschrift.....	University Extension Magazine.....
Independent (New York).....	United Service.....
Journal of Education.....	Youth's Companion.....

Members of the Faculty are permitted to take books out of the library, each being entitled to six volumes, for one week.

Any student who deposits the value of the book is permitted to take it out for University work, over night.

The reading room is open during the school year, excepting Sundays and legal holidays—in winter from 7:45 a. m. to 5 p. m., and in summer until 6 p. m.

Students are expected to be in the library at work if not at recitation, or at their residences, during school hours.

The Librarian and his assistant make a study of the contents of the library, so as to render valuable assistance in selecting matter for the use of the students.

J. W. MONSER,
Librarian-

MISCELLANEOUS.

DIRECTIONS FOR NEW STUDENTS.

1. If assistance is desired in obtaining board, report to the Proctor at the University buildings.
2. New students will first present themselves to the President, who will issue to them a card of admission to the examinations. This should be done *before paying tuition fees*. Examinations for admission will be given by the English and Mathematical and Agricultural departments on Thursday, Friday, Saturday and Monday, September 8th, 9th, 10th and 12th, preceding the opening of the University.
3. After passing entrance examination \$15.00 must be paid to the Treasurer, and his receipt obtained. The law student pays upon entrance \$50.00 the first year; \$40.00 the second year. The medical student pays upon entrance \$20.00 for the first year; for the second year \$50.00; for the third year \$50.00. This includes the demonstrator's ticket. Engineering students in the professional courses pay upon entrance \$40.00 for the first year; for the second year \$40.00. Agricultural students pay upon entrance \$10.00 in lieu of all other charges.
4. The Treasurer's receipt should be at once presented to the Proctor, when the name of the student will be entered upon the University roll.
5. The academic and professional students must present the card received from the Proctor to the Secretary of the Faculty, who will enroll his name and issue to him his matriculation ticket, with the instructions necessary for enabling him to have his name entered on class roll.
6. Students in the College of Agriculture and Mechanic Arts must present the matriculation card to the Dean of the Faculty in Agricultural hall, who will enroll their names with the necessary instructions to enable them to have their names entered on the class rolls.

RELIGIOUS WORSHIP.

Religious exercises are held every morning from 8:45 to 9 o'clock in the chapel. They consist of readings from the Old and the New Testaments, a brief prayer, and a song by the choir. All students and professors are required to attend these exercises.

STUDIES AND CHAPEL.

1. Academic students are expected to have not less than fifteen nor more than twenty hours per week with the Faculty at lectures or recitations. Class-cards, when once filed with the Secretary, can be changed only by Faculty action.
2. Prompt attendance and orderly conduct at the daily devotional exercises in the University chapel are required of every student in the University.
3. Absences from chapel, as from town, are permitted or excused by the President, or, in his absence, by the Chairman of the Faculty. Class absences are recorded. Excuses are to be rendered to the Professor.

EXAMINATIONS AND CLASS HONORS.

1. Examinations at the end of each semester close the studies pursued to that point. Re-examinations for substitution of grades are not allowed after the lapse of one scholastic year.

2. Only those Academic Seniors who shall have attained "first rank with distinction" shall be eligible to election as valedictorian at Commencement. If more than one Senior shall have attained "first rank with distinction," then the class selects from such students the valedictorian. Otherwise, that student having the highest grade becomes *ipso facto* the valedictorian of the class.

3. All special examinations are in the discretion of the heads of departments.

DEGREES.

The following degrees are now conferred by the University:

In the Academic department, A. B. (Bachelor of Arts), L. B. (Bachelor of Letters), and S. B. (Bachelor of Science).

In the Law department, LL. B. (Bachelor of Laws), and LL. M. (Master of Laws).

In the Engineering department, C. E. (Civil Engineer), Top'l Eng'r (Topographical Engineer), E. E. (Electrical Engineer) and M. E. (Mining Engineer).

A course in Mechanical Engineering will soon be offered, leading to the degree of Mechanical Engineer.

In the Agricultural College, B. Agr. (Bachelor of Agriculture), M. Agr. (Master of Agriculture).

In the Normal department, Pe. B. (Bachelor of Pedagogics).

In the Medical department, M. D. (Doctor of Medicine).

In addition to the above, the usual Master's degree and the degree of Ph. D. are conferred upon the completion of sufficient post-graduate work.

Except that of LL. D., no degree is conferred in course or *honoris causa*.

CERTIFICATES.

A certificate in surveying is granted by the Engineering department, one in Pedagogics by the Normal department, and one in the two-year course in College of Agriculture; also one in the Military department.

DISCIPLINE.

The rules for the government of students are published in pamphlet form, and may be had on application to the Librarian. Every student is expected to procure a copy immediately on his entrance.

FEEES AND EXPENSES.

Annual entrance fee \$10; Library and incidental fee, per semester, \$5: that is, the student who enters the first semester pays \$15, and for the second semester only \$5, having paid his entrance fees for the year, upon admission. If he enters the second semester he pays \$15: *i. e.*, entrance and semester fees.

Engineering students are charged \$40 a year, to be paid upon entrance. This includes the incidental fee. Medical students pay \$20 for first year, \$50 for second year and \$50 for third year, to be paid upon entrance. Law students pay \$50 first year; \$40 second year. This includes the incidental fee, and must be paid upon entrance. Agricultural students pay \$10 upon entrance in lieu of all other charges.

For laboratory fees, see report of department concerned.

The fee for diplomas is \$2; for certificates, \$1. Payment must be made to the Treasurer of the University, and his receipt handed to the Secretary of the Faculty, before the name is recommended to the Curators for the degree.

RESIDENT GRADUATES.

It is hereby resolved by the Board of Curators, That hereafter all regular graduates in any department of the University, and every regular graduate of the Normal Schools established by law within this State, also all regular graduates of "Christian Female College" and "Stephens Female College," located in Columbia, and the graduates of all other regularly chartered literary and scientific colleges in this State, with regular college classes established therein, and that are authorized by law to confer degrees and to grant diplomas to their students, shall be entitled to enter all the departments of the State University, including the Mining department at Rolla, as Post-graduates, free of the payment of tuition fees, and to receive instruction in the same manner as other students in the Practical, Literary and Scientific departments or classes (and all subjects taught in the University), and which they may choose to enter: Provided, however, that neither Law nor Medical students are included in this resolution; and also, that they may have full access to the Library of the University, with all other students, on such terms and under such rules as may be prescribed by the Executive committee. (The Engineering School is also excepted.)

A fee of \$5 per semester for incidental fees is charged.

It is the understanding of the Faculty, that whilst resident graduates thus admitted are to be allowed optional attendance on the classes, without being required to recite, unless it be as a condition of acquiring a class standing, yet otherwise they are to be subject to all the rules of behavior and discipline of under-graduates.

MINISTERS AND STUDENTS PREPARING FOR THE MINISTRY.

Resolved by the Board of Curators of the University of the State of Missouri, That hereafter all regularly ordained ministers of the Gospel belonging to any of the various religious denominations of this State in good standing, and who may desire to improve their scholarship and moral and intellectual culture, shall be allowed to attend any of the schools of the University without the payment of tuition fees, except the schools of Law, Medicine and Civil Engineering—the same privilege to be extended to any young man in this State preparing for the ministry, who will submit testimonials that shall be satisfactory to the President and Faculty of the University, that he is in good faith a candidate for the ministry, and that he is unable to meet the expenses of education at the University without aid.

Adopted June 2, 1880.

For graduate of highest rank from "approved" High Schools see page 59.

BOARDING.

Board in private families, with lodging, washing and fuel, may be obtained for \$3 to \$4.50 a week. Those who enter the club may reduce this amount to \$1.75.

THE CLUB-HOUSES.

The club-houses afford accommodations for 125 students. The room rent for each student is \$10, payable in advance, on or before the first day of September. The cost of board, room-rent, fuel and washing, to those who enter a club, is about \$1.75 per week. Each room is furnished with bedstead, stove, table and two chairs. Occupants are expected to furnish whatever else they deem necessary.

The members of the club have their own officers—president, commissary, secretary, censors, etc. They levy and collect assessments and buy their own provisions.

THE JAMES S. ROLLINS UNIVERSITY SCHOLARSHIPS.

In 1889, the Hon. James S. Rollins left six thousand dollars (\$6,000) to endow six scholarships in the University—"the interest" on this \$6,000 "to be forever used and appropriated under the authority and by the direction of the Board of Curators of the University of the State of Missouri for the following purposes, that is:

"To found scholarships to be awarded by the President and Faculty of the University—the vote in each case to be by ballot—as a reward for excellence and promise in—

"First—The College of Arts, for the degree of A. B., fifty dollars.

"Second—The College of Arts, for the degree of B. S., fifty dollars.

"Third—The College of Agriculture and Mechanic Arts, degree of B. Agr., fifty dollars.

"Fourth—The College of Law, for the degree of LL.B., fifty dollars.

"Fifth—The College of Medicine, for the degree of M. D., fifty dollars.

"Sixth—The College of Engineering, for the degree of C. E., fifty dollars.

"These scholarships are intended as a recognition of merit and character in the beneficiaries, and shall be payable on the first day of June of each year to that member of the Junior class, in each of the colleges designated, who shall be adjudged entitled to it by the President and Faculty; and the names of the persons receiving said scholarships shall be publicly announced on Commencement day by the President of the University.

"In accordng these scholarships, it is earnestly impressed upon the President and Faculty of the University, that in the mind of the donor, purely intellectual and literary ability are not alone to be considered, but that the moral character of the contestants should be regarded as a factor of no small weight in coming to a decision.

"With the earnest hope that by the means here provided, worthy young men and women may in all coming time be helped and encouraged in their struggle toward a higher life and greater usefulness, this fund is committed to the honor and good faith of the State, whom the Board represents, and by whose authority the donation is made and accepted.

I am very respectfully,

(Signed)

JAMES S. ROLLINS."

ROLLINS AID FUND.

[Extract from the will of Anthony W. Rollins, M. D., dated 1843, and probated December 10, 1845. Prob. Record, Book B, pp. 743-4.]

Item 7.—Having felt the great disadvantage of poverty in the acquisition of my own education, it is my will that my executors, hereinafter named, shall, as early after my death as they may deem most expedient, raise the sum of ten thousand dollars by the sale of any lands of which I may die seized, and which I have not specifically bequeathed in any of the foregoing items, which sum of ten thousand dollars I desire may be set apart for the education of such poor and indigent youths of Boone county, both male and female, as are unable to educate themselves.

Item 8.—When my executors shall have raised the sum of ten thousand dollars in the manner specified above, it is my will that they pay over the same to Alexander Persinger, Gilpin S. Tuttle and James W. Dalley, justices of the county court of Boone county, or their successors in office, who may compose the county court of Boone at the time, and that said fund shall remain with and be vested in said court as a permanent fund, for the promotion of the object specified in the seventh item of this will above.

Item 9.—It is my will that the Judges of the county court shall loan out the fund thus vested in them, at an annual interest of ten per centum per annum, and in every instance upon good personal security, with mortgage upon real estate at least in value to the sum loaned, and in such manner as will insure the payment of the interest thereon at the expiration of each year; it is my will, farther, that three-fourths of the interest thus annually accruing shall be set apart, or so much thereof as may be necessary, to pay tuition of

such youths as may have entered the Columbia Female Academy or the State University, under the provisions hereinafter named; and the one-fourth of the interest thus annually accruing, and so much of the remainder as shall not have been appropriated for any one year as above, shall be annually added to and become a part of the permanent fund.

Item 10.—It is my will that the President of the State University of Missouri, and the Principal of the Columbia Female Academy, shall in each year visit the common schools of the different neighborhoods of Boone county, and select from among the indigent boys and girls of the different schools or neighborhoods such of them as are inclined to avail themselves of the advantages of the fund set apart as above, always having reference in their selection to the moral and intellectual qualities of the youths above; and further, that the President, at each annual Commencement of the University, shall direct the public attention to this subject, invite the citizens who may be present to subscribe by way of enlarging the fund from year to year thus appropriated to the education of the poor; and, further, that in selecting boys as above, preference may be given to such as evince an inclination to preach the gospel.

As the Columbia Female Academy has ceased to exist, it is the duty of the President of the University "to select" the beneficiaries as students of the University. (Item 10.) This choice is regulated by several circumstances, as that—

1. The beneficiaries must belong to Boone county, in good faith and not merely nominally. (Items 7 and 10.)

2. They may be "either male or female," but must be needy: *i. e.*, "unable to educate themselves." (Item 7.)

3. Regard must be had to "moral and intellectual qualities." (Item 10.) Hence, (a) preference will be given to such as show superior capacity, whether in the University classes or in the schools; and, perhaps, a system of examinations might aid in the wise and impartial determination of the choice. Hence, also, (b) aid from this fund will, in all cases, be withdrawn from students who incur college discipline, or who fail to maintain a reputation for exemplary conduct and scholarship. The incurring of marks of demerit may be considered such discipline, and falling below the required standard of scholarship, in any study, such failure. Disorderliness in a beneficiary is an aggravated offense, and any part of an apportionment not paid may, on that account, be recalled at any time.

4. Whilst aid is not limited to tuition (Item 7), it is plainly first in the contemplation of the benefactor. (Item 9.) This fund, therefore, has in it the virtue of strengthening the University, whilst it provides for the specific and legitimate exercise of its educational functions, in the interest of the needy, in its own immediate locality.

The will does not provide at whose direction, nor in what sums, the money is to be apportioned, and this, therefore, is left to the good understanding of the county court and the President of the University. In order to aid as large a number as possible, it is ordered by the court that not more than the sum of \$60 per annum shall be appropriated to any one pupil; and in some cases it is found that only part of the tuition and contingent fees is needed, so that the aid which has been extended to over forty during the past year has ranged from \$10 to \$60—those receiving the largest sums being exceptional.

5. If the applicants are "youths" of Boone county, unable to educate themselves, and of good moral and intellectual qualities, whilst a preference is allowed to those having the ministry in view (Item 10), yet there appears to be nothing which excludes such as may have in contemplation any of the professional courses of the University. As the donor, for example, had struggled to obtain his professional education, it would be unnatural to suppose that, by any implication, the "indigent" and worthy professional student would be excluded.

The provision that one-fourth of the interest must annually be added to the principal of this fund may ultimately become a question of great magnitude, which will require judicial determination.

Applications for aid from the Rollins fund must hereafter be in writing; a blank form will be furnished by the Proctor, and when it has been filled it must be placed on file with the President. The applicant must appear in person at the opening of the first semester, September 13, as no reservation will be made.

Dr. Anthony W. Rollins, the founder of this aid fund, was the father of the Hon. James S. Rollins, who was for seventeen years President of the Board of Curators, and as a young man (1839), actively participated in the efforts which secured the location of the University to Boone county.

LITERARY SOCIETIES.

There are three literary societies of young men and two of young women connected with the University, viz.: The "Athenæan," the "Union Literary," the "Bliss Lyceum," the "Philaethæan" and the "Thalian." These societies hold weekly meetings for improvement in debate, declamation, oratory and composition, are in a flourishing condition, and form a most important means of culture, especially in speaking and writing.

