

# REPORT

TO THE GOVERNOR OF THE STATE OF MISSOURI.

THE

# FORTY-THIRD CATALOGUE

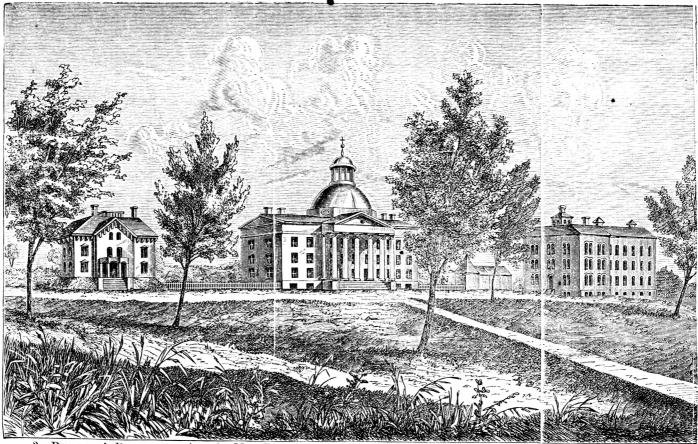
OF THE

UNIVERSITY OF THE STATE OF MISSOURI.

1884-1885.

FOUNDED, 1820-ORGANIZED, 1840.

PLATE 1.



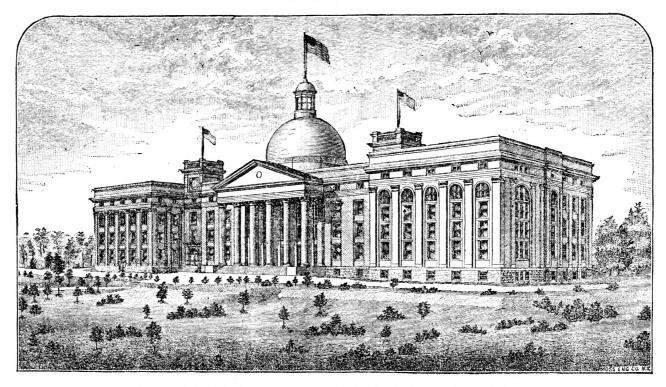
2. PRESIDENT'S DWELLING.

1. MAIN BUILDING. 4. OLD OBSERVATORY. OLD MAIN BUILDING.

3. SCIENCE HALL.

#### PLATE 1.

- 1. The main edifice, which faces north and is somewhat cruciform; nave E. and W. 157x transept (extension S. 25x81, and N. colonnade vestibule 20x81, and steps 7x81, making total depth N. and S.) 108x81. This structure is massive and imposing;  $3\frac{1}{2}$  lofty stories in height, with a basement cellar and an immense dome rising more than 100 feet in elevation, from which a splendid landscape lies before the eye. It accommodates the Chapel, Library, Law, Medical and Engineering schools, the Literary Societies and several chairs of language. The rotunda is occupied at present by Library matter, and several hundred stands of arms belonging to the Military Institute; but it is susceptible of being converted into a magnificent art gallery.
- 2. The President's dwelling also fronts N., on a line with 1, and is 46x42, with extension 24x18, garden, lawn, wood-house, stable, ice-house and pasture lot.
- 3. Science Hall, which is L shaped, facing E. 64x53 and N. 109x34, with good basement and 3 full stories. The Sciences of Chemistry, Natural History, with its cabinet, and the Mathematics are accommodated in this building, which is pronounced one of the very best, for its purposes, in the country. The Normal School provisionally occupies the magnificent room over the cabinet with northern, western and southern exposure and skylights.
- 4. The Observatory—see plate 3—has been moved to the northeastern part of the Campus, and has been remodeled.



THE MAIN BUILDING OF THE UNIVERSITY AS ENLARGED AND IMPROVED 1883-1885.

H. W. Kirchner, St. Louis, St. Louis, Contractor of Building.

M. Fred, Bell, Fulton,

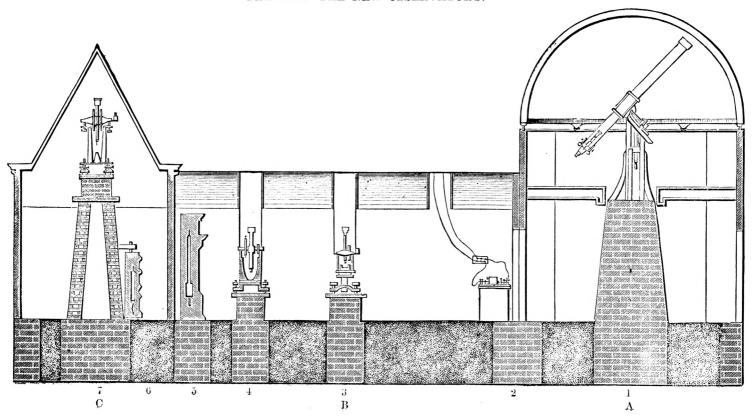
Architects and Superintendents.

PATRICK MULCARY, St. Louis, Contractor of Steam-Heating.

#### PLATE II.

The beautiful cut on the opposite page presents a north front and westend view of the University edifice as it appears since enlarged and improved according to the plans and contracts which have been made and executed. The building is four stories high with basement; is located in the south suburbs of Columbia, and faces north, presenting a front of 347 feet, the front of the old building being only 157. The new chapel or auditorium constitutes the east or left-hand wing, ground floor and gallery, with library hall above-in short, the portion of the building to the left of the eastern tower. Size of chapel 75 feet front by 110 deep, and capable of seating about 1,500 persons. Seats are hinged opera house and amphitheatre style. Between the chapel and the old building there is an entrance and stairway hall of 20 feet, running back the entire depth of the chapel. A similar hallway, under the western tower, also intervenes between the west end of the old building and the new west wing-this wing also presenting a front (including hallway) of 95 feet; depth about 115. A hallway of 23 feet width, running east and west, divides the west wingthe entire portion of it, north of this hall and fronting north, being the museum, the size of which is 75 by 47 feet. Size of wing south of east and west hall, which will be divided into recitation rooms, 75 by 45 feet. The whole building is lighted by electric light, and warmed by steam with the Heine boilers and Bundy radiators.

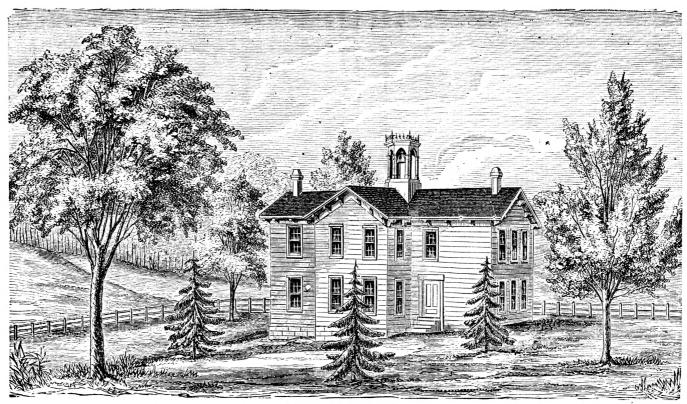
## PLATE III-THE NEW OBSERVATORY.



## PLATE III—VERTICAL LONGITUDINAL SECTION.

The observatory has been moved to the northeastern part of the Campus. It has been re-built and greatly enlarged. For description of the building and instruments see the New Observatory under the School of Mathematics and Astronomy.

# PLATE IV.



MEDICAL SCHOOL.

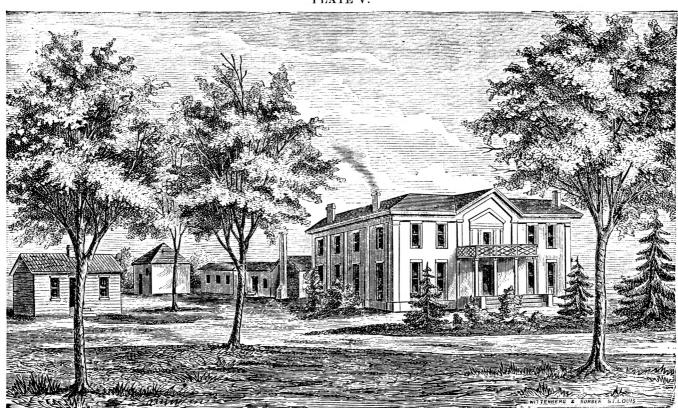
## PLATE IV.