An address is delivered before them, during Commencement week, and society diplomas are given to such members as belong to the graduating class.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

The object of this organization, which dates its existence in the University of Missouri from January 18, 1890, is quite the same as in other such institutions of learning, namely, to represent and in every proper way to promote practical Christianity, particularly among the students. Its membership has risen from 65 to 160, its work has been rich in good results, and it has all along enlisted the sympathy and co-operation of the Faculty and the authorities of the University.

Devotional exercises are held Sunday afternoon in the hall of the Association, with an average attendance of nearly 100. Classes hold weekly meetings for the study of the Bible, and special religious services are held from time to time.

A movement of great importance has been set on foot: to erect a building to cost at least \$50,000, for the Young Men's and Women's Christian Associations. For this purpose the former has already pledged the sum of \$6,000, and any encouragement from sympathetic friends will be gratefully acknowledged. It is intended that the building shall be complete in its appointments, containing commodious rooms for reading, lectures, Bible classes, University class organizations, meetings of the Alumni and of the Christian associations, as well as bath-rooms and a gymnasium—in short, an edifice in which the whole State may feel pride and interest.

At the beginning of each scholastic year, a committee from the Y. M. C. A., to be recognized by their badges, will meet students at the trains and freely render them often valuable assistance in securing them boarding by introducing them to friends and to officers of the University, and by various other acts of kindness. A letter sent in advance to the President of the Young Men's Christian Association will receive prompt and cheerful attention.

YOUNG WOMEN'S CHRISTIAN ASSOCIATION.

This association is similar in its aims and methods to the foregoing. It was organized April 2, 1891, and its membership has grown from 32 to 50. Its object is the prosecution of Christian work and the development of Christian character, particularly among the young women of the University. Its weekly meetings are held at 4 p. m. every Sunday, one of them every month being a union meeting in conjunction with the Y. M. C. A.

Equally with the Young Men's Christian Association, the Young Women's shares the hearty and unanimous sanction and encouragement of the Faculty and authorities of the University.

PRIZES.

Stephens Medal—Founded by the Hon. James L. Stephens, a retired merchant of Columbia, and annually awarded for the best oration by a member of the Senior class.

The prize consists of a book in defense of the Christian religion, and a gold medal, for the purchase of which the annual interest on \$500 is available.

Junior Medal—This prize, offered by the literary societies for the best oration, is open to all students of the University below the Senior year.

Declamation Medal—This prize is offered by the literary societies to the best declaimer.

Astronomical Medal—For conditions of award, see Mathematical department.

Dachsel Prize.—\$10 in money, by Charles Dachsel, engineer, Jefferson City, Mo., is awarded for best thesis on steam engine.

McAnally Medal—For best English essay. (See English department, p. 38.)

Latin Prize—See Latin department.

Rollins Scholarships—See page 110.

UNIVERSITY EXTENSION.

Upon the invitation of the Kansas City Society for University Extension, the following courses were offered during the current year:

Constitutional Law, Judge Martin; Semitic Languages, Prof. Blackwell; Roman Religion, Prof. Jones; English Language, Prof. Allen; History of Mathematics, Prof. Smith; Biology, Prof. Purinton; Greek Life, Prof. Manly; Astronomy, Prof. Updegraff; History of Education, Prof. Blanton; Roman Law, Prof. Burnam; Archæology, Prof. Miller; Electrical Engineering, Prof. Shrader. The courses in Constitutional Law, Semitic Languages and English were called for, but could not be given on account of the burning of the main building of the University, which contained the University library and the private libraries of many of the professors.

ALUMNI.

The Alumni Association is composed of graduates of the University. It holds an annual meeting on Wednesday and Thursday of Commencement week, and is addressed in the University chapel by an orator previously selected from its own body.

The objects of this society are the promotion of education, especially in the halls of the Alma Mater, the reunion of early friends and co-laborers in literary pursuits, and the revival of those pleasing associations which entwine themselves about academic life.

The fee for membership is \$2. This is added to the permanent fund, only the interest of which is used. It is hoped that all graduates of the University, whether academic or professional, will become members of the Association. The University Librarian solicits aid in securing facts for the next triennial, and will be thankful for published notices of officers and graduates, and for books, pamphlets and articles, published by them.

The officers of the Association are: President, Hon. Gardiner Lathrop, Kansas City; First Vice-President, Hon. D. W. B. Kurtz, Columbia; Second Vice-President, Dr. H. W. Loeb, St. Louis; Secretary, C. B. Sebastian, Columbia; Treasurer, N. T. Gentry, Columbia; Orator '83, Mrs. Sallie Gentry Elston, Kansas City; alternate, F. N. Peters, Carrollton, Mo.

A subscription fund of \$3,000 has been raised and placed at interest, which is used in defraying the expenses of the annual meeting at Commencement—a very enjoyable and also a very profitable occasion. The Alumni constitute in fact one of the largest elements in the life of the University, and, efficiently organized, may become the most powerful agent in her development and prosperity. No effort should be omitted, both to strengthen the central organization at Columbia and to extend its branches throughout the State.

*Officers of the Local Chapters of the Alumni Association.***Chillicothe:**

T. F. Spencer, President.
Scott L. Miller, Secretary.

Denver, Colorado:

T. M. Field, President.
J. T. Bottom, Secretary.

Fort Smith, Arkansas:

F. A. Youmans, President.
M. D. Hunton, Secretary.

Huntsville:

Dr. John T. Fort, President.
Wm. Palmer, Secretary.

Jefferson City:

Henry W. Ewing, President.
Frank M. Brown, Secretary.

Kansas City:

J. V. C. Karnes, President.
Shannon C. Douglass, Secretary.

Macon City:

R. W. Barrow, President.
John F. Williams, Secretary.

Moberly:

Judge B. S. Head, President.
F. G. Ferris, Secretary.

Richmond:

Thomas N. Lavelock, President.
F. P. Dibelbiss, Secretary.

Salisbury:

Miss Leila Britt, President.
L. W. Martin, Secretary.

Santa Fe, New Mexico:

W. E. Coons, President.
N. B. Laughlin, Secretary.

Sedalia:

Charles E. Yeater, President.
Louis Hoffman, Secretary.

Silver City, New Mexico:

G. W. Miles, President.
R. H. Theilmann, Secretary.

Springfield:

Hon. J. C. Cravens, President.
J. P. Bates, Secretary.

Slater:

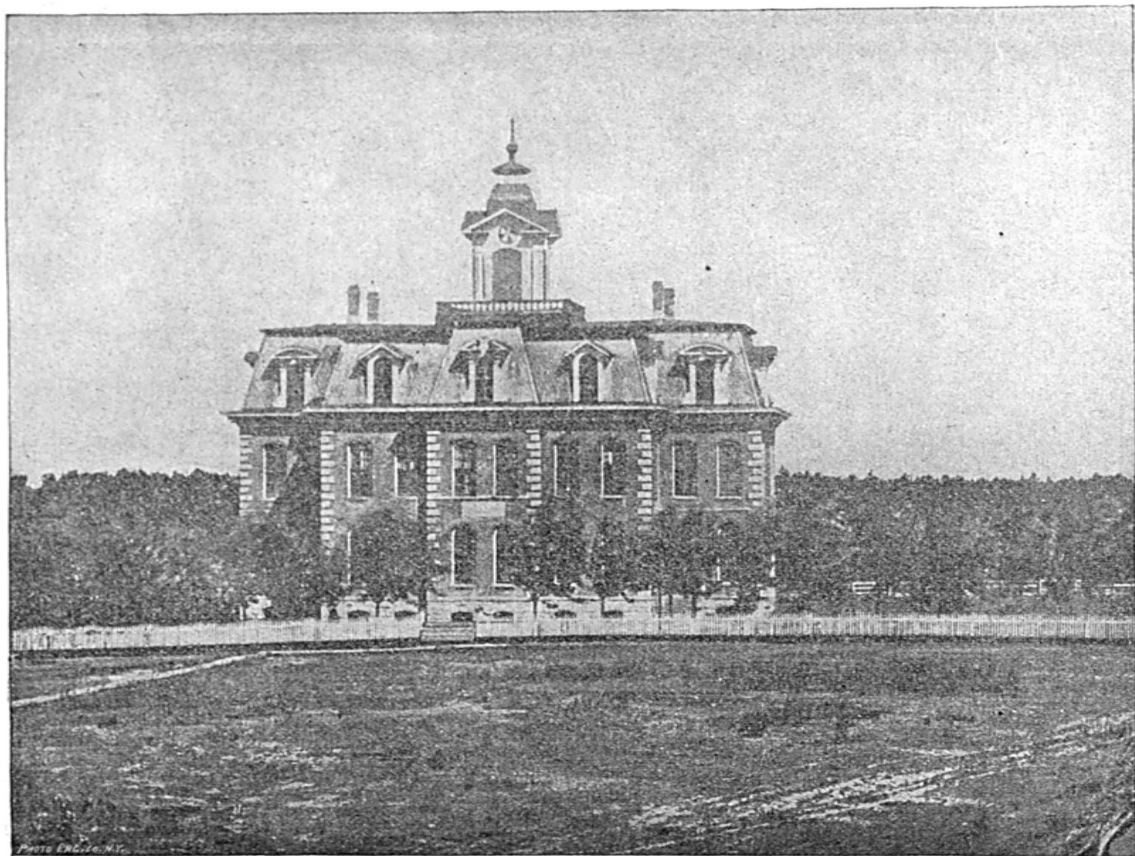
Ulle Denny, President.
Gay Hancock, Secretary.

St. Joseph:

Judge H. S. Kelley, President.
W. H. Utz, Secretary.

St. Louis:

Judge Warwick Hough, President.
R. H. Phillips, Secretary.



SCHOOL OF MINES AND METALLURGY—Located at Rolla, Mo.

XXII. School of Mines and Metallurgy.

Executive Committee.

GEN. E. Y. MITCHELLRolla
 JOHN S. LIVESAY.....Rolla

Officers of the Committee.

EWING Y. MITCHELL.....Chairman
 DAVID W. MALCOLM.....Treasurer
 THOMAS M. JONES.....Secretary

FACULTY.

RICHARD H. JESSE, LL. D.,
President of the University.

ELMO G. HARRIS, C. E. (University of Virginia),
Director and Professor of Engineering.

WALTER BUCK RICHARDS, M. A. (University of Virginia),
Professor of Mathematics.

AUSTIN LEE McRAE, S. D. (Harvard University),
Professor of Physics.

CUTHBERT POWELL CONRAD, M. A. (University of Virginia),
Professor of Chemistry and Metallurgy.

THOMAS LEWIS RUBEY, A. M. (University of Missouri),
Secretary and Instructor in Academic Department.

PAUL J. WILKINS, B. S. (Michigan A. and M. College),
Proctor, and Instructor in Preparatory Department.

FAYETTE A. JONES (Missouri School of Mines, '92),
Assistant in Engineering and Mathematics.

DANIEL C. JACKLING (Missouri School of Mines, '92),
Assistant in Chemistry and Metallurgy.

INTRODUCTORY STATEMENT.

The School of Mines and Metallurgy, an Institute of Technology, was founded in 1870, under the act of Congress, approved July 2, 1862, entitled "An act donating lands to the several states and territories which may provide colleges for the benefit of agriculture and the mechanic arts," as a department of the Agricultural and Mechanical College of the University of the State of Missouri.

It is located at Rolla, a city of 2,000 inhabitants, on the St. Louis & San Francisco railroad, about midway between St. Louis and Springfield, 1,100 feet above sea-level, in a pre-eminently salubrious region.

The course of instruction deals in detail with the principles and the practice of Engineering, with special reference to Mining Engineering, Civil Engineering, Mechanical Engineering, Chemistry and Metallurgy, Mathematics, Physics and Electricity, and includes recitations, lectures, laboratory work and field practice. While a theoretical knowledge of each subject is required, great importance is attached to laboratory work and field practice as a source of mental training as well as a preparation for active pursuits. In the first of these, while a certain standard of excellence must be attained by all, the class system is not adopted, but each student, working independently of others, advances as rapidly as possible.

At the close of the year each member of the Senior class presents to the Faculty some independent investigation in a subject included in his course. These theses, together with all drawings to illustrate them, are preserved in the library of the school.

Provisions are now made for the following technical courses:

- I. Mining Engineering.
- II. Civil Engineering.
- III. Mechanical Engineering.
- IV. Chemistry and Metallurgy.
- V. Mathematics and Physics.

Each leading to the degree of Bachelor of Science.

The requisites for admission to any of these courses are passing grades in the subjects taught in the Preparatory course (see page 128). All the Engineering courses are the same through the Junior year; beyond it they diverge as outlined below.

Besides these regular courses, there are the following special ones:

- I. Assaying.
- II. Surveying.
- III. Electricity.

On the satisfactory completion of any one of these a certificate of proficiency will be given. The requisite for admission to one of these courses is an adequate knowledge of the preparatory subjects.

SCHEME OF STUDIES.

[The numbers in parenthesis refer to the exercises per week.]

ENGINEERING COURSES.

JUNIOR YEAR.

First Term.—General Chemistry (3), Elementary Mechanics (2), Descriptive Geometry (3), Trigonometry (5), Chemical Laboratory (2), Field-Work (2), Drawing (1).

Second Term.—General Chemistry (3), Elementary Mechanics (2), Stereotomy (3), Analytic Geometry (5), Chemical Laboratory (2), Field-Work (2), Drawing (1).

MINING ENGINEERING.

INTERMEDIATE YEAR.

First Term.—Analytic Geometry and Calculus (3), Physics (3), Chemical Technology (3), Mineralogy (2), Civil Engineering (3), Field-Work (2), Physical Laboratory (2).

Second Term.—Assaying (2), Physics (3), Chemical Technology (3), Geology (2), Mining Engineering (2), Chemical Laboratory (3), Physical Laboratory (2).

SENIOR YEAR.

First Term.—Analytic Mechanics (5), Metallurgy (2), Dynamo-Electric Machinery (2), Mining Engineering (5), Physical Laboratory (2), Chemical Laboratory (3).

Second Term.—Metallurgy (2), Electric Transmission of Energy (2), Mining Engineering (5), Physical Laboratory (2), Chemical Laboratory (3). Thesis.

CIVIL ENGINEERING.

INTERMEDIATE YEAR.

First Term.—Same as in Mining Engineering.

Second Term.—Calculus (3), Physics (3), Chemical Technology (3), Geology (2), Civil Engineering (3), Field-work (2), Physical Laboratory (2).

SENIOR YEAR.

First Term.—Analytic Mechanics (3), Dynamo-Electric Machinery (2), Civil Engineering (5), Field-work (2), Physical Laboratory (2), Drawing (2), Practical Photography (1).

Second Term.—Astronomy (1), Electric Transmission of Energy (2), Civil Engineering (5), Field-work (2), Physical Laboratory (2), Drawing (2). Thesis.

MECHANICAL ENGINEERING.

INTERMEDIATE YEAR.

First Term.—Same as Mining Engineering, except *Shop Practice* instead of *Field-work*.

Second Term.—Same as Civil Engineering, except *Shop Practice* for *Field-work* and *Mechanical* for *Civil Engineering*.

SENIOR YEAR.

First Term.—Analytic Mechanics (3), Dynamo-Electric Machinery (2), Mechanical Engineering (5), Shop Practice (2), Physical Laboratory (2), Machine Design and Drawing (3).

Second Term.—Electric Transmission of Energy (2), Mechanical Engineering (5), Physical Laboratory (2), Shop Practice (2), Machine Design and Drawing (3).

CHEMISTRY.

JUNIOR YEAR.

First Term.—General Chemistry (3), Elementary Mechanics (2), German (5), Trigonometry (5), Chemical Laboratory (3).

Second Term.—General Chemistry (3), Elementary Mechanics (2), German (5), Analytic Geometry (5), Chemical Laboratory (3).

INTERMEDIATE YEAR.

First Term.—German (5), Chemical Technology (3), Mineralogy (2), Chemical Laboratory (16).

Second Term.—Same as first term, except *Geology* in lieu of *Mineralogy*.

SENIOR YEAR.

Both Terms.—Metallurgy (2), Chemical Laboratory (30).

MATHEMATICS AND PHYSICS.

JUNIOR YEAR.

First Term.—Elementary Mechanics (2), Descriptive Geometry (3), Trigonometry (5), German (5), Drawing (3).

Second Term.—Same as first term, with *Stereotomy for Descriptive Geometry*.

INTERMEDIATE YEAR.

First Term.—Analytic Geometry and Calculus (3), Physics (3), German (5), English (5), Physical Laboratory (2).

Second Term.—Same as first term, with *Analytic Geometry* dropped.

SENIOR YEAR.

First Term.—Analytic Mechanics (3), Dynamo-Electric Machinery (2), Physical Laboratory (2), Senior Mathematics (5), English (5).

Second Term.—Mathematics (5), Electric Transmission of Energy (2), Physical Laboratory (2), English (5). Thesis.

Department of Engineering.

Prof. HARRIS.

In this department constant effort is made to give the student a working knowledge of his subject. He is taught to obtain practical results in the most direct and economical way, and is daily exercised in such problems as will come up in every-day practice. In field practice the Juniors enter the corps as rodmen, the Intermediates as instrumentmen, while the Seniors are placed in charge, under direction of the instructor.

The department is equipped with field instruments of the best make, sufficient for two full corps at once. Other instruments and apparatus will be added to meet all requirements.

One of the chief objects in view at present is to develop the facilities for instruction in mechanical engineering. We are not yet prepared to offer a complete course in shop practice, but thorough theoretical instruction is given, and a good beginning has been made for furnishing the practical training.

MINING ENGINEERING.

JUNIOR.

First Term.—Descriptive Geometry: Parallel and central projections as applied in draughting, with constant exercises in determining orthogonal and oblique projections of familiar objects.

Field-work.

Second Term.—Stereotomy: Descriptive geometry as applied to the art of stone-cutting.

Field-work.

INTERMEDIATE.

First Term.—Field Instruments: The field instruments of the engineer dissected and studied in detail as to theory, construction, adjustment, uses and capabilities.

Engineering Geodesy: General and particular methods of traversing, triangulating, direct and indirect leveling; land, city, topographical and hydrographical surveying; United States system of subdivision of land.

Field-work. Drawing.

Second Term.—Mine Surveys.

Exploitation of Mines: Theory of deposits in beds, lodes and pockets; prospecting, exploration and development by shafts, inclines and tunnels; underground transportation, drainage, ventilation, lighting.

Tunneling, Masonry, Quarrying: Strengths of stone and brick, cements and mortars; foundation, stability of masonry structures.

Drawing.

SENIOR.

First Term.—Hydraulics: Collection and measurement of water, conveyance through pipes and canals; designs of dams and pipe lines.

Prime Movers: Hydraulic motors, steam engines and boilers, horse-power appliances.

Graphical Statics.

Second Term.—Transmission of power: Cable, compressed air, electricity.

Mining Machinery: Pumps, ventilators, hoists, drills.

Mechanical Concentration of Ores.

Drawing. Thesis.

CIVIL ENGINEERING.

Junior year and first term of the Intermediate same as under Mining Engineering.

INTERMEDIATE.

Second Term.—Railroad Engineering: Surveys, construction and maintenance.

Highway Engineering: Surveys, construction and maintenance; street paving.

Field-work. Drawing.

SENIOR.

First Term.—Same as under Mining Engineering.

Second Term.—Bridge Engineering: Determination of loads, strains and dimensions for bridges, roofs and other framed structures.

Hydraulic Engineering: Water supply of cities and towns, sewerage; irrigation.

Field-work. Drawing. Thesis.

MECHANICAL ENGINEERING.

JUNIOR.

Identical with Junior Mining Engineering, with shop practice substituted for field-work.

INTERMEDIATE.

First Term.—Same as first term in Intermediate Mining Engineering.

Second Term.—Kinematics. Drawing. Shop Practice.

SENIOR.

First Term.—Same as first term in Senior Mining Engineering.

Second Term.—Transmission of power: Cable, compressed air, electricity.

Mechanics of Machines.

Drawing. Thesis.

DRAWING.

FIRST YEAR.

The first year's work for all regular students in the Engineering department is almost entirely at the drawing-board. Here belongs naturally all work in Descriptive Geometry and in Stereotomy. The use of drawing instruments—simple problems in points, lines and planes—graphical solution of the more complicated problems—shading of projections, in pencil, by free-hand pen-work, with the ruling-pen, in water-colors and India-ink.

SECOND YEAR.

Work assigned according to the profession chosen by the student. The students in Civil and in Mining Engineering will select some complete engineering structure and present it in simple plan and elevation—one in axonometric, another in perspective—all neatly shaded, tinted and lettered. All field surveys must be plotted neatly, and one topographical drawing made from notes taken in the field by the student will be required of each. The student in Mechanical Engineering will be continuously exercised in mechanical and machine drawing.

THIRD YEAR.

Seniors have a variety of exercises in Graphical Statics, and are required to present working drawings of many structures, such as bridges, arches, dams, etc. The thesis must be accompanied by drawings fully illustrating it.

Department of Chemistry and Metallurgy.

Prof. CUTHBERT P. CONRAD.

The courses in this school have been especially arranged to supply the needs of those who wish to prepare themselves for positions as Assayers, Chemists and Mining Engineers. Students who are desirous and capable of accomplishing special lines of work may arrange for such courses in Analytic Chemistry and Assaying as are adapted to their special requirements.

Instruction in the following courses is given each session:

1. *General Chemistry*.—Chemical Physics, Chemical Philosophy, Inorganic and Organic Chemistry, regular weekly exercises in Stoichiometric and other chemical problems. Junior—three times a week both terms.

Text-Books: Lecture Notes, Fowne's Chemistry.

2. *Chemical Technology*.—Smelting and treatment of ores of metals—manufacture of acids, salts, glass, paper, mortar, cements and other building materials, sugar, wine, spirits, oils, paints, soaps, bleaching materials, fuels, etc., etc. A general cabinet, illustrative of all branches of Chemical Technology, is being gradually collected. Intermediate—three times a week, both terms.

Text-book: Wagner's Chemical Technology, 18th edition.

3. *Metallurgy*.—In addition to the brief course required of the Intermediate class, the members of the Senior class meet weekly for the discussion of assigned topics in the metallurgy of gold, silver, copper, zinc, lead and iron. Attention is directed to fuels, fluxes, air supply, furnaces, refractory materials, study of slags, preparation and concentration of ores, improved forms of stamps, mills and pans. The modern methods of Hydro-metallurgy and Electro-metallurgy are treated with merited fullness. Special topics are assigned to each student, upon which he is required to prepare a paper embodying the results of his reading in authoritative works on Metallurgy, Current Literature, Journals, Transactions, etc., with which the library is well supplied. These papers are taken up in class and critically discussed by the other students. It is expected to make visitation to the Mining and Metallurgic works of the State a part of this course.

4. *Blowpipe Analysis and Determinative Mineralogy*.—This class meets regularly three times each week throughout the first term of the Junior year. Previous to beginning regular analysis with the blowpipe, each student is required to complete a short course in blowpipe practice; after which, metals, oxides, salts and alloys are given, upon the composition of which, as determined by blowpipe tests alone, he is required to report. This work is followed by a thorough course in Determinative Mineralogy, during which the student examines, identifies and classifies 100 native minerals.

Text-books: Printed Notes and Schemes, Foye's Hand-book of Determinative Mineralogy.

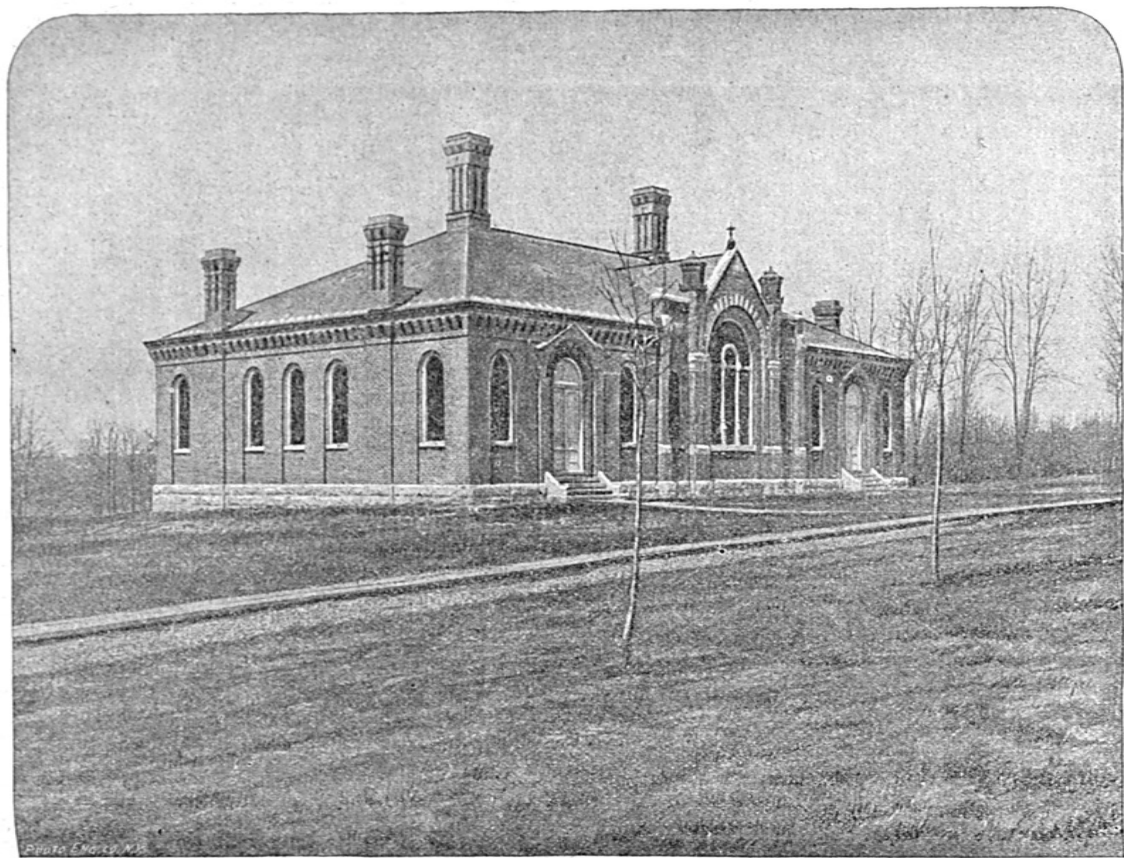
5. *Analytic Chemistry*.—This course is begun with a series of selected exercises in Manipulation and Laboratory Practice. A systematic and thorough course of Qualitative Analysis follows. After the student attains sufficient skill to enable him to determine the composition of substances given him, and to make complete and accurate separations, he is allowed to begin Quantitative Analysis.

Text-books: Clowe's Handbook, Thorpe, Bolton, Classen, Fresenius, Crookes.

6. *Assaying*.—Intermediate—second term.

Special attention in this course is given to the rapid estimation and valuation of ores and furnace products, both by the fire and the wet assay.

Fire Assays: Gold and silver ores, also mill checks, are made the subjects of special study and assays, both by the crucible and scorification methods, are required. Lead and copper ores are assayed by fire methods applicable to the ores in question.



CHEMICAL LABORATORY.

Wet Assays: Volumetric methods are carefully studied and applied to the rapid determination of copper, zinc, iron, etc., etc.

Text-books: Rickett's Assaying, Sutton's Volumetric Analysis.

Special students may pursue, by permission, the study and analysis of any class of ores or metallurgical products. Young men who have neither the time nor means to spare to take the full course may accomplish much in the way of chemical analysis and assaying by devoting their entire time to it during a single year.

All Laboratory students furnish their own blowpipes, platinum, crucibles and apparatus, silver and gold solutions, and pay for gas and fuel consumed and for apparatus damaged or broken.

A deposit of \$5 per term, covering the value of the apparatus and chemicals issued, is required to be placed in the hands of the Treasurer by each Laboratory student. This deposit, less the value of material consumed, is returned at the close of the year.

THE CHEMICAL LABORATORY.

The Chemical Laboratory has been in use five years, and has been found satisfactory. It was planned and built solely with reference to the work in the school, and the entire building is used by the Chemical department.

It consists of the quantitative laboratory, the qualitative laboratory, professor's laboratory, lecture room, assay laboratory and weighing room, a quantitative and qualitative evaporating room, preparation room, a supply room and two basement rooms, and furnishes accommodations for seventy-five students.

No pains have been spared to make the assay laboratory complete in every respect. It is located on the first floor, and not in the basement. The reduction furnace, as well as the muffle furnaces, are of the newest and best. Two large muffle furnaces, two smaller ones, one gas furnace, an ore crusher, pulverizing plate, ore and assay balances, with other facilities, are provided for the use of students.

Facilities for securing heat, light and ventilation are excellent; ample provision is also made for carrying off foul and dangerous gases; gas and water are supplied to each table. All parts of the building are thoroughly and judiciously equipped, and nothing has been left undone to make this laboratory one of the most complete in the country.

It is open to students daily from 8 a. m. to 5 p. m.

Department of Mineralogy and Geology.

Temporarily Assigned to Prof. CONRAD.

The instruction on these subjects begins with Determinative Mineralogy in the Junior year, and is continued with Systematic Mineralogy, Petrology and Geology in the Intermediate year.

Models, diagrams, natural crystals and goniometers are used in imparting a knowledge of the principles of Crystallography.

The course in Mineralogy is fully illustrated by a complete and well-arranged cabinet of minerals.

In addition to the usual course of Dynamical, Structural and Historical Geology, special attention is given to Chemical and Economic Geology. The course of instruction embraces the origin of vein stones and ore deposits, mineral waters, coal, petroleum and natural gas.

The study of geology is made interesting and practical by complete stratigraphical and paleontological collections, and by field-work and excursions.

Department of Mathematics.

Prof. RICHARDS.

JUNIOR.

First Term.—Trigonometry, Plane and Spherical, Fundamental Definitions and Formulae—Construction and use of Logarithmic tables—Solution of triangles—Computation of actual heights and distances.

Second Term.—Conic Sections and a few Higher Plane Curves.