THE MEDICAL SCHOOL is two stories and cruciform; nave, 73x22; transept, 60x25. It is in the northwest corner of the Campus and fronts east.

This ample and excellent building is pow devoted entirely and exclusively to the use of the Medical School. It stands entirely apart and is favorably located for an out door department and dispensatory, which should prove a valuable aid to the classes hereafter.

The presence of the State Veterinary Surgeon as an instructor and investigator in association with work of this school henceforth should give it a unique attraction to the medical students of our State.

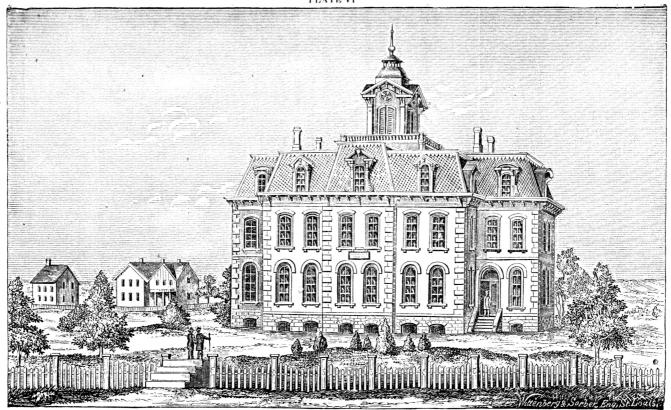
PLATE V.



AGRICULTURAL COLLEGE FARM-HOUSE.

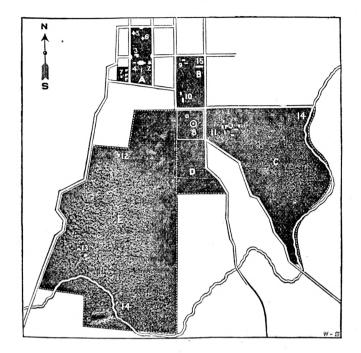
#### PLATE V.

This house fronts west 52x44, with vestibule 18x10, and back extensions 116. There are twenty rooms, besides two cottages, 2 barns with stables, ice-house and other out buildings. It was built by Wm. W. Hudson, formerly President of the University. It is a large and excellent house, and beautifully located within less than half a mile from the Campus. By appointment of the Board, the Dean of the Agricultural College now occupies this house, and takes direct charge and control of all the operations on the farm. Just as the President of the University is required to live in the dwelling on the Campus, and is charged with the care of the property thereon, so the Dean of the Agricultural College is required to live in the main dwelling on the farm, and to act the practical farmer. A reasonable rent is charged, and a portion of the house is reserved for business and class purposes.



SCHOOL OF MINES AND METALLURGY, ROLL v, PHELPS COUNTY, MO. (See that portion of the Catalogue devoted to this seheol.)

#### PLATE VII.



## GROUND PLAN OF CAMPUS AND FARM.

- A. Ground plan of the University Campus, (22 acres, with graded walks, and over 100 varieties of plants and grasses.)
- B. The Horticultural Grounds.
- C, D, E. The Agricultural College Farm (640 acres.) with numerical indications of the localities of the different improvements.
- 1. The Main Building, plates 1 and 2.
- 2. President's Dwelling.
- 3. Science Hall.
- 4. Observatory-plate 3-has been moved to northeastern part of Campus.
- 5. Medical School, plate 4.
- 6. Mineral Spring (chalybeate.)
- 7. Boarding Club Houses, No. 1.
- 8. Boone County Agricultural and Mechanical Fair Grounds, (20 acres.)
- 9. Farm Cottage, No. 1.
- 10. Boarding Club Houses, No. 2.
- 11. Farm House, plate 5.
- 12. Farm Cottage, No. 2.
- 13. Rock Spring.
- 14. The Hinkson Creek, in a horse-shoe bend of which the town of Columbia and the College Farm are situated.
- 15. Hot-house.

# ANNUAL CATALOGUE

OF THE

# MISSOURI UNIVERSITY

ΑT

COLUMBIA, MISSOURI.

1884-1885.

FOUNDED 1820-ORGANIZED 1840.

JEFFERSON CITY, MO:
TRIBUNE PRINTING COMPANY, STATE PRINTERS AND BINDERS.
1885

# ANNOUNCEMENT FOR 1885-86.

The Academic, Agricultural, Normal and Engineering Schools will open the 1st Tuesday (8th) of September, 1885. The Law and Medical Schools also open September 8th.

The departments of instruction are:

- 1. The Academic Schools of Language and Science.
- 2. The Professional Schools of Agriculture, Pedagogics, Engineering, Art, Law and Medicine; and at Rolla, the School of Mines and Metallurgy.

These Schools of the University are open to young men and to young women. Excepting in the Law, Medical and Engineering Schools (each \$40,00) and the Commercial School, the entire expense for the year for tuition and contingent fees, is \$20.00.

Board in private families, \$3.00 to \$4.50, and in the clubs at about two-thirds of these rates.

In the means of instruction and illustration, none of the institutions of learning in Missouri have superior advantages. The association of the several schools with each other is deemed a circumstance of decided advantage. When, for example, a student has entered the Law or Medical School, he has access to all the other departments of instruction without any additional expense.

Commencement day is the first Thursday of June.

Please send for catalogue to the Librarian, Missouri State University, Columbia, Missouri, and not to the President.

SAMUEL S. LAWS,

President.

## REPORT

OF THE

# PRESIDENT OF THE BOARD OF CURATORS

OF THE

# UNIVERSITY OF MISSOURI

TO THE

# GOVERNOR OF THE STATE OF MISSOURI.

University of the State of Missouri, Columbia, Mo., April 20, 1885.

To His Excellency, GOV. JOHN S. MARMADUKE:

Both by the law of Congress, approved July 2, 1862, donating lands to the several States and territories, and by the act of the General Assembly of the State of Missouri, approved February 24, 1870, to locate and dispose of the congressional land grant, the Board of Curators are required to make a report at the close of each University year, embracing certain information, as will be seen by reference to the sections of the laws referred to, printed on page 6.

In compliance with the legal requirements, I have the honor as President of the Board of Curators to make to you the following report:

Since my last annual report made to your honorable predecessor the institution has been running smoothly and prosperously. Peace and good order have reigned within its halls, and the large number of students, numbering in all the departments at Columbia about five hundred, have been pursuing their respective courses of study with diligence and success, creditable to them and gratifying to the friends of the institution.

A large amount of the information required by law to be reported to your Excellency is so fully embraced in the reports of the President and Professors filling the different chairs and herewith transmitted, and you are respectfully referred to them.

I transmit herewith also a printed copy of the memorial of the Board of Curators, which was laid before the Senate and House of Representatives of the last General Assembly, and which contains a more complete statement of the wants of the various departments of the institution, and the reasons and arguments why these wants should have been met years ago.

It abounds in facts which should be in the possession of every intelligent citizen of the state.

It is gratifying to be able to inform your Excellency that the enlargement of the old University edifice, erected more than forty years ago, and which was provided for under an act of the General Assembly, approved March 23, 1883, is about completed, and will be ready for use at the opening of the next regular session of the University. For the amount appropriated to build these additions, and to repair the old building, it is, perhaps, the most substantial and convenient structure for its contemplated uses that has thus far been erected by the State. Its architecture is plain and substantial, and yet pleasing and tasteful, whilst its internal arrangements are most convenient, and admirably adapted to their ends, every part of it being accessible from without and within. The auditorium, the superb library hall, the spacious museum, the society rooms, the recitation rooms, the corridors and waiting rooms, are all well ventilated, commodious, well adapted one to the other, and the building, when finished, will accommodate comfortably from 1,000 to 1,206 students. We think the University edifice as it now stands will be a source of pride to every intelligent citizen of the State.

Among the greatly needed wants of the institution is a chemical laboratory, separate and distinct from the main and other University buildings, which has heretofore been urgently impressed upon the Representatives in the Legislature. Aside from the great importance of this department, and the increasing demands upon it, the danger to the health of students occupying the same building, arising from the various noxious gases generated in the laboratory, makes it imperative that the State provide at an early day a separate building in which all chemical work could be performed. This is a convenience provided in nearly every institution in the country where practical and analytical chemistry is made a part of the regular course of study.