Text-books: Wells' Plane and Spherical Trigonometry, Wentworth's Analytic Geometry. For reference—Todhunter's Plane and Spherical Trigonometry, Puckle's Conic Sections, Salmon's Conic Sections, Searle's or Henck's Field-book. Daily, both terms, required in all the courses.

INTERMEDIATE.

First Term.—Analytic Geometry of Three Dimensions, chiefly the Conicoids.

Second Term.—Infinitesimal Calculus.

Text-books: Venable's Notes on Solid Geometry, Taylor's Elements of the Calculus (with Notes and Lectures). For reference—Salmon's, Todhunter's and Williamson's mathematical works. Thrice weekly, required in Courses I, II, III, V.

For students of Mining Engineering, to compensate for larger requirements in Chemistry and Metallurgy, a briefer treatment of the above subjects, extending through one term, will be given.

SENIOR.

Designed only for students in the special course in Mathematics and Physics (V), and such others as may wish to extend their mathematical studies beyond the usual undergraduate range; subject to variation from year to year, at the Professor's discretion, to meet the needs and accord with the purposes of the applicants.

First Term.—Analytic Geometry and Calculus, select chapters of Salmon's Conic Sections and Williamson's Differential and Integral Calculus.

Second Term.—Select portions of some two of the following subjects: Projective Geometry (Cremona), Theory of Equations (Todhunter), Determinants (Muir's), Differential Equations (Forsyth), Quaternions (Kelland & Tait, and Tait).

Lectures on the history of Mathematics are given during the year.

The library contains the chief works on mathematics, in English, French and German, and affords the student an opportunity of extending his research at will.

The beginning of a Mathematical Seminar has been made this year. Nine men responded voluntarily to the invitation to join a club for independent mathematical study. These, with occasional visitors, meet on alternate Thursdays and listen to a lecture by the Professor or to papers by some of their own number, the meeting closing with a general discussion of the topic under consideration. Some of the subjects studied this year have been: The Early History of Mathematics; Theory of Numbers; the so-called Imaginaries, their Geometric Interpretation and Analytic Use; the Solution of Higher Equations.

Department of Physics.

Prof. McRAE.

This department was organized in September, 1891, and includes the subject of Analytic Mechanics. Two rooms on the third floor and two in the basement of the main building have been fitted up as a Physical Laboratory. A workshop is supplied with the necessary tools, and the student is encouraged in designing and making, with his own hands, any special apparatus he may require. A steam engine and boiler, with the necessary shafting and pulleys, have been placed in the basement. A United States dynamo serves the double purpose of lighting the building and of furnishing a current for electrical measurements. An eleven-inch swing Reed lathe, with both foot and power attachments, allows wood and metal turning, screw cutting, etc., to be performed with facility.

APPARATUS.—Atwood's machine, large air pump with accessories, standard and chemical thermometers, standard mercurial and aneroid barometers, hydrometers, sonometer and standard tuning fork, Toepler-Holtz electrical machines, Leyden jars, large Ruhmkorff coil, Geissler's and Crook's tubes, Wheatstone bridges, resistance boxes, galvanometers, batteries, Weston volt-meter, telephone and telegraph instruments, Weston ammeter, Beck microscope, oxyhydrogen cylinders, three optical lanterns, lenses, glass and bi-sulphide of carbon prisms, a large porte lumiere, and a fine collection of mechanical, physical and astronomical lantern slides. New instruments are added to the laboratory as fast as the funds of the school permit.

JUNIOR.

Both Terms.—Elementary Mechanics: Twice weekly.

INTERMEDIATE.

Physics: This class meets three times a week and spends two afternoons a week in the Physical laboratory.

First Term.—Meteorology, with special reference to rainfall and water supply; Heat, general principles, thermometry and calorimetry; Optics, optical instruments and photometry; Measurements in laboratory.

Second Term.—Electricity and Magnetism; Telegraph and Telephone Circuits; Electrical testing in laboratory.

SENIOR.

First Term.—Practical Photography: Required of students in Civil Engineering, elective for others. Once weekly.

Analytic Mechanics: Thrice weekly.

Second Term.—Practical Astronomy: One lecture a week on determining time, latitude and longitude.

Electric Transmission of Energy: Two lectures a week. Electric lighting, electric railways, electric pumping, hoisting and ventilating apparatus will be studied.

Two afternoons a week throughout the year are spent in the laboratory.

Students in Metallurgy will also receive instruction in the electrical methods used in the extraction, purification and deposition of metals.

Post-graduates or special students in Physics, after completing the prescribed course, may take up Mascart and Joubert's Electricity and Magnetism, Fourier's Theory of Heat, Minchin's Kinematics and Williamson's Dynamics or Practical Electrical Engineering.

ACADEMIC COURSE.

The following course of study was established in pursuance of an act of the Legislature of Missouri in 1885. Students must have completed the studies of the first year of the preparatory course before they can enter the regular academic course. A diploma of graduation will be granted to students who complete this course.

FIRST YEAR.	
<i>First Term.</i>	<i>Second Term.</i>
General History.	General History.
German.	German.
Geometry (plane).	Geometry (solid).
Civil Government.	Botany.
SECOND YEAR.	
Elementary Physics.	Elementary Chemistry.
English and American Literature.	English and American Literature.
German.	German.
Higher Algebra.	Higher Algebra.
THIRD YEAR.	
English History.	Political Economy.
Zoology.	Logic.
Psychology.	Descriptive Astronomy.
Rhetoricals.	Physical Geography.
Book-keeping (optional).	

PREPARATORY COURSE.

This course is maintained for such as find special preparation for the advanced courses necessary. Students on completing it are admitted to any of the advanced courses without examination.

FIRST YEAR.	
<i>First Term.</i>	<i>Second Term.</i>
Higher Arithmetic.	Higher Arithmetic.
English Grammar.	Composition and Rhetoric.
Elementary Algebra.	Algebra.
United States History.	Physiology and Hygiene.
SECOND YEAR.	
English.	English.
Higher Algebra.	Higher Algebra.
Elementary Physics.	Solid Geometry.
Plane Geometry.	Elementary Chemistry.

GENERAL INFORMATION.

BUILDINGS AND EQUIPMENTS.

The buildings of the School of Mines are situated in the most elevated part of the city of Rolla. They are substantial brick structures, well ventilated and lighted, and heated by the best furnaces manufactured. The main building has recently been painted and kalsomined throughout, and the laboratory, one of the most complete in the country, has been in use but five years.

The different departments of the School are well supplied with apparatus. Several hundred dollars have been expended this year in the purchase of instruments and apparatus for the departments of Engineering, Chemistry and Physics, and farther purchases will be made as additional needs are felt and financial condition of the School will allow.

The students' club-house, or dormitory, built in 1890, contains commodious and comfortable rooms for thirty young men. Two students occupy one room. The dining hall and culinary department can accommodate sixty. This year the students pay \$12 a month for board in the club-house. Whenever they shall deem it desirable the students will be allowed to form themselves into a club and employ their own caterer. In this manner it is believed that they will be able to board themselves at comparatively low cost.

Students wishing to engage rooms in the club building for next year should do so before September 1, as the supply of rooms may be exhausted. To engage a room a deposit of \$5 is required as an earnest of good faith on the part of the student. This money will be refunded at the opening of school whether the student take the room or not.

EXPENSES.

A matriculation fee of \$10, payable on entrance, and a library fee of \$2 a term, payable on the first day of each term, are required of every student.

All laboratory students furnish their own blowpipes, platinum, silver and gold solutions, crucibles and apparatus, and pay for gas and fuel consumed and for apparatus damaged or destroyed. A deposit of \$5 per term, covering the value of the apparatus and chemicals issued, is required to be placed in the hands of the Treasurer by each laboratory student. This deposit, less the value of material consumed, is returned at the close of the year.

Board, including fuel, lights, washing, etc., can be obtained for \$12 to \$15 a month.

The necessary expenses for the year are as follows:

	Moderate.	Ample.
Matriculation fee.....	\$10 00	\$10 00
Library fee	4 00	4 00
Books, stationery and chemicals	15 00	25 00
Board, fuel, lights, washing, etc.....	98 00	185 00
Total.	\$125 00	\$174 00

LIBRARY.

The library contains 2,700 volumes. Extensive works upon Engineering, Mathematics, Chemistry, Physics, Assaying and Metallurgy afford to all students in these departments an excellent opportunity to pursue an extended course of reading in connection with their class work. The library also contains the standard works in English and American poetry, fiction, biography and history, provided with especial view to the needs of Academic students. The following periodicals for the current year are found on the reading tables of the library:

American Chemical Journal.	Journal of Analytical and App. Chemistry.
American Journal of Science.	Judge.
American Journal of Mathematics.	Ladies' Home Journal.
Annals of Mathematics.	Leslie's Illustrated Weekly.
Century Magazine.	Life.
Chemical News.	Literary Digest.
Electrical World.	Lippincott.
Engineering Magazine.	Nature.
Engineering News.	Nation.
Engineering and Mining Journal.	North American Review.
Forum.	Philosophical Review.
Harper's Monthly.	Popular Science Monthly.
Harper's Weekly.	Popular Science News.
Public Opinion.	Scribner's Magazine.
Puck.	Scientific American.
Railroad and Engineering Journal.	Scientific American Supplement.
Science.	

The library is open daily from 8:30 a. m. to 4:30 p. m. Books may be taken out by the students under certain regulations.

ATHLETICS.

Through the liberality of the Curators an athletic field has been enclosed and graded for the benefit of the students. It furnishes ample space for base-ball, foot-ball and lawn tennis. An athletic association exists among the students, and it is hoped that means will soon be provided for the erection of a gymnasium.

LITERARY SOCIETIES.

Two literary societies were organized during the year—the Philo Literary society by the young men and the Alpha club by the young women of the school. The "Alpha" meets every Saturday afternoon and the "Philo" every Saturday evening for improvement in debate, oratory and composition.

TERM EXAMINATIONS.

During the last week of each term all students are required to stand written examinations on the studies pursued, and the results of these examinations, with the average monthly grades, determine their term grades. A student, to pass, must attain at least 75 per cent.

MONTHLY REPORTS.

Regular monthly reports are sent to the parents or guardian of each student, showing the student's grade in scholarship for the month, and giving such other information in regard to his progress, attendance, etc., as may be thought to be of interest. The attention of parents and guardians is particularly called to these reports.

DEGREES.

A certificate of distinction is conferred on one who has attained three-fourths of the value of the questions at an intermediate or final examination.

UNTITLED DEGREES.

1. A Certificate of Proficiency is conferred on one who has attained the required standard at all the examinations in any of the following special courses: Geology and Mineralogy, General Chemistry, Fire Assaying, Botany and Zoology, Physics, Geodesy, and the Preparatory course.

2. A Diploma of Graduation is conferred on one who has passed all examinations in any of the following departments: Mathematics, Physics, Analytical Chemistry, Engineering, and the Academic course.

SCIENTIFIC DEGREES WITH TITLES.

The degree of *Bachelor of Science in Mathematics and Physics* is conferred upon one who has passed examination on all the subjects of instruction in the course of Mathematics and Physics.

2. The degree of *Bachelor of Science in Chemistry* is conferred on one who has passed examination on all of the work of the special Chemical course.

PROFESSIONAL DEGREES WITH TITLES.

1. The degree of Bachelor of Science in Civil, Mining, Mechanical Engineering, respectively, is conferred on one who has passed examination on all of the subjects of instruction in the Civil, Mining, Mechanical Engineering Course, respectively.

2. The degree of Civil, Mining, or Mechanical Engineer is conferred on one who, having graduated in Civil, Mining or Mechanical Engineering and received the Bachelor's degree therein, has identified himself with the profession during a period of not less than three years, and during that time has demonstrated by work his fitness for his chosen profession.

COMMENCEMENT.

The annual Commencement exercises are held in the Assembly room, at the close of the work in June. The exercises consist of an address by some prominent speaker, the conferring of degrees and granting of diplomas by the Director, and an essay or oration by some member of the graduating class.

At the Commencement exercises on Thursday, June 11, 1891, the address was delivered by Rev. Waller E. Boggs, of Caledonia, Mo.

Certificates of proficiency were conferred on the following students for the satisfactory completion of the subjects indicated:

Mathematics—

Dean, Geo. R.

Analytical Chemistry—

Johnson, E. M.

Seamon, F. H.

Stewart, Arthur J.

Assaying—

Jones, F. A.

Jones, H. I.

Physics—

Dean, Geo. R.

Holman, Wm. P.

The following degrees were conferred:

Bachelors of Science—

George R. Dean, B. Sc.,

Mathematics and Physics.

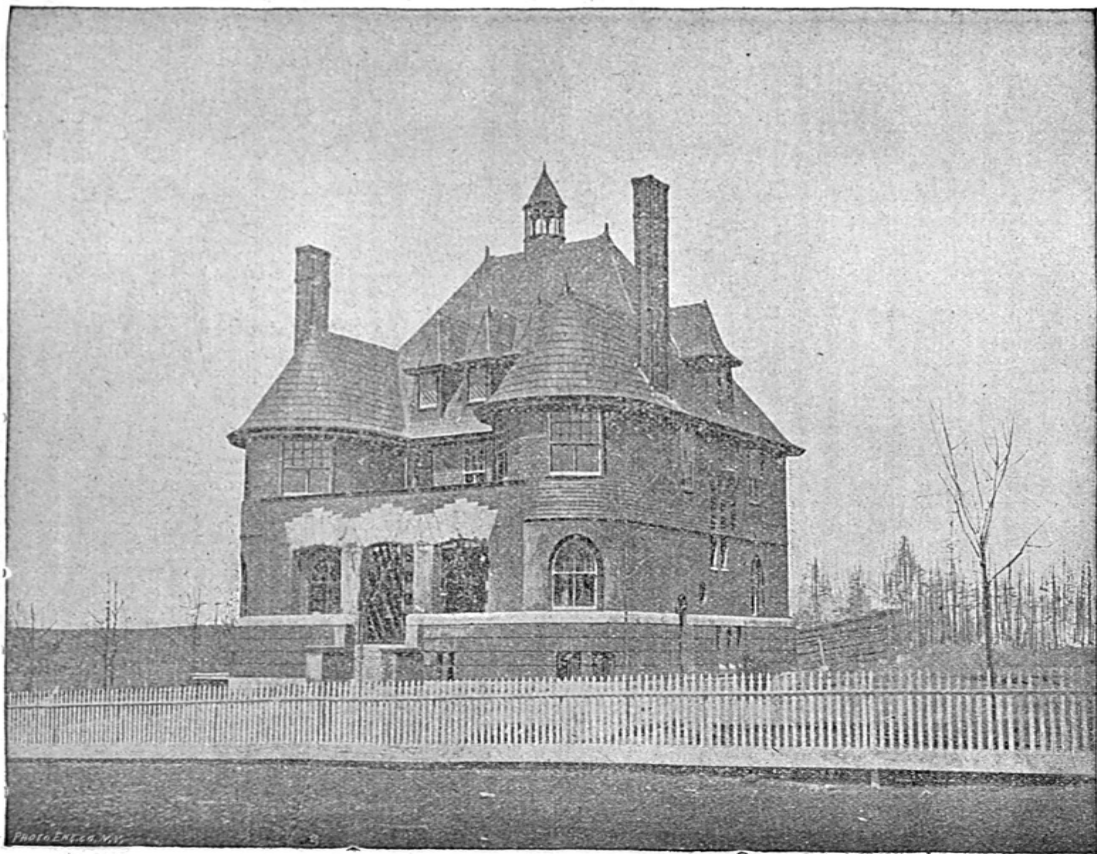
Arthur J. Stewart, B. Sc., Chemistry.

Sally Millard, B. Sc.,

General Course.

Mining Engineer—

Frank H. Seamon.



CLUB-HOUSE.

LIST OF STUDENTS.

ACADEMIC STUDENTS.

Name.	Postoffice.	County.
<i>POST-GRADUATES.</i>		
Froley, John W.	Shelbina	Shelby
Hancock, Etta	Keytesville	Chariton
<i>UNDER-GRADUATES.</i>		
<i>SENIOR CLASS.</i>		
Adams, Newton T.	Shelbina	Shelby
Bronson, Harl Howard	Sedalia	Pettis
Brown, George Lincoln	Reynard	Bates
Caldwell, Robert	Weatherby	DeKalb
Conley, Milton Robards	Columbia	Boone
Denny, James Milton	Roanoke	Howard
* Fellows, John Nelson	Weaton	Platte
Goodrich, James Edward	Cameron	Clinton
Hancock, Alice	Keytesville	Chariton
Hart, Harry Gill	High Point	Moniteau
Hatton, Moses Wesley	Farmington, Io	
Keyser, Cassius Jackson	McCurry	Gentry
Lamotte, John Harry	Roanoke	Howard
Lynch, Samuel Adams	Columbia	Boone
Mansfield, Mary	St. Louis	
* Moore, Harry Lancaster	Pueblo, Col	
Sams, Wm. Meade	Kansas City	Jackson
Selsor, Mark	Madelaine	Davless
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<i>JUNIOR CLASS.</i>		
Adams, Jennie	Shelbina	Shelby
Anthony, Francis Richard	Maryville	Nodaway
Asendorf, George Wm Henry	Craig	Holt
Beach, Emory V.	Helena, Mont	
Bishop, John Edmond	California	Moniteau
Bryan, Richard Franklin	Carbon Centre	Vernon
* Burlington, Samuel Augustus	Salisbury	Chariton
Debord, King	Fillmore	Andrew
Donohue, Mary	Columbia	Boone
Eltzen, Cora Allis	Washington	Franklin
Gerig, Ida	Columbia	Boone
Gerling, Henry Joseph	"	"
* Haines, Charles Gregg	"	"
Hanzzen, Lydia	Jefferson City	Cole
Hartzell, Florence	Cape Girardeau	Cape Girardeau
Hodge, Robert Walter	Brunswick	Chariton
Hoffman, Gustave Adolph	Boeger's Store	Osage
Kiehl, Herman G.	Beemont	Franklin
Myer, Jesse	Salisbury	Chariton
Pettingill, Minnie	Centralls	Boone
* Taylor, Thomas Jackson	St. Louis	
Tefft, Jonathan Edward	Springfield	Greene
Wade, John Franklin	Boickow	Andrew
* Walker, Harry Bruce	Skidmore	Nodaway
Weltner, Benjan in Franklin	Wellsville	Montgomery
White, James Paul	Franklin	Howard

Name.	Postoffice.	County.
SOPHOMORE CLASS.		
*Allen, Edward Thorpe.....	Columbia.....	Boone.....
Atterbury, Eugene.....	Madsen.....	Monroe.....
*Aydelott, Walter Cecil.....	Truxton.....	Lincoln.....
Barber, Lizzie.....	San Antonio, Tex.....	Lincoln.....
Barnett, Beulah.....	Columbia.....	Boone.....
Blair, Ivan Leo.....	Craig.....	Holt.....
Broadhead, Garland Carr.....	Columbia.....	Boone.....
Burnam, John Charles.....	Pueblo, Colo.....	Boone.....
*Campbell, Wm. Thaddens.....	Lee's Summit.....	Jackson.....
Davidson, Everett Jerome.....	Aurora Springs.....	Miller.....
Eppes, Thomas Jefferson.....	Columbia.....	Boone.....
*Fyfer, John Kirkbride.....	Marshall.....	Saline.....
Gaines, Charles Latham.....	Hinton.....	Boone.....
Goslin, Benjamin Fracklin.....	St. Louis.....	Boone.....
Granger, Orrin Wilbur.....	Plattsburg.....	Clinton.....
Guyer, Michael Fred.....	Columbia.....	Boone.....
Hack, Mary.....	Deer Park.....	Boone.....
Haydon, Curtis.....	Fairfax.....	Atchison.....
*Howell, Charles M.....	Garland.....	Henry.....
*Immer, George C.....	Warrensburg.....	Johnson.....
*Jay, David Wm.....	Columbia.....	Boone.....
*Mitchell, Homer Rawlins.....	White's Store.....	Howard.....
Peeler, Wm. Barale.....	Curryville.....	Fike.....
Riggs, Norman Colman.....	Columbia.....	Boone.....
Riggs, Inez Lucretia.....	Kansas City.....	Jackson.....
Shaefer, Jean Augusta.....	".....	Jackson.....
Smith, John Bertram.....	St. Catharine.....	Linn.....
*Smith, J. Roy.....	Nevada.....	Vernon.....
Spalding, Elliott.....	Moberly.....	Randolph.....
*Stone, Kimbrough.....	Columbia.....	Boone.....
Terrill, Vincent Calvin.....	Marshall.....	Saline.....
Terrill, Henry Roberts.....	Fillmore.....	Andrew.....
Turner, Edwin.....	Indian Grove.....	Chariton.....
Wattack, John Allen.....		
Williams, Henry Clay.....		
Zillman, Christian Charles.....		
FRESHMAN CLASS.		
Alee, Gall Darwin.....	Olean.....	Miller.....
Banks, Anna.....	Columbia.....	Boone.....
Barnett, Sentiny Rives.....	".....	".....
Barnett, Mary Jessie.....	".....	".....
*Bautzer, Edward Hugh.....	".....	".....
Beazley, George Hamilton.....	".....	".....
Berry, Thomas Dorsey.....	Brookston, Tex.....	Boone.....
*Blanton, Martha.....	Columbia.....	Boone.....
*Bodine, Cooper Parsons.....	Shelbina.....	Shelby.....
Botts, Wm. Ford.....	Kansas City.....	Jackson.....
Royer, John Sidney.....	Easton.....	Buchanan.....
Bradford, Alexander.....	Columbia.....	Boone.....
*Briegleb, Charles Ferdinand.....	St. Clair.....	Franklin.....
Coleman, George Wm.....	Rich Hill.....	Bates.....
†Conley, Wm Kirtley.....	Ashland.....	Boone.....
Conley, Wm. Thompson.....	Columbia.....	".....
Cook, Sydney Francois.....	Clarksburg.....	Moniteau.....
Cooper, James Wm.....	S McAlester, I.T.....	Boone.....
Crumbaugh, Lucy Neil.....	Columbia.....	Boone.....
*Curtis, Oramel Moffat.....	Warrensburg.....	Johnson.....
*Dawes, Hamilton Miller.....	Marshall.....	Saline.....
*DeBerry, Wm Angus.....	Plattsburg.....	Clinton.....
Detweiler, Andrew Jackson.....	Washington.....	Franklin.....
*Dillenbeck, Chas. Leroy.....	Shelbina.....	Shelby.....
*Downing, Robert Edward.....	Saline.....	Adrain.....
Doyle, John Harrison.....	Tina.....	Carroll.....
*Drum, John Wm.....	Marble Hill.....	Bollinger.....
*Dudley, C C.....	Withers' Mill.....	Marion.....
*Duval, Jacob Beauford.....	Virginia.....	Bates.....
Edwards, G. D.....	Columbia.....	Boone.....
*Eills, E F.....	Commerce.....	Scott.....
*Evans, Edwin E.....	Meadville.....	Linn.....
*Flacher, Oscar K.....	Salem.....	Dent.....
*Fowler, Thomas Robert.....	Sedalia.....	Pettis.....
Fullbright, Jay.....	Rothville.....	Chariton.....
*Goodnight, Thomas.....	Montserratt.....	Johnson.....
Griggs, Austin B.....	Hedge City.....	Knox.....

† Dead.

Name.	Postoffice.	County.
Guitar, Odon	Columbia	Boone
Haden, Homer	Frankford	Pike
*Hamilton, A. P	Missouri City	Clay
Hancock, Mary	Keytesville	Chariton
Hawkins, A. B	Paris	Monroe
Hayes, Thomas A	Adair	Adair
*Hays, Wm Henry	Jackson	Cape Girardeau
*Hill, Frank W	Keytesville	Chariton
Hill, George Washington	Rocheport	Boone
Howard, Edward	Jackson	Cape Girardeau
Jackson, Clarissa	Columbia	Boone
Jarvis, Earle		
Jewett, H. H	Shelbina	Shelby
*Jones, Wm. Thomas	Humphreys	Sullivan
Kahn, Otille	Brookfield	Linn
Keyser, Ella Maude	Ridgeway, O	
Kraemer, Eugene	California	Moniteau
Letchworth, Thomas J	Versailles	Morgan
Letton, Chas. Hedrick	Walker Station	Vernon
Loeb, Clarence	Columbia	Boone
Mairs, Thomas Isaiah	Browning	Sullivan
Mauring, John F	McFall	Gentry
Marshall, Wm. N	Unionville	Putnam
*McCluer, Robert Watson	O'Fallon	St. Charles
*McCulloch, Albert J	Pisgah	Cooper
*McLain, Wm. David	Jackson	Cape Girardeau
Miller, George Edward	Weldon Springs	St. Charles
*Nelson, George Adney	St. Joseph	Buchanan
Newton, Ned Ernest	Bolivar	Polk
*Niedermeyer, Fred. W	St. Louis	
Norfeet, Viola	High Point	Moniteau
Oldham, Wm Abner	Columbia	Boone
O'Toole, Chas. Furey	Moundville	Vernon
*Park, A	Columbia	Boone
Payne, Mary C	High Point	Moniteau
Rees, Minnie	Columbia	Boone
Sankey, P. H	Salem	Dent
Schmidt, Louise	Hannibal	Marion
Sears, Phidella	Barnett	Morgan
*Shipman, Robert Lee	Holden	Johnson
*Shrader, Eugene W	Paris	Monroe
Smith, C	Columbia	Boone
*Smith, Joseph Edward	Endicott	—, Wash
*Stampfl, George Joseph	Jefferson City	Cole
*Stanley, Robert Dean	Buffalo	Dallas
Stephens, Lenna	Columbia	Boone
Striker, Herbert	Marshall	Saline
Stringer, George Jefferson	Humphreys	Sullivan
Talbot, Edward Bast	Mexico	Audrain
Terrill, Lizzie E	Moberly	Randolph
*Thompson, Thomas W	Pendleton	Warren
*Thompson, Benjamin		
*Vallier, James	Columbia	Boone
Viles, Landon C	Bolivar	Polk
Weatherford, Guy	Unionville	Putnam
*Wickham, Frank Dickinson	Gallatin	Davies
*Wilkinson, George Rappeen	Sedalia	Pettis
*Woodside, Ray Clark	Salem	Dent
*Yowell, Benjamin Jasper	Columbia	Boone
Zarn, George Gerner	Platte City	Platte
Zimmerman, Lizzie P	Sedalia	Pettis
PREPARATORY CLASS.		
Adams, Thomas Barrett	Norborne	Carroll
Adams, Arthur	Buckner	Jackson
Agnew, James W	Columbia	Boone
Alexander, Wm. C	St. Charles	St. Charles
Allen, Mary Swenson	Columbia	Boone
*Allen, Robert Fairfax	Kansas City	Jackson
Anderson, Chas. Frederick	Moscow Mills	Lincoln
Bain, Claude	Snickards	Grundy
*Barnes, Chas. M	New Madrid	New Madrid
Barnett, James Sanford	Columbia	Boone
Barnett, George H		
*Beazley, Lewis Craig	Seymour	Webster
Blackwell, Laura Cherry	Columbia	Boone
Blanton, David Anderson		

Name.	Postoffice.	County.
Boisseau, Oscar G.	Holden	Johnson
*Bostic, John Langford	Kahoka	Clark
Bragg, W. O.	Shelbina	Shelby
Broadhead, Marion	Columbia	Boone
*Brown, Phineas A.	Reynard	Bates
Burks, David Faulk	Columbia	Boone
Busby, Wm. G.	Wakenda	Carroll
*Callahan, W. M.		
*Calley, Thomas Richard	Bowers Mills	Lawrence
*Carter, James M	Worcester	Audrain
Caskey, John James Karr	Columbia	Boone
Chinn, Ota	Wakenda	Carroll
Clabaugh, Emmett	LaMonte	Pettis
*Coates, Thomas Barnes	Meadville	Linn
Coil, James Hubert	Perry	Ralls
Coleman, Harry T.	Orrville	St. Louis
Combs, Joseph Craig	Linneus	Linn
Cooper, O. C.	Columbia	Boone
*Creason, Goodwin	Centralla	"
*Crecelius, Harry A.	Mehlville	St. Louis
Darnaby, Alice	Columbia	Boone
Darnaby, Lena	"	"
*Darnaby, W. S.	"	"
Davis, George Thomas	Sheldon	Vernon
Dodson, Anna	Berryville, Ark.	
Donnohue, Belle	Columbia	Boone
*Duncan, C. B.	Olney	Lincoln
Dunn, Wm. Victor	Bethany	Harrison
Eates, B.	Columbia	Boone
*Eates, Charles E.	Fairport	DeKalb
Evans, Iva	North Kan. City	Clay
*Feland, Sanford	Wallace	Buchanan
*Fellows, David Crockett	Weston	Platte
*Freeze, Edwin	Dadeville	Dade
Fuller, Mary	Bethany	Harrison
*Gabbert, Lewis Cass	New Market	Platte
*Garrard, Robert	Columbia	Boone
Gerling, August	"	"
*Gillaspie, W. Augustus	"	"
Gladney, Albert	Auburn	Lincoln
Goldsberry, Willard	Dripping Sp'gs.	Boone
*Grandy, Lew Herbert	Columbia	"
Granker, Clvde	St. Louis	"
Grossman, Roy	Rocheport	Boone
Gustin, Charles	Edgerton	Platte
Guthrie, Robert Maury	Josephsville	St. Charles
Hackney, Thomas B. rton	Urich	Henry
Harris, Mauric; Brown	Deer Park	Boone
Harrison, Cora	Bethany	Harrison
Harrison, Grace	"	"
*Hazlett, O.	Buffalo	Dallas
Herrleben, Henry	Jamestown	Moniteau
Hill, W. Thomas	Latham	"
Hummel, Ellis	Carterville	Jasper
*Hutchison, Guy Reed	Carthage	"
*Jeans, W. V.	Price's Branch	Montgomery
Kasel, August Chas.	Dundee	Franklin
*Kinder, Lyman	Marble Hill	Bollinger
*King, Roy	Linn Creek	Camden
Krummel, Edward Watson	Granville	Monroe
Laughlin, W. N.	Foster	Bates
Lear, Norman J.	Hannibal	Marion
*Lester, W.	Marionville	Lawrence
Lewis, Henry	Jefferson Bar	St. Louis
Lockridge, A.	Meadville	Linn
*Lombar, Frederic E.	Iberia	Miller
Maban, Maria	Columbia	Boone
Marshall, Archie M.	"	"
Marshall, L. J.	"	"
Martin, Henry Austin	Moberly	Randolph
*Massengale, James Rhea	St. Louis	"
McAlister, Andrew Walker	Columbia	Boone
McBurney, Henry Grier	Trenton	Grundy
McConathy, Harry	Columbia	Boone
McGwire, Morris Spencer	"	"
Merriwether, John Davis	Eolia	Pike
Mikel, Henry	Columbia	Boone
Miller, A.	Shelbina	Shelby