The importance of a permanent endowment fund, insuring more certainly an annual income to the institution is such an obvious necessity to which the attention of the General Assembly has been so frequently called, that it is deemed sufficient only to direct the attention of your Excellency to the subject. The University being the only educational establishment of the kind recognized in the constitution from the beginning, and standing as it does at the head of our excellent State educational system, the great State of Missouri cannot afford, if she proposes to keep abreast with her enterprising sister States, to do less than provide at least one institution of higher education affording all the facilities for the best culture to be found elsewhere in our country. Upon this important subject we are already suffering by comparison with States much younger, with far less population and wealth, whilst the considerations in favor of this more liberal policy, must be recognized by every enlightened and well regulated mind.

An impression seemed to prevail in the recent General Assembly that a large number of the students attending the University were in the language of the resolution of enquiry "small children" and "that there were branches taught in the institution which properly belonged to the graded and public schools." In response to this legislative enquiry a complete list of the students, their names, ages and places of residence was prepared and laid before the Senate and House of Representatives, and which

demonstrated the fact that for the year 1883 the average age of the students in attendance here was 20 years and 2 months, for 1884 19 years and 10 months, for 1885 20 years and 4 months. The total number of students taught in the classes of the University during the two calendar years 1883-1884 was 1401 and their average age was 20 years and 1 month. During the above period 75 to 80 counties in this State were represented, and 17 States in the Union.

This information is here repeated to show that the University of Missouri is essentially a State institution belonging to and patronized by the people without distinction of sect or party, and as above stated, affording facilities for 1,000 to 1,200 students at a nominal cost.

The statistics of the current college year show the number of students from Columbia and Boone county decreased by 51 and the number from the other counties of the State increased by eight. This is a healthy variation and is explained by the increased local patronage of our excellent town school and private \*chools. Moreover the current year shows 81 counties against 77 last year.

It is proper to state here that the Agricultural and Mechanical college was made a department of the University by act of the General Assembly, approved February 24, 1870, fifteen years ago, Boone county furnishing without cost to the State a farm of 640 acres, and donating in addition \$30,000, every dollar of which was paid, and yet not a dollar has ever been appropriated by the General Assembly for the improvement of the farm, erecting buildings thereon, the purchase of stock, facilities for experimental purposes, etc., and strange to say, although bills have been repeatedly introduced into the General Assembly looking to these objects, they have always been defeated largely by the votes of the farmers themselves. If therefore, this important department has not fully met the hopes and expectations of the friends of industrial education, this partial failure must be attributed to the neglect of the State itself.

The Executive Committee of the Board of Curators having the more immediate supervision of the School of Mines and Metallurgy, a department of the University located at Rolla, will make a report to your Excellency, exhibiting the progress, condition, wants, etc., of that department of the institution.

To make a perfect success of the public educational system as established by the Constitution and laws of the State, which is intended to afford facilities for the better education of every child, male and female, in the State, it will require the carnest co-operation of every department of the State in strengthening and advancing this noble work. Without this co-operation the Board of Curators can accomplish but little, with it, there is no reason why Missouri may not have an educational system equal to that of any of her sister States.

Earnestly soliciting your powerful aid in this great cause, and sincerely hoping your administration will be eminently successful in promoting this, as well as all the other great interests with which the prosperity of our people is so intimately identified,

I have the honor to be,

With very sincere regard,
Your obedient servant,
JAMES S. ROLLINS,
President of the Board of Curators
Of the University of the State of Missouri.

CITY OF JEFFERSON, MAY 6, 1885.

The report of the Board of Curators of the University of the State of Missourian having this day been submitted to me, exhibiting the condition of the several departments of instruction of the University, the course of study, etc., and a catalogue of the officers and students, it is directed, that an edition of thirteen thousand copies be printed, to be distributed according to law.

JOHN S. MARMADUKE, Governor.

## Approved:

ROBERT MCCULLOCH, MICH'L K. MCGRATH, JOHN WALKER. Commissioners of Public Printing.

From "An act donating lands to the several States and Territories," etc.

Sec. 5. An annual report shall be made regarding the progress of each college, recording any improvements and experiments made, with their cost and results, and such other matters, including State, industrial and economical statistics, as may be supposed useful, one copy of which shall be transmitted, by mail, free, by each, to all other colleges which may be endowed under the provisions of this act, and also one copy to the Secretary of the Interior.—Laws of the United States (1862) Chap. CXXX.

From "An act to locate and dispose of the Congressional land grant," etc., approved Feb. 24, 1870.

Sec. 15. At the close of each University year, the Board of Curators shall make a report, in detail, to the Governor, exhibiting the progress, condition and wants of the several colleges or departments of instruction in the University, the course of study in each, and the number and names of the officers and students, the amount of receipts and disbursements, together with the nature, costs and results of all important experiments and investigations, and such other matters, including State, industrial and economical statistics, as may be thought useful. The Governor shall cause the same to be printed for the use of the General Assembly and the people of the State, and shall cause one copy of the same to be transmitted, free of expense, to all the colleges which may be endowed under the provisions of the act of Congress, approved July 2, 1862, hereinbefore referred to, and also one copy to the Secretary of the Interior and one copy to the Commissioner of Agriculture at Washington City.—Laws of the State of Missouri.

# HISTORIC MEMORANDUM.

The Missouri University was founded by the grant of a township of land to the State for that purpose, when, 1820, it was organized and admitted into the Union. Another township was subsequently added to this one. The practice of devoting public moneys to the use of schools was established during our colonial period. The policy of the General Government to aid the States in the work of education, by land grants, etc., grew out of this practice and was formulated by the ordinance of 1787, in the following language, to wit:

"And for extending the fundamental principles of civil and religious liberty, which form the basis whereon these republics, their laws and constitutions are

erected, etc., etc.

"It is hereby enacted and declared, by the authority aforesaid, [i. e., of the United States in Congress assembled,] that the following articles shall be considered as articles of compact between the original States and the people in the said Territory [northwest of the river Ohio,] and forever remain unalterable, unless by common consent, to wit:

"ARTICLE 3. Religion, morality and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged."

In the act of Congress of 1812, organizing the Territory of Missouri, this article of the ordinance of 1787 was carried across the Mississippi, and somewhat amplified, as the following extract from that act shows:

"Religion, morality and knowledge being necessary to good government and the happiness of mankind schools and the means of education shall be encouraged and provided for from the public lands of the United States in said Territory, in such manner as congress may deem expedient."

When the State of Missouri was organized out of this Territory, Congress deemed it expedient, as above stated, to devote two townships of land to A" University," and one thirty-sixth of the entire public domain, together with saline and swamp lands, to "township (now district) schools."

The higher education was thus identified with the lower, as co-ordinate and constituent parts of the public school work of Missouri upon the original organization of the State. Let us look at this matter a moment, for we often hear the most erroneous and pernicious views advanced on this subject—views steeped in ignorance and fraught with untold evil to the State.

The University is an integral part of the public school organization established by law, and imbedded in the successive Constitutions of this State; and it is the traditional and established policy of this State, however imperfectly realized hitherto, to support the University as the crown and glory of the public school system. This is an indisputable state of fact; this fact is conspicuous, not by inference, but by the following explicit utterances in the first and second sections of the sixth article of the first Constitution of the State, adopted in St. Louis, July 19, 1820, viz: "Schools and the means of education shall be forever encouraged in this State.

\* \* One school or more shall be established in each township.

"The General Assembly shall take measures for the improvement of such lands, etc., to support A University for the promotion of literature and the arts and sciences; and it shall be the duty of the General Assembly, as soon as may be, to provide for the improvement and permanent security of the funds and endowments of such institution." Nothing could be more explicit and unequivocal than this incorporation of the policy and duty of maintaining "A University," as an integral part of the school organization of the State, into the organic law by which the State was originally constituted. It needs no argument to prove that there clings to the State, as an organized commonwealth, an inalienable obligation to "improve," as well as to secure the funds and endowments of its University for the promotion of science, art and literature. The higher education, even its promotion or advancement by the University, is indissolubly coupled with the lower education; and he who undertakes to sever them is false to his constitutional obli-Lation as a citizen. In order to promote or move forward the sciences, art and literature, as stipulated and covenanted by Missouri in her original organization, her University must not be allowed to lag behind, but must be kept in the front rank of the educational institutions of the age. In this, as in all cases, duty coincides fully with interest and honor.