Name.	Postoffice.	County.
Miller, W. A.	Rocheport	Boone
Minter, M.	Mill Grove	Mercer
*Mitchell, Robert	Columbia	Boone
Mockbee, Chas. Robertson	Horine	Jefferson
*Moody, Whit H.	Ellenorah	Gentry
*Moore, George	Phelps	Lawrence
Moore, G.	Linneus	Linn
*Moore, John Sidney	Pueblo, Colo.	
*Moore, Robert	Linneus	Linn
Moore, W. C.	Viola	Stone
Moorman, Oscar W.	Maysville	DeKalb
Moss, Hubert	Fayette	Howard
Mountjoy, John Leroy	Columbia	Boone
Meyersieck, Oscar	Union	Franklin
*Napton, John B.	Drexel	Cass
Nozgile, J. Ransom	Unionville	Putnam
*O'Connell, John Patrick	St. Louis	
Oldham, S. E.	Columbia	Boone
Orr, Hattie B.	Mt. Vernon	Lawrence
*Parker, P.	Kansas City	Jackson
*Peake, George R.	Kansas City	
Posey, John Lester	Missouri City	Clay
*Pratt, John Keiser	Columbia	Boone
Prince, Rubey A.	Rocheport	
Ridgway, Robert Foster	Johnson City	St. Clair
Robbins, James Kinzan	New Madrid	New Madrid
Robinson, Edward Windsor	Jefferson Bar	St. Louis
*Rogers, John S.	Palmyra	Marion
Russell, Earnest Howard	California	Moniteau
Sanders, James Levi	Memphis	Scotland
Schnecko, Robert Chas.	Clayton	St. Louis
Shafer, Arthur Byron	Nevada	Vernon
Sheetz, Edwin Rucks	Chillicothe	Livingston
Shepherd, Chas. M.	Clarksburg	Moniteau
Sims, John Harrison	Hazen	—, Arkansas
Slaughter, James Agnew	Edina	Knox
Smiley, B. Frank	Whiteside	Lincoln
Smith, Edmon Kirby	Charleston	Mississippi
*Smithpeter, Chas. W.	Buffalo	Dallas
Stratton, Myron A.	Windsor	Henry
Stull, Josiah Harrison	Excelsior	Morgan
Stull, Thomas Grath	"	"
*Sturgis, James Emerson	Hamilton	Caldwell
*Sturgis, W. Eber	Perrin	Clinton
Sutherland, Virginia	Houston	Texas
Swift, A. D.	Jefferson City	Cole
Switzler, C. T.	Columbia	Boone
Switzler, R. H.	"	"
Terrill, Anna Coates	Moberly	Randolph
Thomas, Wm. Harry	Hillsboro	Jefferson
Thomson, George Edward	Columbia	Boone
Thompson, Guy Atwood	"	"
*Thompson, Frank F.	Bellefonte	Pulaski
Tindall, Seth Thomas	Columbia	Boone
Toalson, Omer A.	Urich	Henry
*Trumbo, Ernest George	Winston	Davless
Turner, Levi Spurgeon	Moberly	Randolph
Turner, O. H.	Hallsville	Boone
Uhlman, Louis	St. Joseph	Buchanan
Vivion, James Gordon	Pueblo, Colo.	
Wentworth, Orris F.	Unionville	Putnam
Wheeler, C. M.	Norborne	Carroll
Wheeler, A. O.	St. Louis	
*Wyatt, Wm S.	Cyrene	Pike
Wiginton, Cora	Columbia	Boone
*Wood, David Perry	Platte City	Platte
Wood, John H.	Strother	Monroe
*Yeaman, M. B.	Ferguson	St. Louis
Young, Chas. Everett	Mound City	Holt
Young, Frederick	Columbia	Boone
Zaring, Lizzie	Deer Park	
Zick, Bernard	Pleasant Hill	Cass

Name.	Postoffice.	County.
SPECIAL STUDENTS.		
Defoe, Luther Marion.....	California.....	Moniteau.....
Delmore, Thomas Edward.....	Moberly.....	Randolph.....
*Ficklin, W. H.....	Columbia.....	Boone.....
Fulka, E. B.....	California.....	Moniteau.....
Goodding, Nettie Eugenia.....	Columbia.....	Boone.....
Horn, Katherine.....	Boonville.....	Cooper.....
Hutchison, F. P.....	Jamesport.....	Havess.....
Johnston, Eva.....	Columbia.....	Boone.....
Kemp, George Ward.....	Salida, Colorado.....	Boone.....
Long, Laura V.....	Columbia.....	Boone.....
Pratt, Chas. Wm.....	".....	".....
Tate, James B.....	Liberty.....	Clay.....
Torbit, Chas. Larrimore.....	Rocheport.....	Boone.....
White, Benjamin Thompson.....	Perry.....	Ralls.....
Wright, M. B.....	Columbia.....	Boone.....
Zaring, Emma Lee.....	Deer Park.....	".....
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STUDENTS IN COLLEGE OF AGRICULTURE.		
(Students taking the full course of study.)		
Anderson, S. J.....	Columbia.....	Boone.....
*Beall, H.....	Coloma.....	Carroll.....
*Bihl, S. W.....	Columbia.....	Boone.....
Bretz, Wm. S.....	".....	".....
Brown, E. B.....	Kansas City.....	Jackson.....
*Brown, George Batterton.....	Springfield.....	Greene.....
*Buchanan, Frank S.....	Carrollton.....	Carroll.....
*Bulla, Wm. Henry.....	Emoire Prairie.....	Andrew.....
Carpenter, M. L.....	Cameron.....	Clinton.....
Conner, Benjamin F.....	Columbia.....	Boone.....
*Conover, C. C.....	Peculiar.....	Cass.....
*Daniel, George E.....	Thompson.....	Audrain.....
Downing, Chas. M.....	Newark.....	Knox.....
Doyle, P. Harvey.....	Clinton.....	Henry.....
Duemler, James Edwin.....	St. Clair.....	Franklin.....
East, Chas. Wheeler.....	Troy.....	Lincoln.....
Ellis, C.....	Ashland.....	Boone.....
Fulton, Leonard.....	Harrisonville.....	Cass.....
Gates, Wm. C.....	Montrose.....	Henry.....
Gordon, Reverly Johnson.....	Columbia.....	Poone.....
Graham, Chas. Ricketts.....	Mexico.....	Audrain.....
Haferkamp, Edward Wm. Herman.....	Augusta.....	St. Charles.....
Hall, Austin Wm.....	Belton.....	Cass.....
Hamilton, A. L.....	Waverly, Ill.....	".....
Hickman, Fannie.....	Slater.....	Saline.....
Hickman, Thaddeus Bryan.....	Columbia.....	Boone.....
Hickman, Thomas Harvey.....	".....	".....
*Huntley, George.....	Farber.....	Audrain.....
Jennings, Rena May.....	Columbia.....	Boone.....
Jennings, John Robert.....	".....	".....
Johnson, Frank L.....	".....	".....
Kaser, V. C.....	Grensburg.....	Knox.....
*Lanning, John Henry.....	St. Genevieve.....	St. Genevieve.....
Lamar, Robert S.....	Fulton.....	Callaway.....
Lester, W. F.....	Marionville.....	Franklin.....
Lillard, A. C.....	Carrington.....	Callaway.....
Lillard, Dosis.....	".....	".....
Lillard, G.....	".....	".....
Lyman, R. E.....	".....	".....
Maxwell, Robert Wm.....	Columbia.....	Boone.....
McBurney, C.....	Millersburg.....	Callaway.....
McConathy, Henry.....	Trenton.....	Grundy.....
McGavock, Robert E.....	Columbia.....	Boone.....
McMurry, W. M.....	".....	".....
Mitchell, Harrie Ray.....	Colony.....	Knox.....
*Moore, W. R.....	Spencerburg.....	Pike.....
*Murrill, George R.....	Vandalia.....	Audrain.....
Norfleet, Robert Arthur.....	Cabool.....	Texas.....
Palmer, W. C.....	High Point.....	Moniteau.....
Phillips, Mary Annie.....	Point.....	Boone.....
Phillips, John Henry.....	Dripping Sp'gs.....	Boone.....
Pierce, James Harris.....	".....	".....
Powell, Herman C.....	Columbia.....	".....
*Schnebly, John Henry.....	".....	".....
Schwabe, Rachel.....	Gorin.....	Scotland.....
	Columbia.....	Boone.....

Name.	Postoffice.	County.
Schwabe, Ida	Columbia	Boone
Sears, A. J.	Barnett	Morgan
*Seger, John C.	Blackwell	St. Francois
*Smith, August	Hermann	Gasconade
Smith, Chas E.	Columbia	Boone
Smithpeter, E. Z.	Bogard	Carroll
Swindler, Henry Byrd	Ash Grove	Greene
Tandy, John Lewis	Columbia	Boone
Thomas, Thomas	Kdgertou	Platte
Thompson, Edgar S.	Brown's Sta	Boone
Truitt, S. W.	Millersburg	Callaway
*VanCleve, Arthur	Malden	Dunklin
Waters, John Joseph	Columbia	Boone
Weeks, Edson C.	Eldon	Miller
Woodruff, Robert Lee	Orrick	Ray
*Wyatt, Marcus Wm	Rockport	Atchison
<i>Special Students from other Departments Taking One or More Studies in this College.</i>		-71
Adams, Arthur	Buckner	Jackson
Adams, Thomas Barrett	Norborne	Carroll
Adams, Vinnie	Shelbina	Shelby
Allen, Mary Swepton	Columbia	Boone
Barnett, John Sanford	"	"
Barnett, Sentby Rives	"	"
Beazley, Lewis Craig	Seymour	Webster
Blackwell, Laura	Columbia	Boone
Broadhead, Marion Gertrude	"	"
Briegleb, Chas Ferdinand	St. Clair	Franklin
Burks, David F.	Columbia	Boone
Burnham, Edna	"	"
Burnham, Nannie	"	"
Busby, Wm G.	"	"
Carpenter, L.	Wakenda	Carroll
Chamberlain, Lewis Anthony	Cameron	Clinton
Coleman, Wm. Orange	Harle Station	Jefferson
Colley, Thomas Richard	Milo	Vernon
Conley, Minnie	Bowers Mills	Lawrence
Conley, Rosa	Columbia	Boone
Conner, Maria	"	"
Cooper, O. C.	"	"
Culbertson, Jerry	Shobe	Bates
Darnaby, Lena	Columbia	Boone
Darnaby, W. S.	"	"
Davis George Thomas	Sheldon	Vernon
Dawes, H. M.	Marshall	Saline
Delmore, Thomas Edward	Moberly	Randolph
Dinsmoor, Gordon	Kirksville	Adair
Dodson, A. E.	Columbia	Boone
Donnohue, Belle D.	"	"
Doty, Augustus Henry	Jamesport	Davies
Douglass, Urna	Midway	Boone
Doyle, John Harrison	Tina	Carroll
East, Chas. W.	Troy	Lincoln
Edmonds, Anna L.	Columbia	Boone
Ellis, C.	Ashland	"
Estes, Chas. E.	Fairport	DeKalb
Evans, Amanda	N. Kansas City	Clay
Feland, Sanford	Wallace	Buchanan
Faris, John C.	Rocheport	Boone
Fewsmith, Hettie	Columbia	"
Fuller, Mary	Rethany	Harrison
Gearheard, Arthur	Sheldon	Vernon
Garrard, Robert H.	Columbia	Boone
Gillespie, Wm. Augustus	"	"
Gilliam, Lucy	Brunswick	Chariton
Goldsberry, W.	Dripping Springs	Boone
Goodnight, Thomas C.	Montserrai	Johnson
Gordon, Rachel	Jefferson City	Cole
Graham, Chas. Ricketts	Mexico	Adrain
Gremp, Wm. A.	Vienna	Maries
Griffin, Flora	Columbia	Boone
Griffin, Maude	"	"
Grossman, Roy	"	"
*Guthrie, Robert Maury	Rocheport	St Charles
Gwinn, Arthur	Josephville	Bates
Harris, Orlene	Sprague	"
	Brown's Rock	Chariton

Name.	Postoffice.	County.
Harris, Maurice Brown	Deer Park	Boone
Hatton, Carrie Joanna	Columbia	"
Hoffman, Gustave	Boeger's Store	Oaage
*Holman, Jurney Hubert	Hartford	Putnam
Holmes, A.	Hannibal	Marion
*Hummell, E	Cartersville	Jasper
Hutchinson, Frank Prosser	Jamesport	Daviess
*Jeans, Wm	Price's Branch	Montgomery
*King, Ray	Linn Creek	Camden
Laughlin, Wm. M.	Foster	Bates
Laws, Lena	Columbia	Boone
*Letchworth, Thomas Jefferson	Versailles	Morgan
*McBurney, Henry Grier	Trenton	Grundy
McClement, Isabella	Butler	Bates
*McConathy, Harry	Columbia	Boone
McGavock, Robert	"	"
Mahan, Maria Lou	"	"
Manning, John	McFall	Gentry
Maxwell, Wm. Robert	Millersburg	Callaway
Merriweather, John Davis	Eola	Pike
Mikel, Henry F	Columbia	Boone
Miller, Olga	Shelbina	Shelby
Miller, Mary	"	"
Moorman, Oscar Wm	Mayaville	DeKalb
Moore, G	Linneus	Linn
*Morro, Wm. C	Viola	Stone
*Moss, Hubert	Fayette	Howard
Myerseck, Erwin	Union	Franklin
*Noggle, J Ransom	Unionville	Putnam
Norfleet, Abraham L	High Point	Moniteau
Oliver, Mary	Brown's Station	Boone
Posey, John Lester	Missouri City	Clay
Powell, Bessie	Columbia	Boone
Prince, Alpha R.	Rocheport	"
Ray, Frank O.	Kansas City	Jackson
Rees, Minnie	Columbia	Boone
Riggs, Inez Lucretia	Curryville	Pike
Riggs, Mary	Halleville	Boone
*Robinson, Edward Windsor	St. Louis	"
Robinson, Marie Annie	Stephens Store	Callaway
Rouner, A. W.	Newark	Knox
Sams, Wm. Meade	Kansas City	Jackson
Sanders, James Levi	Memphis	Scotland
Sanderson, Sarah	Rich Hill	Bates
Sankey, Paul Hastings	Salem	Dent
Schneco, Robert C.	Clayton	St. Louis
Shull, Rena May	Edgerton	Platte
Slaughter, James Agnew	Kdina	Knox
Smiley, B. Frank	Whiteside	Lincoln
Smith, Camill	Columbia	Boone
Smith, C. E.	"	"
*Smith, C. O.	Rich Hill	Bates
*Smith, Edmond Kirby	Charleston	Mississippi
Striker, Herbert	Marshall	Saline
*Sturgis, James Emerson	Hamilton	Caldwell
Switzler, C. T.	Columbia	Boone
Switzler, R. H.	"	"
Tapley, Mattie	Frankford	Pike
Terrill, Annie Coates	Moberly	Hendolph
*Thomas, Wm. Harry	Hillsboro	Jefferson
*Thompson, Benjamin	Columbia	Boone
Thomson, George Edward	"	"
*Torbit, C. L.	Rocheport	"
Treadway, Herbert	Paynesville	Pike
*Uhlman, Lewis	St. Joseph	Buchanan
VanHorne, May	Columbia	Boone
Veach, S. J.	Utopia, Kas.	"
Via, Mav	Columbia	Boone
Weber, Christina	Moundville	Vernon
White, James P.	Franklin	Howard
Williamson, Wm. Harvey	Ham's Prairie	Callaway
*Woodale, Roy C.	Salem	Dent
Wright, Blanche M.	Columbia	Boone
Young, Frederick	"	"
Zaring, Emma	Deer Park	"
Zaring, Lizzie	"	"