The maintenance of the University, as well as of the public school was, therefore, a covenant obligation, deliberately and solemnly assumed by Missouri, as one of the organic conditions on which she was constituted a State, and united with her sister States in the Federal compact. Those who go hunting among the clauses of the new Constitution for their sole guidance in this matter, present a sorry spectacle to the eyes of an intelligent observer.

The munificent land grant, by act of Congress in 1862, for the establishment or aid of agricultural, industrial and military schools throughout the country, was only an instance in the line of the established policy of the General Government, not as an organizer, but as a patron of education. The several States are both patrons and organizers of the work of education, but the General Government is only a patron, not an organizer. It is worthy of being distinctly noted, that the individual autonomy of the several States in organizing and administering their work of public education has never been interfered with, nor compromised in any manner, during the hundred years that material aid has been given to the public school work out of the common heritage of the sisterhood of States. See Const. Mo., Art. XI, § 6.

It should be said therefore, to the honor of those who founded the State of Missouri, that the work of education, both in its lower and higher phases, embracing the district school system, and also "A University for the promotion of literature and the arts and sciences," was no afterthought. It is incorporated in the Enabling Act of Congress, and in the subsequent ordinance acquiescing therein, prior to the constitutional organization of the State; and the sixth article of the original Constitution is devoted to its elaboration as a part of the organic law of Missouri. (Poore's Federal and State Constitutions, pp. 1103, 1104, 1112, 1117-8.) This policy of our State, therefore, is not open to question, having been settled from its foundation, nor can the policy of each of our States engaging in the work of education be questioned, free from the fallacy of mistaking the nature of a free State; nor the joining of the higher with the lower education as a necessity, free from the fallacy of mistaking the nature of education itself.

A sound logic and a sound educational and political philosophy, therefore, fully vindicate our historic and constitutional position in maintaining the higher and the lower education—the University as well as the common school—and suggests that, as a people, we should devise the most liberal measures for the future of this commonwealth, which has come to be viewed as "the great Central Empire State of the Union." The idea of the district schools and of the University is incorporated into the very life of our State, and vitalizes its best hopes of the future.

#### THE UNIVERSITY.

## [From the Jefferson City Tribune, March 16, 1881.]

In the course of this week the 31st General Assembly will have made up its record, and it is hoped it may be an honorable and liberal one towards this institution. We are chiefly indebted to the United States, that we have in Missouri a State University at all. The enabling act of March 6, 1820, which authorized the inhabitants of the Territory to organize themselves into a State, offered every sixteenth section of the public lands for "common schools," of which there was to be one in every township, and at the same time also a large body of the public lands, which amounted to two townships for "a seminary of learning," "a University for the promotion of the arts, sciences and literature." The lower and the higher edu-

cation of the common school and the University were thus conceived in the same original "enabling act," and came to birth with the birth of the State herself. One University, many common schools, i. e., concentration for the higher education and diffusion for the lower. When the foundation of our common schools and State University were thus laid on the same rock, by the acceptance of this valuable property on the part of the territorial convention, in an ordinance irrevocable, "without the consent of the United States," the educational policy of the organized and subsequently admitted State was forever settled. It was right and proper that the States which took active part in the organization of Missouri out of territory, bought with their own money, and in her admission as an associate on equal footing with themselves in the Union, should provide against that new association disgracing and distracting them by her ignorance with its consequent train of crimes, ruffianism and infamy. The kind of education which the people who organized Missouri engaged to maintain and forever encourage as a condition precedent to admission into the Union, and as securing the culture and intelligence necessary to an honorable association therein, was, therefore, not merely that of the common school, but that of the University, a University in the front rank, "a University for the promotion of the arts, sciences and literature." The word promote means to move forward; hence the only kind of a University which answers to this language of the original bond, is one which stands in the front rank and is taking its part in moving forward the educational work of the age. And why should not the youth of Missouri enjoy educational advantages of the first rank?

When the first Constitution of the State of Missouri was adopted, a solemn engagement founded on the antecedent "enabling act" was incorporated into it; and the common schools and the University have been embodied in every Constitution of the State from that one to the present one, nor is it in the power of the people to take either the common school or the University out of the Constitution without the consent of the United States.

The educational policy of Missouri, therefore, as embracing the University with the same tenacity as the common school, is no new thing, no after thought, no postbellum discovery, nor importation from other sections of the country, but a policy conceived and born with the State itself. The obligation of each General Assembly to support this educational work in the two departments indicated is not an open question, but a matter settled by those who have gone before us, be it said to their honor, as the founders of the commonwealth of Missouri. The work of the Normal schools is incidental to the common school and wholly subservient to the raising up of the teachers therefor. That was the legislative purpose of their establishment in Missouri, as it has been of their establishment throughout the land.

Sometimes it becomes very apparent from the course of some members on the floor of the General Assembly that they have never given this matter any particular attention, for they assume that the whole educational policy of the State is unsettled and that they are called on to deal with it as an open and original question.

It should, then, be forever understood, as admitting of neither question nor controversy, that Missouri is truly bound to the maintenance of her University and common schools. The only thing left to the discretion of the General Assembly is the measure of support. But if it is a settled matter, as it undoubtedly is, that we are to have a State University, then doubtless all will agree that it should be so liberally and generously supported as to be an honor to the State. This is what the people of Missouri expect.

Prof. Tenbrook, in his history of American State Universities, commenting on Mr. Jefferson's comprehensive plan of education for Virginia, embracing a system

of diverse and graded schools culminating in a State University, and all to be supported by public taxation, summarizes the teaching of all history as to the dependence of the lower on the higher education in the following words, to wit:

"No point is better established by facts than that it is vital to primary schools that they be but part of a system which shall embrace the highest grade of scientific and literary culture."

This lesson from history is commended to all the friends of education who have not yet learned that to have successful common schools we must have a successful University and that the lower is more dependent on the higher education than the higher education is on the lower. Elevating educational influences, like the showers, come from above and not below.

#### CHAPEL TALK BY DR. TEFFT.

The University a Trust, and the Youth of the State its beneficiaries.—One morning last week during the sojourn in Columbia of Dr. J. E.. Tefft of Springfield, Mo., he attended a chapel exercise in the State University, and, in response to a call for a speech, delivered a short address, remarkable for the clearness and force with which it defined the legal relation sustained by the State to the University, as follows:

When I visited the chapel last week, I was much interested in a proposition brought forward by Dr. Law, respecting the constitutional position of the State University. Since then, I have thought about the subject, and will now give you the result of my cogitations:

If the proposition be conceded that the allotment of lands by the United States to the several States for literary purposes, was not a free gift which the States might use at will, or not use at all, but that the donation was in the nature of a trust for specified purposes, then, from that proposition, certain others depend, which are equally true and equally demonstrable. The United States in admitting a new territory into the Federal Union, and in conferring upon it all the high privileges and prerogatives of the original States, desiring to make it certain that the citizens of the new States shall be moral, intelligent and capable of governing themselves in local affairs, and of participating in the government of the whole, creates a trust to secure these ends.

The new State is the trustee. Funds are supplied by the allotment of lands for the maintenance of a university, and placed in charge of the trustee. Now the legal and moral duties of the trustee have been thoroughly demonstrated by Dr. Laws. But I propose to introduce a proposition which seems to be fairly a corollary to the main idea.

For whose benefit is this trust created? Who are the cestuy que trust? Who are the beneficiaries? The last question is the one to which I particularly ask your attention, and I have formulated the proposition made by your honored president for the sole purpose of arriving at this point. To answer this questiou, we must keep steadily in view the purpose of the United States in creating the trust.

Obviously it was not for the sake of favoring or benefiting any particular persons or class of persons. Nor was it for the advantage of the inhabitants of only the particular State. It was for the purpose of making it sure that the people of the new State should be sufficiently moral, intelligent and capable to be safe, not only to govern themselves, but to assist in governing the whole country. Who, then, is to be benefited by the proper administration of this trust? Not you alone who are here. Not the citizens of this State alone. The benefit is to accrue to the whole people of the United States. Your advantage is quite incidental. You are the re-

cipients of this advantage, in order that the State may be benefited through you. The advantage to the State is incidental. It is made a recipient, in order that through the State the whole people of the whole country may be preserved and made secure.

This, then, is the state of the case. The United States creates a trust, the State being trustee for its own benefit.

What relation do you sustain to this great trust?

Just this: The State, in the administration of the trust, has created subordinate ones, and you are the trustees of these subordinate trusts.

The subject matter is the moral integrity, mental capacity, mental power, discipline, knowledge, skill and general culture which are to be acquired at this great seat of learning. The creator of these subordinate trusts is the State, and to it you are responsible for their faithful administration. Who is the cestuy que trust here? Who are the beneficiaries? Not yourselves, it is the State, the whole people of the State. What duties then are imposed upon you? Several:

- 1. In the first place it is your duty to accept the trusts, fully, freely and in good faith. That is, you accept the advantages here offered for improvement in morals, learning, arts and culture, to the full extent of your capacities of acquisition and cultivation. With the subject matter of a trust comes the duties and responsibilities which properly attach to it and which are a part of the very idea of trusteeship and must be assumed in good honest purpose and faith, and with a full sense of obligation.
- 2. These acquisitions are to be preserved, nursed and cared for that there be no waste.
- 3. He who accepts a trust of lands or flocks is responsible for the natural increase. So here, these acquisitions should increase. They must be as good seed which is cast into good ground, which will germinate, increase, grow and fructify and bring forth fruit, some thirty, some sixty, some one hundred fold.
- 4. The moral and intellectual culture here acquired is to distinguish you from the rest of mankind (not possessing it) and to mark your consequences among your fellows. It is not to be concealed. It is not to be trodden. It is not to be enjoyed or used in seclusion. The example and influence must not be lost. You should be as a city which is set upon a hill.
- 5. These capacities are to be actively and affirmatively employed for the common benefit.

All the great questions which agitate and interest society, and upon the solution of which the progress of cultivation and the welfare of the people depend, are to be discussed, considered and finally decided by thinking men and women, by educated men and women. In a few years you are to control the destinies of this people. One hundred graduates of the University of Missouri, will have more influence upon the course of public thought and action and bear a weightier responsibility than ten thousand of the lowest order of intelligences.

6. Finally: These subordinate trusts of yours differ from those which are under the control of our Chancery Courts in this—that you give no bond, and are subject to no legal control. Yet do not over-estimate your freedom. The Almighty God is the Supreme Chancellor who will watch your administration, and if you are active and faithful, will award you your just fees and discharge you from responsibility, and if you are not, do not believe that you will escape His process, or His merited disapprobation and condemnation.—[Mo. Statesman, April 22, 1881.]

It is claimed in the debates of Congress in 1821 and 1829, that the grants to the States for educational purposes were "pure donations." This doctrine did not pre-

vail. Mr. Benton, the distinguished senator from Missouri, and others, successfully maintained that "these grants were not donations, but that they were a part of the compacts by which the new States were received into the Union." Judge Campbell, in his Political History, p. 221, sets forth the same doctrine in the following words: "This early recognition of the necessity of schools and colleges, enforced in the form of a perpetual compact between the government and the people and the States in the Territory has been a source and stimulus of intelligence, the importance of which cannot be estimated. The duty of the State to educate her children generously and thoroughly can never be disregarded without violating the pledge on which the rights of the State and Territory were created."

This fundamental doctrine which underlies our organized school work as a State has been too long overlooked.

### SELECTING THE SITE FOR THE STATE UNIVERSITY.

By an act of the Legislature of Missouri, approved February 8, 1839, five commissioners were appointed to select a site for the State University. The act provided that the site should contain at least fifty acres of land, in a compact form within two miles of the county seat of the county of Cole, of Cooper, of Saline, of Howard, of Boone or of Callaway.

It was made the duty of the commissioners to meet in the City of Jefferson, on the first Monday of June, 1839, and thereafter at such times as they might appoint, at the county seat of each county mentioned, to receive conveyances of land and subscriptions of money—to be void if the University was not located at the county seat of the county in which they were made.

After visiting all the county seats, and receiving bids as aforesaid, the commissioners were to return to the seat of government and open the bids, "and the place presenting the most advantages to be derived to said University, keeping in view the amount subscribed, and locality and general advantages, shall be entitled to its location."

On the 24th of June, 1839, the commissioners met in Jefferson City, opened all the bids, and located the University of Missouri, at Columbia, Boone county. The following is the language of the award:

"The commissioners, appointed by law to select a site for the University, have agreed unanimously in the choice of Boone county for its location. Given under our hands at the City of Jefferson, this 24th day of June, in the year 1839.

(Signed)

JOHN GANO BRYAN, CH. DURKEE, ARCHIBALD GAMBLE, JOHN S. PHELPS, PETER H. BURNETT,"

The organization of the State University and the erection of the main edifice (plate 1) followed close upon this act of location. It is still a matter of some importance, to notice that, in pursuance of the purpose of the land grant of 1820, the location of the University was accomplished by the authority of the State, in the most formal, open and public manner, after a free and extensive competition.

The common school law provides for the separate education of the colored people, and the provisions of the law are the same for both classes, excepting some clauses favoring the colored people. The higher education is also provided for them by the State. The XXXth General Assembly passed an appropriation bill which not only provided for the current expenses of the Normal Department of the Lincoln Institute but also for the payment of the debt resting on that institution. However, as up to that time the Lincoln Institute had been a private property, and as our present Constitution forbids appropriations to private enterprises, Governor

Phelps very properly withheld his approval of an appropriation till the Lincoln Institute was conveyed to the State. This was done, and the State now owns and has entire control of this property. The Lincoln Institute, therefore, now stands as an institution of the higher education, crowning the provisions of law in this State for the separate education of the colored people. This completes, in a very satisfactory manner, the solution of this educational problem which has vexed so many of the States.

#### A CLASSIC MONUMENT.

The original Jefferson monument or tombstone stands on the campus near the main edifice. This object of national interest is worth a trip from any part of the State to see it, and it is entitled to more than the passing notice which can here be given it. Last summer, 1883, at the instance and solicitation of some friends of the Missouri University, the Misses Randolph, of Edge Hill, Virginia, great-grandchildren of Mr. Jefferson, presented the monument to this institution—the new and larger monument, out of the same material, of the same shape and with the same inscriptions, voted by Congress, having displaced the old one that had marked the resting place of the author of the Declaration of Independence for more than half a century. Mr. Jefferson was a friend of higher education by the State, and this monument is fittingly associated with the University of the greatest of the States organized out of the immense territory acquired during his administration as President of the United States.

COLUMBIA, Mo., March 29th, 1884.

PRESIDENT S. S. LAWS:

Dear Sir:—In compliance with your request, I herewith present you the following copy of a brief manuscript left by Thomas Jefferson. On Feb. 9th, 1884, while in Washington City, I visited the Department of State, where I saw the Original, and took from it the copy as given below.

Yours, etc.,

J. W. MOUNTJOY,

Pastor of the Christian Church, Columbia, Mo.

"Could the dead feel any interest in Monuments or other remembrances of them, when, as Anacreon says:

'θλίγη δὲ χεισόμεσθα Κύνις ὀστέων λυθέντων,\*

the following would be to my manes the most gratifying: On the grave, a plain die or cube of 3 ft., without any mouldings, surmounted by an Obelisk of 6 ft. height, each of a single stone. On the faces of Obelisk the following inscription, and not a word more:

HERE WAS BURIED

### THOMAS JEFFERSON,

Author of the Declaration of American Independence, Of the Statute of Virginia for Religious Freedom, And Father of the University of Virginia,

\*A heap of ashes we shall lie, Our bones to dust dissolved. because by these, as testimonials that I have lived, I wish most to be remembered;—to be of the Coarse Stone of which my Columns are made, that no one might be tempted hereafter to destroy it for the value of the materials. My bust by Ciracchi, with the pedestal and truncated column on which it stands, might be given to the University if they would place it in the Dome room of the Rotunda. On the Die of the Obelisk might be engraved:

Born April 2, 1743, O. S. Died ——." [July 4, 1826.]