Name.	Postoffice.	County.
NORMAL STUDENTS.		
Adams, Mary	Bowers Mills	Jasper
Adams, Vinnie	Shelbina	Shelby
Adams, Newton T.	"	"
Armstedt, Herman Benjamin	St. Charles	St. Charles
Angle, Ernest E	Clinton	Henry
Asendorf, George Wm. Henry	Craig	Holt
Baldwin, Carrie E.	Mexico	Audrain
Baumgartner, Georgia	Columbia	Boone
*Bear, A. S.	Tipton	Monteau
Beasley, Irene B	Columbia	Boone
Beasley, Edgar Fountain	"	"
Botts, Cassandra	Molina	Audrain
Boyer, Monta Jeane	Denver, Col.	"
Braiford, A.	Columbia	Boone
Brockenbrough, M. B.	Hallsville	"
Briegleb, Charles Ferdinand	St. Clair	Franklin
Bronson, H. H.	Sedalia	Pettis
Brown, George L.	Reynard	Bates
*Buffington, S. A.	Salisbury	Chariton
Burham, Sallie	Columbia	Boone
Burham, Nannie	"	"
Butcher, Laura	"	"
Caldwell, Robert Lee	Weatherby	DeKalb
Campbell, John A.	Avilla	Jasper
Conley, Rosa	Columbia	Boone
*Conley, M. E.	"	"
Conner, Maria K.	"	"
*Cook, Sidney Francois	Clarksburg	Monteau
*Culbertson, Jerry	shobe	Bates
*Dawes, H. M.	Marshall	Saline
Denny, James Milton	Roanoke	Howard
*Dillon, John Wm. Sherman	Denver	Worth
Douglass, Urma	Midway	Boone
Douglass, Evalena	"	"
Doyle, John Harrison	Tina	Carroll
*Dunn, John Jay	Jameson	Davess
Edmonds, Lillian	Columbia	Boone
Evas, Amanda	N. Kansas City	Clay
*Fellows, John N.	Weston	Platte
Fewsmith, Hettie Joy	Columbia	Boone
Fuller, Mary	Bethany	Harrison
Gates, James M.	Montroe	Henry
Gerling, Henry Joseph	Columbia	Boone
*Glaves, E. C.	Tolona	Lewis
Goldsberry, W.	Dripping Sp'gs.	Boone
Gordon, Rachel	Jefferson City	Cole
Grandy, Lew Herbert	Columbia	Boone
Griffin, Maude	"	"
Griffin, Flora	"	"
Gwinn, Arthur	Sprague	Bates
Hack, Mary	Columbia	Boone
Hamilton, Edward Richard	"	"
Hancock, Alice	Keytesville	Chariton
Harris, Herman Freeman	Columbia	Boone
Harris, Orienne	Brunswick	Chariton
Hart, Harry G.	High Point	Monteau
Hatton, Moses W.	Farmington, Ia.	"
Hickman, Thomas Harvey	Columbia	Boone
Hickman, Thaddeus Bryan	"	"
Hill, George Washington	"	"
Hill, Thomas W.	Rocheport	Monteau
Hoffman, Gustave A.	Latham	Osage
*Holman, Jurney Hubert	Boeger's Store	Fatnam
Horn, Katherine	Hartford	Cooper
*Hudgins, Warren Thomas	Boonville	Livingston
Jacobs, Lella	Mooreville	Boone
*Keener, Frederick Dent	Midway	DeKalb
Koehl, Anton John	Fairport	"
*Lamar, Robert Spencer	Fairport	"
LaMotte, John Harry	Fulton	Callaway
Laws, Lena	Roanoke	Howard
Letchworth, Thomas Jefferson	Columbia	Boone
Lockridge, Alberta	Versailles	Morgan
Long, Laura	Meadville	Linn
Lynch, Dora	Columbia	Boone
Mansfield, Mary	"	"
	St. Louis	"

Name.	Postoffice.	County.
Mason, Wm. E.	Berlin	Gentry
McClement, Isabelle	Butler	Bates
*McHenry, E. H.	Clyde	Nodaway
McKinley, Gertrude	Windsor	Henry
*McKinney, Eber F.	Linnville	Mercer
Miller, Mary	Shelbina	Shelby
*Moore, Harry Lancaster	Pueblo, Col.	
Norfleet, Abraham L.	High Point	Moniteau
Norfleet, Viola		
Pennington, John Wm	Bosworth	Carroll
Phillips, James Preston	Golden City	Barton
Powell, Elizabeth	Columbia	Boone
Riehl, Mary	Potosi	Washington
Riggs, Mary	Hallsville	Boone
Robert, Josephine	Moberly	Randolph
Robinson, Annie	Stephens Store	Boone
Robinson, C.	Deer Park	
Rouner, A. W.	Newark	Knox
Sanderson, Sarah	Rich Hill	Bates
Sams, Wm Meade	Kansas City	Jackson
Seare, Philenia	Barnett	Morgan
Selsor, Mark	Madelaine	Davies
Shull, Rena M.	Edgerton	Platte
Smith, Zimri Carter	Pine Valley	Reynolds
Smith, Hugh A.	Coalsburgh	Henry
Smith, C. O.	Rich Hill	Bates
Stemmons, Mattie	Maple Grove	Jasper
*Swindler, Henry Byrd	Ash Grove	Greene
Terpening, Minnie	Moundville	Vernon
Tolson, Omar A.	Urich	Henry
Via, May	Columbia	Boone
Williams, David Edgar	Conway	Laclede
		-108
<i>Teachers' Course</i>		
Brandt, E. J.	Warrenton	Warren
Campbell, Edward Engene	Chain of Rocks	Lincoln
Coleman, Wm Orange	Milo	Vernon
Conley, Minnie	Columbia	Boone
Faris, John C.	Rocheport	"
Gearheard, Arthur	Sheldon	Vernon
Gillam, Lucy	Brunswick	Charlton
Griffin, Florence	Calro	Randolph
Hatton, Carrie Joanna	Columbia	Boone
Horning, Clotilda	Springfield	Greene
Norfleet, Abraham L.	High Point	Moniteau
Oliver, May	Brown's Station	Boone
Skaggs, W. L.	DeSoto	Jefferson
Tapley, Mattie	Frankford	Pike
Van Horne, May E.	Columbia	Boone
Weber, Christina	Moundville	Vernon
		-16
LAW STUDENTS.		
MASTER'S CLASS.		
Kemp, George W.	Salida, Colo.	
SENIOR CLASS.		
*Allen, James A.	Lamar	Barton
Beah, A. W.	Helena, Mont.	
Blake, Frank	Kansas City	Jackson
Bruce, George Washington	Columbia	Boone
Dunkin, Robert Roy	Browning	Linn
Farley, Robert Emmett	Columbia	Lafayette
Fulkerson, Frank B.	Higginsville	Saline
Hart, Henry G.	Slater	
Hendon, Harry T.	Platte City	Platte
Hinkle, John Isaac	Boles	Franklin
Locker, Wm. Henry	Duval	Barton
Manning, A. V.	Tiff City	McDonald
Mayfield, Irwin Washington	Columbia	Boone
Mayfield, Leander C.	Lebanon	Laclede
Minton, Chas.	Cape Girardeau	Cape Girardeau
Moyer, Annens Edward	Des Moines, Ia.	
O'Donahue, James J.	St. Louis	
O'Mahoney, C.	Columbia	Boone

Name.	Postoffice.	County.
Pogue, Henry F.	Palo Pinto	Benton
*Robinson, Omar Edward	Rockville	Bates
Rodgers, Robert D.	Benton City	Audrain
Ruark, Horace C.	Neosho	Newtown
Rudy, Luther	Mt. Lebanon, La	
Schaper, Jesse Herman	Troy	Lincoln
Talbot, Demetrius Wm.	Oklahoma, O. T	
Thompson, Burton Maude	Columbia	Boone
Tipton, Joseph C., A. B.	Las Vegas, N.M	
Toalson, Oscar Benton	Urich	Henry
Willis, John S.	Columbia	Boone
—29		
JUNIOR CLASS.		
Banks, John S.	Columbia	Boone
Barnet, O. M.	Edina	Knox
Barr, Guy C.	St. Joseph	Buchanan
Beach, Emory Vivian	Helena, Mont.	
Bishop, John Edward	California	Moniteau
Blackwell, Wm. Arthur	Pattonville	St. Louis
Bond, Sam.	St. Mary's	Ste. Genevieve
*Botts, Hosea Thompson	Novelty	Knox
Bradley, N. M.	Warrensburg	Johnson
Brown, Edward	Cross Timbers	Hickory
Buckley, Wm. Dayton	Ft. Smith, Ark.	
Cravens, Wm. B.	Springfield	Greene
Corum, C. D.	Boonville	Cooper
Dempsey, Luther Nixon	Minden	Chariton
*Duncan, Jesse	Olney	Lincoln
Felker, Henry C.	Vienna	Maries
Garrett, Corydon	Cottonwood	Femiscot
Gerig, Edward	Columbia	Boone
Gerling, Henry Joseph		
Glascock, Henry	New London	Balls
Godrich, John Edward	Cameron	Clinton
Groves, Hiram John	Dover	Lafayette
Hayes, Thomas A.	Kirksville	Adair
Holmes, A. S.	Hannibal	Marion
Landers, Henry P.	Brookfield	Linn
Loeb, Isador	Columbia	Boone
McCurdy, George Vest	Sedalia	Pettis
Murray, Jerry Herbert	McCredie	Callaway
Ray, Fred. P.	Kansas City	Jackson
Rogers, E.	Columbia	Boone
Schoollag, B. Gratz	Milan	Sullivan
Sparrow, Wm. S.	Vandalia	Audrain
Strother, S. B.	Kansas City	Jackson
Timberlake, E. M.	Warrenton	Warren
Ward, Robert Emmett	Birmingham	Clay
Williams, Joseph Green	Hillsboro	Jefferson
—36		
MEDICAL STUDENTS.		
FIRST YEAR'S CLASS.		
*Baker, Chas. M.	Paris	Monroe
Belden, Wm. Everett	Columbia	Boone
Bradley, Thomas	Warrensburg	Johnson
Brown, Hugh Ernest	Brown Station	Boone
Cox, Sylvester	Wellsville	Montgomery
Diven, John H.	Centralia	Boone
Diven, Thomas Harry		
Graham, Robert	Clarks, Ohio	
*Green, David E.	Platte City	Platte
Gremp, Wm. A.	Vienna	Maries
Hunter, W. C.	Trenton	Grundy
Kurtz, E. L.	Columbia	Boone
Martin, Wm. R.	Martinsburg	Audrain
McQuitty, James Wm.	Midway	Boone
*Farmer, John E.	Columbia	
*Feolor, Edward C.	Brownington	Henry
Gunn, Abram Turner	Columbia	Boone
Keed, Oscar Davis	Tulip	Monroe
*Schrutcheid, Guthrie	Macon City	Macon
Son, Edwin Robert	California	Moniteau
Smith, Harry C.	Hughesville	Pettis
Wade, Sidney Johnston	Benton	Scott
West, Wm. Dan.	Mendon	Chariton
Williamson, Wm. Harvey	Columbia	Boone

Name.	Postoffice.	County
Wilson, Guy.....	Columbia.....	Boone.....
Winn, James Warren.....	Meyers.....	Howard.....
Yager, Sam.....	Perche.....	Boone.....
SECOND YEAR'S CLASS.		
Cook, Richard F.....	Centralla.....	Boone.....
Lockwood, Wm. Duncan.....	Rockport.....	Atchison.....
Thornton, Joseph E.....	Rocheport.....	Boone.....
Treadway, Herbert.....	Paynesville.....	Pike.....
Wade, Fernando Harding.....	Columbia.....	Boone.....
ENGINEERING STUDENTS.		
*Balthis, Frank Spencer.....	Huntsville.....	Randolph.....
Cauthorn, Edward Beauford.....	Columbia.....	Boone.....
*Chamberlain, Louis Anthony.....	Hornie Station.....	Jefferson.....
*Crececius, S. F.....	Mehville.....	St. Louis.....
Doty, Augustus Henry.....	Jamesport.....	Daviess.....
*Dye, A.....	Salem.....	Dent.....
Dunn, John Jay.....	Jameson.....	Daviess.....
Dodson, A. E.....	Columbia.....	Boone.....
Dinsmoor, Gordon.....	Kirksville.....	Adair.....
DeGraw, Richard X.....	Brookfield.....	Linn.....
Elkin, Aea B.....	Hallsville.....	Boone.....
Fyfer, John Kirkbride.....	Columbia.....	
*Fowler, Thomas Robert.....	Sedalia.....	Pettis.....
*Gordon, Wm. Edgar.....	Orrsburg.....	Nodaway.....
Graham, Chas. Ricketts.....	Mexico.....	Audrain.....
Garrett, Robert F.....	Mound City.....	Holt.....
*Gings, Austin B.....	Hedge City.....	Knox.....
Hale, W. Ben.....	Ladonia.....	Audrain.....
Hancock, Lyman Ernest.....	Stanley.....	Johnson.....
Hunter, Thomas Edwin.....	Raytown.....	Jackson.....
*Highley, Lee.....		Madison.....
Hill, Curtis.....	Independence.....	Jackson.....
*Hatcher, Morris Simon.....	Columbia.....	Boone.....
*Kelsor, Chas. Frank.....	Clinton.....	Henry.....
Lockwood, Marquis H.....	Rockport.....	Atchison.....
Lawrence, A. W.....	Bowling Green.....	Pike.....
McCrary, W. L.....	Chifton Hill.....	Randolph.....
Mockbee, Chas. Robertson.....	Hornie.....	Jefferson.....
Murray, Grant.....	Savannah.....	Andrew.....
Miller, George Edward.....	Weldon Spring.....	St. Charles.....
Merriwether, John Davis.....	Eolia.....	Pike.....
*May, David E.....	Warrensburg.....	Johnson.....
Newton, Ned Ernest.....	Bolivar.....	Polk.....
Noggle, J. Ransom.....	Unionville.....	Putnam.....
*Parker, P.....	Kansas City.....	Jackson.....
Roper, Wm.....	Nichols.....	Greene.....
Striker, Herbert.....	Marshall.....	Saline.....
Schnecko, Robert C.....	Clayton.....	St. Louis.....
Shawhan, Daniel.....	Lone Jack.....	Jackson.....
Sankey, Paul Hastings.....	Salem.....	Dent.....
Sanders, James Levi.....	Memphis.....	Scotland.....
*Shipman, Robert.....	Holden.....	Johnson.....
*Thompson, Thomas Waddy.....	Perdleton.....	Warren.....
*Trull C.....	Columbia.....	Boone.....
*Talbert, Chas. Mason.....	Casaville.....	Bary.....
Turner, O. H.....	Hallsville.....	Boone.....
Uhlmann, Louis.....	St. Joseph.....	Buchanan.....
Veach, S. J.....	Utopia, Kansas.....	
Wheeler, A. O.....	St. Louis.....	
Young, Chas. Everett.....	Mound City.....	Holt.....