PREAMBLE AND RESOLUTIONS OF THE BOARD OF CURATORS OF THE UNIVERSITY OF THE STATE OF MISSOURI, PASSED JANUARY, 1884.

#### Preamble and Resolutions:

Whereas, Miss Mary B. Randolph, Miss Sarah H. Randolph, Miss Carrie R. Randolph, Mrs. Ellen W. Harrison, Mrs. Maria Mason and Dr. W. C. N. Randolph, great grand-children of the illustrious patriot and statesmen, Thomas Jefferson, residing in Albemarle county, Virginia, having upon the request of Pres. S. S. Laws and Prof. A. F. Fleet, presented to the Curators of the University of the State of Missouri, the old granite monument (a new one having been substituted for it by the Congress of the United States) which has for more than fifty years marked the burial place of Mr. Jefferson at Monticello; also the marble tablet accompanying same, on which is inscribed the memorable epitaph prepared by Mr. Jefferson himself, a short time before his death, and which is in the following words:

#### HERE WAS BURIED

## THOMAS JEFFERSON,

Author of the Declaration of American Independence, of the Statute of Virginia for Religious Freedom, and Father of the University of Virginia.

And on the obelisk is the following:

Born April 2nd, 1743, O. S. Died July 4th, 1826.

This gift is a most appropriate one associated as is the name of Thomas Jefferson with the cause of Human Freedom, Religious Liberty, the establishment of Free Institutions upon the American continent, and of the cause of Common School and University education, in the State that gave him birth; and for the farther reason that it was during the administration of Mr. Jefferson that the vast country stretching from the mouth of the Mississippi river to the mouth of the Columbia river upon the Pacific Ocean, then known as Louisiana, embracing within its boundaries a vast empire one and a half times as large, if not larger than the territory at that time owned by the United States on the east side of the Mississippi river, and out of which among others was carved the great State of Missouri. These and similar facts make this a most gracious and appropriate gift, coming as it does from the descendants of this illustrious citizen of the American Republic; and the beautiful eampus of the University of the State of Missouri a most fitting resting place for this time-worn granite shaft around which gather so many delightful memories forever to be associated with the history of the American Republic, and so well

calculated to strengthen the patriotism and awaken the ambition of the ingenious youth of Missouri and other States who shall come hither to seek in these classic halls, that mental culture and all the other refinements which education and knowledge give to those who diligently seek them, and at the same time inducing a laudable ambition to imitate the example of him whose memory and whose fame this obelisk is intended to perpetuate; be it therefore,

Resolved, By the Curators of the University of the State of Missouri, in regular session assembled, that the thanks of this Board are hereby tendered to the donors for this gracious and acceptable gift, assuring them that it is not only properly appreciated by the members of the Board and all who are connected with the University, but also by the entire people of the State of Missouri for the benefit of whose sons and daughters this University was established, and to assure them that this sacred relic has already found a permanent resting place in our campus.

Resolved, That the thanks of the Board are also due, and are hereby tendered, to President S. S. Laws and Prof. A. F. Fleet for their unsolicited, timely and active agency in not only originating the purpose to procure the monument of Jefferson for the University, but for prosecuting that purpose in the midst of difficulties to success.

Resolved, That the Secretary of this Board cause to be prepared in a suitable manner a copy of the foregoing preamble and resolutions, signed by the President of the Board and countersigned by the Secretary with the great seal of the University attached thereto, and forward it to the donors, and also to President S. S. Laws and Prof. A. F. Fleet.

JAMES S. ROLLINS,

Pres. Board of Curators University of Missouri.

ROBERT L. TODD,

Secretary.

An extract is here given from a lecture by A. F. Fleet, Professor of Greek, delivered in the University Chapel January 9, 1884. It is an important lesson in geography not found in the books:

"But of Mr. Jefferson's services in what is known in history as the 'Louisiana Purchase,' I will speak for a few moments; for these services alone would form a reason entirely satisfactory that Missouri, now the most powerful of the States included in that purchase, should be the repository of a memorial so intimately connected with the statesman who was the magna pars of that memorable transaction.

"I give herewith a tabular statement, from which it will be seen that the 'Louisiana Purchase' comprised what are to-day nine States and five Territories, with a total area of 1,205,436 square miles, or enough to make twenty States of the size of Missouri; and since the area of the whole United States at the conclusion of the Peace with Great Britain in 1783 was only 827,884 square miles, we see that the territory acquired by this purchase was one and a half times as much as that of the Whole of the rest of the United States at that time. By comparison also with the census of 1880, we find that the 'Louisiana Purchase' contains one-third of our

present area, one-sixth of the population and one-ninth of the taxable wealth of the whole country, while the center of population is moving so rapidly in this direction that certainly by 1900 (perhaps 1890) it will be found to be within the limits of that magnificent domain.

	States.	Square miles.	Population, 1880.	Taxable property.
1. 2. 3.	LouisianaArkansas.	52,198	939,946 802,525	\$ <b>f</b> 60,162,439 86,409,364
4. 5.	Missouri	55,045	2,168,380 $1,624,615$ $780,773$	532,795,801 398,671,251 258,028,687
6. 7. 8.	Kansas Nebraska Colorado.	75,995	996,096 $452,402$ $194,327$	160,891,689 90,585,782 74,471,693
9.	Oregon	95,274	174,768 8,133,832	\$1,814,538,790
	Territories.	054,557		=======================================
1. 2.	Dakota	86,294	$\frac{52,881}{10,792}$	\$20,321,530 6,440,876
3. 4. 5.	Montana Wyoming Washington	97,883	$10,982 \\ 6,637 \\ 29,143$	18,609,802 13,621,829 23,810,693
	Total		110,435	\$82,804,730
	Grand total	1,205,436	8,244,267	\$1,897,343,520

<sup>&</sup>quot;And we cannot too strongly nor too often emphasize the fact that this imperial domain was acquired without the spilling of a drop of blood or the shedding of a single tear; and strangest of all political anomalies, the taxes of a nation were lowered while its debts were being paid."

Cicero has said: "Yet, if we will only look at facts, there have been many civic transactions that have surpassed feats of arms in importance and renown."

And the muse of Milton has beautifully sung:

<sup>&</sup>quot;Peace hath her victories, no less renowned than war."

# CORPORATION.

"The University is hereby incorporated and created a body politic, and shall be known by the name of The Curators of the University of the State of Missouri."—Corporate name, Rev. Stat. 1879, Sec. 7230.

HON. JAMES S. ROLLINS, LL. DColumbia CHARLES C. BLAND, ESQRolla NORMAN J. COLEMAN, U. S. Com. Ag. St. Louis Term expires Jan. 1, 1	1887.
JOHN S. CLARKSON, A. M	1889.
ROBERT BEVERLY PRICE, A. M Columbia  JAMES R. ESTILL	1891.

## OFFICERS OF THE BOARD.

HON. JAMES S. ROLLINS, LL. D	President.
JERRE C. CRAVENS, ESQ	
ROBERT L. TODD,	ROBERT BEVERLY PRICE,
Secretary.	Treasurer.

## SCHOOL OF MINES.

## EXECUTIVE COMMITTEE.

JUDGE CHARLES C. BLAND, Chairman	Rolla.
JERRE C. CRÁVENS, ESQ	Springfield.
JOSEPH CAMPBELL	
D. W. MALCOLM, Treasurer	Office at Rolla.
HENRY WOOD, Secretary.	

Number.—Const. 1875, Art. xi, Sec. 5. The government of the State University shall be vested in a Board of Curators, to consist of nine members, to be appointed by the Governor by and with the advice and consent of the Senate. University Curator Law, 1877:

QUORCM.—Sec. 1. At all meetings of the Board of Curators, seven members

shall be necessary to constitute a quorum for the transaction of business.

RESIDENCE.—Sec. 3. The Board of Curators of the State University shall hereafter consist of nine members, who shall be appointed by the Governor, by and with the consent of the Senate, three of whom shall be residents of the county of Boone, two of the county of Phelps, two of the part of the State north of the Missouri River, and outside of the county of Boone, and two of that part of the State south of the Missouri River, and outside of the county of Phelps, and no person shall be appointed a curator who shall not have attained the age of twenty-one years, or who shall not be a citizen of the United States and a resident of the State of Missouri

two years next prior to his appointment.

Term of Office.—Sec. 4. As soon as said Curators qualify, they shall divide themselves into three classes of three members each, one of which classes shall hold

themselves into three classes of three members each, one of which classes shall hold their office for two years, from January 1, 1877, and until their successors are appointed and qualified; one class for four years from January 1st, 1877, and until their successors are appointed and qualified and one class for six years from January 1st, 1877, and until their successors are appointed and qualified.

FILLING VACANCIES.—Sec. 5. During the session of the General Assembly in 1879, and each regular biennial session thereafter, the Governor shall, by and with the consent of the Senate, fill all vacancies caused by the expiration of the term of office of any Curator, and he shall also fill all vacancies occasioned by death, resignation or removal which may occur while the General Assembly is not in session. nation or removal which may occur while the General Assembly is not in session, but all such appointees shall continue in office until the next meeting of the General Assembly next thereafter, and until their successors be appointed and qualified.

### BOARD OF VISITORS.

HON. CYRUS S. BROWN	Shelby county.
COL. ALEXANDER F. DENNY	Randolph county.
CHARLES E. LEONARD, Esq	
HON. E. W. FOX	
A. A. WALKER, Esq	Cooper county.

Sec. 16. Inasmuch as all trust funds committed to the management of the State are to be deemed a sacred deposit and to be vigilantly guarded from perversion, waste or wrongful use, it is provided that a Board of Visitors, to consist of five persons; three at least of whom shall be citizens eminent in the agricultural and mechanic arts, and not less than two graduates of the University, shall be appointed by the Governor. It shall be the duty of the visitors to make personal examination into the condition of the University, in all its departments, once at least each year, and report the result to the Governor, suggesting such improvements and recommendations as they may consider important, which report shall be published with the annual report of the Curators. The visitors shall receive no per diem, but they, together with the Curators, shall have their actual expenses paid, and upon the certificate of the Secretary of the Board of Curators, the Auditor shall draw his warrant upon the Treasure of the State, who shall pay the same out of any money in the Treasure not otherwise appropriated. the Treasury not otherwise appropriated. Acr, February 24, 1870.

The visitorial power holds a conspicuous and important place in European universities, and its faithful exercise with us would doubtless exert a wholesome influence.

# THE UNIVERSITY FACULTY.

(Excepting that of the President the names are printed in their chronological order of appointment.)

Samuel Spahr Laws, A. M., M. D., LL. D., President and Professor of Metaphysics.

JOSEPH G. NORWOOD, M. D., LL. D., Emeritus Professor of Physics and Dean of the Medical Faculty.

JOSEPH FICKLIN, PH. D.,
Professor of Mathematics and Astronomy.

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

Hon. Philemon Bliss, LL. D., Professor of Law and Dean of Law Faculty.

Andrew W. McAlester, A. M., M. D., Professor of Surgery and Diseases of Women and Children.

George D. Emerson, M. E., (M. S.\*), Professor of Civil and Mine Engineering and Graphics.

WM. A. CAUTHORN, A. M.,
Assistant Professor of Mathematics.

JUDGE HENRY S. KELLEY, LL. D., Lecturer on Criminal Jurisprudence.

JUDGE ARNOLD KREKEL, LL. D., Lecturer on Federal Jurisprudence.

S. M. TRACY, M. S.,
Professor of Botany and Entomology.

M. M. Fisher, A. M., D. D., I.L. D., Professor of Latin Language and Literature.

THOMAS JEFFERSON LOWRY, S. M., C. E.,
Professor of Civil Engineering and Dean of Engineering Faculty.

DAVID R. McAnally, Jr., A. M., Professor of English and Dean of Normal Faculty.

CHARLES E. WAIT, C. E., M. E., (M. S.\*),
Director and Professor of Analytical Chemistry and Metallurgy.

Woodson Moss, M. D.,
Professor of Anatomy and Physiology and Secty.

<sup>\*</sup>Mining School.

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A. F. FLEET, A. M.,

Professor of Greek and Comparative Philology.

James Shannon Blackwell, A. M., Ph. D.,

Professor of Hebrew and Semitic Liter ure and of Modern Languages.

Mrs. O. A. CARR,

Principal of Ladies Department and Adjunct Professor of English.

CONRAD DIEHL, Professor of Art.

BENJAMIN FRANKLIN THOMAS, Ph. D., Professor of Physics.

CHRISTOPHER G. TIEDEMAN, LL. B., Resident Professor of Law.

LIEUTENANT JOHN JANUARY HADEN, (Detailed from the Regular Army),

Professor of Military Science and Tactics, and Assistant in Chemistry.

J. W. SANBORN, B. S.,
Professor of Agriculture and Dean of Agricultural Faculty.

J. W. SPENCER, B. A. Sc., A. M., Ph. D., (Gott.), F. G. S., Professor of Geology and Mineralogy.

J. C. Jones, A. M.,

Assistant Professor of Languages and Secretary of Faculty.

J. F. Hanna, A. M., M. D., Professor of Practice of Medicine and Therapeutics.

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

JAMES BLACK, A. M., Assistant Professor of Languages.

W. H. SCHUERMANN, C. E., Assistant Professor of Physics.

E. D. W. EATON, B. S., (M. S.\*), Professor of Mathematics.

W. G. CLARK, B. S.," (M. S.\*),

Assistant in Mathematics and Chemistry and Secretary of the Faculty.

E. A. DRAKE, A. B., (M. S.\*), Instructor in English Branches.

L. A. TAFT. B. S..

Assistant Professor of Horticulture and Superintendent of Horticultural Grounds.

PAUL PAQUIN, V. S.,

Professor of Veterinary Science.

J. H. DRUMMOND, A. B., A. M., Librarian and Proctor.

<sup>\*</sup>Mining School.

"The Curators shall have power to appoint and remove, at discretion, the pres-

ident, professors and tutors of the University, to define and assign their powers and duties, and to fix their compensation." [Curator Law, 1877. Sec. 2.]
"Neither the General Assembly nor any county, city, town, township, school district or other municipal corporation, shall ever make an appropriation, or pay from any public fund whatever, anything in aid of any religious creed, church or sectarian purpose; or, to help to support or maintain any private or public school, academy, seminary, college, university or other institution of learning, controlled by any religious creed, church or sectarian denomination whatever; nor shall any grant or donation of personal property or real estate ever be made by the State, or any county, city, town or municipal corporation, for any religious creed, church or sectarian purpose whatever." Const. 1875, Art. XI, (Education) Sec. 11.

"Neither the president nor professors are permitted to exercise the functions of a minister of the gospel, or any other learned profession, during their continuance in office," etc. The statute on which this interdict rested was repealed in 1877. Hence in the Law and Medical Schools, for example, members of faculty are not required to abstain from the exercise of the function of those learned professions, nor is it at all desirable that they should do so: provided, always, that University duties be held paramount and of this the Curators judge.

# STUDENTS

#### ABBREVIATIONS.

<b>A</b> .,	Agriculture.	М.,	Mathematics.
Anat.,	Anatomy.	Med.,	Medicine.
в., .	Biology.	Met.,	Metallurgy.
Bk.,	Book-keeping.	Ms., '	Metaphysics.
<b>C.</b> ,	Chemistry.	M. L.,	Modern Languages.
Civ. Eng.,	Civil Engineering.	М. Т.,	Military Tactics.
Cl.,	Calisthenics.	Min. Eng.,	Mine Engineering.
D.,	Drawing.	N.,	Normal.
E.,	English.	Phar.,	Pharmacy.
G.,	Greek.	Ph.,	Physics.
G. & M.,	Geology & Mineralogy.	S.,	Semitic Languages.
L.,	Latin.	Sur.,	Surveying.
	Law.	Top'l Eng.,	Topographical Engineering.
Ly.,	Laboratory.		