* Members of Cadet corps.

STUDENTS OF SCHOOL OF MINES.

Name.	Postoffice.	County.
RESIDENT GRADUATES.		
Millard, Sallie E	Rolla	Phelps
UNDER-GRADUATES.		
Alexander, George Ernest	Marville	Nodaway
Alexander, Thompson	Muldrow, Ind. T. .....	.....
Allen, Anna Artemesia	Rolla	Phelps
Attebery, Minnie	Cuba	Crawford
Barker, Jacob Forney	Carthage	Jasper
Bland, Richard E	Rolla	Phelps
Boss, Fannie	"	"
Buskett, Evans W.	"	"
Buskett, Mary Page	"	"
Clayton, Frank Ray	St. Louis .....	.....
Corse, Lottie Edith	Rolla	Phelps
Detweiler, Ora	Dry Knob	Laclede
Dwyer, Edward P.	Joplin	Jasper
Dyer, T	Rolla	Phelps
Eftmueller, Otto	Hermann	Gasconade
Florreich, P.	St. Louis .....	.....
Fort, Edward Long	Rolla	Phelps
Fox, Homer Hastings	St. Louis .....	.....
Germann, Frank A	Rolla	Phelps
Goodwin, Anna G	"	"
Greenzweigt, A. H.	"	"
Grove, C. D	Gallatin	Davless
Grover, Carrie B.	Cuba	Crawford
Guenther, Eda	Rolla	Phelps
Henderson, Harry P	St. James .....	.....
Herdman, George W	Neosho Falls Kan .....	.....
Jackling, D. D	Sedalla	Pettis
Jackson, J. M.	Albuquerque, N.	M
Jamison, Blanche	Rolla	Phelps
Johnson, Edward Mackay	"	"
Johnson, L. L.	"	"
Jones, Fayette A	Independence	Jackson
Jones, Harry I.	St. Louis .....	.....
Kelly, Chas. M.	Knob Noaster	Johnson
Kelso, Thaddeus Sands	Springfield	Greene
Kerr, Wm. Christian	St. Louis .....	.....
Kachelhofer, J. M.	Starke, Fla. ....	.....
Lepper, Jennie Edith	Rolla	Phelps
Lewis, Harry E.	St. Louis .....	.....
Lombar, Frederick E	Iberia	Miller
Lowe, Parker Lee	Independence	Jackson
Lunbeck, George A	Rolla	Phelps
McCaw, Margaret .....	.....	.....
McMullin, Richard W	Hillsboro	Jefferson
Manning, Harvey E	Lebanon	Laclede
Martin, Grace	Sullivan	Franklin
Meriwether, C.	Rolla	Phelps
Millard, Lina	"	"
Mitchell, W	"	"
Morris, Joseph Evans	"	"
Morrow, S. L.	Ft. Smith, Ark .....	.....
Nicholson, A. P.	Ft. Worth, Tex. ....	.....
Nicholson, Ross .....	" .....	.....
Northrip, Joseph R	Stoutland	Camden
Oatley, John Arthur	Rolla	Phelps
Parker, Morris Brown	White Oaks, N.	M
Patterson, Oscar F	Lebanon	Laclede
Patterson, W. M.	Ree Heights, S. D .....	.....
Phariss, Ida	Rolla	Phelps
Reid, John C.	Pleasanton, Kas. ....	.....
Richardson, E	Rolla	Phelps
Richardson, Grace	"	"
Rowden, Wm. E.	Stoutland	Camden
Sappenfeld, Estella E.	Rolla	Phelps
sappenfeld, Olive	"	"
Smith, Tennie E	"	"
Soest, Adele	"	"
Southgate, Margaret B	"	"

Name.	Postoffice.	County
Spencer, C. B.	Joplin	Jasper
Spencer, Herbert G.	"	"
Stephenson, Lulu E.	Rolla	Phelps
Stern, W. E.	"	"
Strobach, Minnie	"	"
Tallman, Blanche	"	"
Thomas, Wm. Stephens	Bevier	Macon
Torrence, L. C.	Pocahontas	Cape Girardeau
Tyrrrell, Frank L.	Sinkin	Shannon
Vaughan, Robert Edward Lee	Salem	Dent
Walker, John E.	Vichy	Maries
Weisenbach, Addie Marguerite	Rolla	Phelps
Wood, Arthur Edward	"	"
Zelch, John A.	Clayton	St. Louis

-83

SUMMARY.

<i>Academic Students—</i>		<i>Professional Students—</i>	
Post-graduates	2	Agr'l and Mech'l } a, Regular....	71
Seniors	18	} b, Special.....	134
Juniors	26	Normal } a, Regular	108
Sophomores	36	} b, Teachers' course.....	16
Freshmen	98	Law	65
Preparatory	164	Medical	32
Special	16	Engineering	49
Total	360	Military Science and Tactics	193
		Mining and Metallurgy	83
		Total	749
		Grand total	1109
		Names counted more than once.....	395
		No. of individual students.....	714

ENROLLMENT.

1. Academic Departments.

<i>a. Language.</i>		<i>b. Science.</i>	
	No. Students.		No. Students.
1. English	439	1. Metaphysics	3
2. Latin	302	2. Mathematics	394
3. Greek	107	3. Physics	280
4. Modern Languages	270	4. Chemistry	344
5. Hebrew	3	5. Geology and Mineralogy	104
6. Sanskrit	3	6. Biology	229

2. Professional Departments.

	No. Students.		No. Students
1. Agriculture and Mechanic Arts.....	205	5. School of Mines and Metallurgy...	83
2. Normal Instruction	124	6. Engineering	59
3. Law	66	7. Military Science and Tactics.....	173
4. Medicine	32		

COUNTIES REPRESENTED IN THE UNIVERSITY.

Adair	3	Lincoln	7
Atchison	4	Lafayette	2
Andrew	7	Lewis	1
Audrain	10	Macon	2
Barton	3	Marles	3
Bates	11	Marion	6
Boone	172	Mercer	2
Buchanan	5	Miller	5
Benton	1	Morgan	5
Barry	1	Montgomery	4
Bollinger	2	Mississippi	1
Clinton	5	McDonald	1
Callaway	10	Moniteau	14
Clark	1	Monroe	7
Cooper	3	Nodaway	3
Cape Girardeau	6	New Madrid	5
Chariton	10	Newton	1
Caldwell	1	Osage	1
Cass	5	Patnam	5
Carroll	9	Pettis	9
Clay	6	Pike	8
Cole	4	Phelps	38
Camden	2	Polk	2
Crawford	2	Platte	10
DeKalb	4	Pulaski	1
Dent	5	Randolph	10
Davies	7	Reynolds	1
Dallas	3	Ray	1
Dunklin	1	Ralls	2
Dade	1	St. Louis	10
Franklin	9	St. Louis City	16
Gentry	4	Sullivan	4
Grundy	4	St. Charles	6
Greene	5	Shannon	1
Gasconade	2	Shelby	10
Henry	13	Stone	1
Howard	7	Scott	2
Holt	4	St. Clair	1
Hickory	1	Ste. Genevieve	3
Harrison	4	Scotland	2
Johnson	7	Saline	5
Jackson	21	St. Francois	1
Jasper	9	Texas	2
Jefferson	5	Vernon	7
Knox	8	Washington	1
Lawrence	4	Warren	3
Linn	11	Webster	1
Laclede	6	Worth	1
Livingston	2	Number of counties represented	97

STATES AND TERRITORIES REPRESENTED.

Arkansas	4	Montana	2
Colorado	6	New Mexico	1
Florida	1	Ohio	2
Illinois	2	Oklahoma Territory	1
Indian Territory	2	South Dakota	1
Iowa	2	Texas	4
Kansas	4	Washington	1
Missouri	681	Total represented	10

GRADUATES OF 1891.

Academic College.

FIRST RANK WITH DISTINCTION (AVERAGE GRADE 96-100).

Joseph Francis Paxton, A. B.

FIRST RANK (AVERAGE GRADE 90-96).

<i>Francis Pierce Divelbiss, A. B.</i>	<i>William Richard Gentry, L. B.</i>
<i>Henry Sanford McLeary, L. B.</i>	<i>William Sampson Jennings, J. B.</i>
<i>Miss Letta Britt, S. B.</i>	<i>Louis Napoleon B. Gray, L. B.</i>
<i>Robert Porter Ingram, A. B.</i>	

SECOND RANK (AVERAGE GRADE 70-90).

<i>John Benjamin Dorman, S. B.</i>	<i>George Cooley Pratt, A. B.</i>
<i>Joseph Luke Russell, L. B.</i>	<i>John Harvey Hatton, A. B.</i>
<i>John Benjamin Dorman, L. B.</i>	

Law College (Degree of LL. B.)

BACHELOR OF LAWS (*cum laude*).

<i>John S. Brown</i>	<i>J. Bowman Stirling</i>
<i>George L. Edwards</i>	<i>Edward J. White</i>
<i>Albert E. L. Gardner</i>	

BACHELOR OF LAWS.

<i>George R. Biggs</i>	<i>Warren A. Parker</i>
<i>James S. Burke</i>	<i>Hubert N. Pittman</i>
<i>Paul N. Crues</i>	<i>Oscar Puckett</i>
<i>James Guinn</i>	<i>Ayckmonde P. Shull</i>
<i>William S. Jennings</i>	<i>William H. Sprecker</i>
<i>Dennis W. Kane</i>	<i>Christian C. von Grempe</i>
<i>George Ward Kemp</i>	<i>Hubert P. Warden</i>
<i>William R. Littell</i>	<i>James H. Denny, Dec. 23, 1891</i>
<i>Robert Lee McCulloch</i>	<i>Charles A. Keith, Nov. 27, 1892</i>
<i>James P. Neal</i>	<i>Arnold Manns, Dec. 31, 1892.</i>

Engineering College.

<i>Oliver Neal Aztell, C. E.</i>	<i>Charles Aiden Bonfils, T. E.</i>
<i>William Broaddus Cauthorn, C. E.</i>	<i>William B. Cauthorn, T. E.</i>
<i>Abraham Pinckney Ellis, C. E.</i>	<i>Abram P. Ellis, T. E.</i>
<i>John Lockhart Halsey, C. E.</i>	<i>John L. Halsey, T. E.</i>
<i>Lewis Burton McKean, C. E.</i>	<i>Samuel W. Shinkle, T. E.</i>
<i>Prof. Hiram Phillips, C. E.</i>	<i>Wm. Franklin Hall, E. E.</i>

CERTIFICATE IN SURVEYING.

<i>Charles M. Talbert</i>	<i>J. E. Bishop</i>
<i>Curitts Hill</i>	<i>Thos. A. Ficklin</i>
Agricultural College (Degree of B. A. S.)	
<i>Forest E. Davis</i>	<i>Charles M. Conner</i>

Medical College (Degree of M. D.)

<i>John W. Connaway, M. D.</i>	<i>Ossian F. Hatton, M. D.</i>
<i>Paul Evans, M. D.</i>	<i>Joseph O. Jordan, M. D.</i>
<i>Elihu A. Fluetsmeiter, M. D.</i>	<i>Prof. George D. Purinton, M. D.</i>

Dr. J. L. Corlew, Ad-eundum degree

Normal College (Degree of Pe. B.)

<i>Miss Letta Britt, S. B.</i>	<i>Robert Porter Ingram, A. B.</i>
<i>Frank P. Divelbiss, A. B.</i>	<i>Joseph Luke Russell, L. B.</i>
<i>J. B. Dorman, S. B., L. B.</i>	<i>Louis N. B. Gray, L. B.</i>
<i>J. H. Hatton, A. B.</i>	

CERTIFICATE.

<i>Miss Cora A. Eitzen</i>	<i>Miss Lillian McGhee</i>
<i>John Franklin Wade</i>	<i>Miss Susan Duncan Harris</i>
<i>Miss Emily R. Schmidt</i>	<i>Miss Annie Johnson</i>
<i>George C. Immer</i>	<i>Floyd Lee Weakley</i>
<i>Anderson Wear Thurman</i>	<i>Miss Bessie Belle Burk</i>
<i>Albert T. McAdow</i>	<i>Miss Dollie Harnett Holloway</i>
<i>Miss Jennie Adams</i>	<i>Charles M. Howell</i>
<i>Miss Margaret Sinclair</i>	

HONORABLE MENTION—1890-91.

All students who have finished the work of any department, and who have reached in it an average grade of 96 to 100, shall be named by the Professor in charge of such department in his annual report to the President of the University for HONORABLE MENTION in the catalogue; this fact of honorable mention shall likewise be stated on the Commencement programme in the case of graduates.—[From rules for grading students, adopted April, 1884.]

DEPARTMENT OF ENGLISH.
JOSEPH FRANCIS PAXTON.

DEPARTMENT OF LATIN.
JOSEPH FRANCIS PAXTON.

DEPARTMENT OF GREEK.
JOSEPH FRANCIS PAXTON.

DEPARTMENT OF METAPHYSICS.
JOHN BENJ. DORMAN,
FRANK PIERCE DIVELBISS,
WILLIAM RICHARD GENTRY,
WILLIAM SAMPSON JENNINGS,
JOSEPH FRANCIS PAXTON.

DEPARTMENT OF MATHEMATICS AND ASTRONOMY.
FRANK PIERCE DIVELBISS.

DEPARTMENT OF MODERN LANGUAGES.
WILLIAM RICHARD GENTRY.

DEPARTMENT OF GEOLOGY AND MINERALOGY.
LEILA BRITT.

DEPARTMENT OF LAW.
JOHN S. BROWN,
GEORGE L. EDWARDS,
ALBERT E. L. GARDNER,
J. BOWMAN STIRLING,
EDWARD J. WHITE.

Prize Essayists in the Department of Law.

ALBERT E. L. GARDNER.....First prize
JOHN S. BROWN.....Second prize

The James S. Rollins University Scholarships.

These scholarships have been awarded as follows:

College of Arts, A. B. course.....M. R. CONLEY
College of Arts, S. B. course.....G. L. BROWN
College of Law.....O. A. TOALSON
College of Engineering, C. E. course.....J. N. FELLOWS

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