# UNDER GRADUATES.

Name.	Residence.		Schools Attended.
Acuff, Alonzo	Polk co	unty	yC., M. L., Ms., D., G. & M.
Adams, James Linn		"	Med.
Adams, John Henry		"	E., L., Ph., B., N., Bk.
Alexander, Permelia Belle		"	E., M., L., Anat., B.
Alexander, James Marion		"	Med.
Alexander, John Sherman		"	Ms., D., Ly., Bk., Eng., G & M.
Alexander, Howard Reid		"	E., L., M., D., Bk., B.
Allen, Charles Kyes		"	L., E., Ph., M. L.,
Allison, Thomas Edward		"	L., Ms., M. L., E., B.,
Amick, Wm. Kennedy		"	E., Ph., M. L., C., M.,
Austin, Benjamin Parker		"	E., L., M. L., Ph.
,			
Banks, Anita, McAfee	.Boone	"	L., E.
Barrett, William George	"	"	L., M., Ph., M. L.
Barton, Joseph	Howard	"	Law.
Bascom, Frank Dinwiddie	. Lafayette	"	L., S., Ph., D., B., M.
Bass, Lillian Lawrence	.Boone	"	D., B., L., M. L., M., E.
Bass, Lucy	"	"	B., M. L.
Bassett, Wm. Henry		"	E., C., D., Bk., Ly.
Bates, Katherine		"	L., M., E., M. L.
Bates, Anne		• 6	L., M., E., Ph., G., C., N.
Baughman, Chas. Lee	Platte	. 66	E., B., Bk., A., D.
Beal, Bert, Leon		"	L., M. L., Ph., M., C., E.
Beasley, George Hamilton	. Boone	"	E., M., Ph., L., B., Bk
Bedford, Lizzie Ellen	Boone	"	E., B., Anat., M., C.
Beery, Byron Buckingham	Clinton	66	M., L., Ph., D., B., C. M. L.
			Sur.
Belcher, Geo. L	Carroll	"	M. L., B., Anat., L., E., G.
Berry, Polly		"	".E., N., B., M., L.
Berry, Wm. Fabricius	Boone	"	L., E., Anat., B., D., M., M.
			L., Bk.
Bird, Nat S	Kansas		A., Anat., E.
Bishop, James Lewallen	Grundy co	ount	yLaw, E., M. L., Ph., M.
Bishop, Stephen Smith	Mercer	"	Law.
Blackwell, Zadok Thomas	Callaway	"	Med.
Bosserman, David Wenrick	Caldwell	66	Med.
Botts, William Warren	Audrain	"	Ms., C., D., L., M. L., Ly., Bk.,
			G. & M.
Boulton, Payne Augustine	Boone	"	Ms., E., Ly., N., Bk., G. & M.
Boulton, John Wofford		"	M., Ph., D., Ms., M. L., C.
Bowen, Benton		"	L., C., S., G., M., D.

Brainerd, Zach	Name.	Residence.		Schools Attended.
Brooks, James Alfred.         C. Girardeau         "	Brainerd, Zach	Clark co	unt	tyMed.
Brooks, James Alfred.         C. Girardeau         "	Brierley, James Scott	Cass	66	E., L., G., Ms., Law.
Brooks, Robert Rolla			"	
Brooks, Stephen Smith				
Brown, Addison H   Newton   Buckner, Quarles Aylette   Madison   H   L., M. B., Bk.		"	66	
Bunch   Bunc		Newton	"	
Bk. N.			"	
Bumbarger, Hattie Sue	= aomoi, quaries il revee			
Bk   Burnes, Alonzo Daniel   Platte   Burns, Thomas Edward   Marion   L. M., E., B., D., M. L., G., C., Bk	Rumbargar Hattie Sue	Lowis	"	
Burnes, Alonzo Daniel. Platte Burns, Thomas Edward. Marion " .L. , M. , E. , B. , D. , M. L. , G. , C. , Bk.  Burch, Cora Hackman Boone Burt, Leo Callaway Buscher, Benjamin. Franklin " .E. , M. , Ph. , B. , D. , N.  Carey, Estill Evan Cooper " .L. , Ph. , B. , D. , N.  Carey, Jeff. Davis Johnson Carssow, Eugene, Julius S. Genevieve " .L. , Ph. , M. L. , M., C. , B.  Castllo, Jasper Leeman St. Charles " .L. , Ph., M. G.  Castllo, Jasper Leeman St. Charles " .L. , Ph., D. , M. , Bk.  Cauthorn, Wm. Broadus Boone " .L. , Ph., D. , M. , Bk.  Chandler, Laura Katie Boone " .L. , B., Ph., D. , M. , Bk.  Chipps, James Wm Boone " .E. , M. L. B., Anat., D.  Christie, Robt. James Lewis " .E. , M., Bk.  Clark, Henry Whitney Dent county Law, M. L., E.  Clary, Joseph Monroe Illinois Law, M. L., Ph., L., M., C., E.  Clary, Joseph Monroe Illinois Law.  Clendenin, Wm. Wallace Audrain county Law.  Clendenin, Ida May " C., Ph., B., D., Sur., M. L., M.  Coffey, Alfred Wm Platte " .C., E., Bk.  Coons, Wm. Edgar Marion Was. E., D., G., L., M. L., Ly., Bk., G. & M.  Corkins, Lop Vernon Corkins, Lop Vernon Craig, Charles Henry Callaway Med.  Craig, Charles Henry Callaway Med.  Craven, Samuel Francis Clay Lap, D., M.  Cravens, Oliver Jasper Lafayette E., M., Bk.  Crews, Curtis Boone Cist. M., L., B., D., M.  Crister, William Emory Monroe E., B., D., M.  Crittenden, William Jackson Cole M. L., Ms., E., L., B.	Dumbarger, Hattle Site	LIC W IS		
Burns, Thomas Edward   Marion   W. L., M., E., B., D., M. L., G., C., Bk.	Rurnes Alonzo Doniel	Platta	"	
C., Bk.   Burch, Cora Hackman   Boone   Burt, Leo   Callaway   Buscher, Benjamin   Franklin   E., M., Ph., B., D., C.	_			
Burch, Cora Hackman Boone Burt, Leo Callaway  Buscher, Beajamin Franklin	Burns, Thomas Edward	Marion		
Burt, Leo	Punch Come Harland	D		
Buscher, Benjamin				Ph., E., B., M., D., N.
Campbell, Willie Ann				
Carey, Estill Evan	Buscher, Benjamin	Franklin	"	E., M., Ph., B., D., C.
Carey, Estill Evan				
Carey, Estill Evan         Cooper         " . L., Ph., M. L., M., C.           Carney, Jeff. Davis         Johnson         " . L., M. E., M., C., B.           Carssow, Eugene, Julius         S. Genevieve         " . E., L Ph., M., G.           Castlio, Jasper Leeman         St. Charles         " . Ly., Ph., C., B.           Cauthorn, Wm. Broadus         Boone         " . Ly., Ph., D., M., Bk.           Chandler, Laura Katie         Boone         " . E., M., D., M., Bk.           Chinn, James Peddicord         Lafayette         " . E., M., Bk.           Chipps, James Wm         Boone         " . E., M., Bk.           Chipps, James Wm         Boone         " . E., M., Bk.           Chipps, James Wm         Boone         " . E., M., Bk.           Chipps, James Wm         Boone         " . E., M., Bk.           Chipps, James Wm         Boone         " . E., M., Bk.           Chipps, James Wm         Boone         " . E., M., Bk.           Chipps, James Wm         Boone         " . E., M., Bk.           Clark, Honty Whitney         Dent         County M. L., Ph., D., M. L., C., Ly., B.           Clark, Henry Whitney         Dent         county M. L., Ph., L., M., C., E.           Clary, Joseph Monroe         " Illinois         Law.           Clendenin, Wm. W	Campbell, Willie Ann	Howard	"	M., Ph., B., D., N.
Carney, Jeff. Davis Johnson L., M. L., M., C., B. Carssow, Eugene, Julius S. Genevieve E., L. Ph., M., G. Castlio, Jasper Leeman St. Charles Ly., Ph., C., B. Cauthorn, Wm. Broadus Boone Ly., Ph., D., M., Bk. Chandler, Laura Katie Boone E., M. L., B., Ph., D., M., Bk. Chinn, James Peddicord Lafayette E., M., Bk. Chipps, James Wm Boone E., M., Bk. Chipps, James Wm Boone Lewis E., M., Bk. Clark, Louis Vaughn Montana Law, M., L., E. Clark, Henry Whitney Dent county L., Ph., L., M., C., E. Clary, Joseph Monroe Illinois Law. Clendenin, Wm. Wallace Audrain Law. Clendenin, Ida May " C., Ph., B., D., Sur., M. L., M. Coffey, Alfred Wm Platte County L., M., G., B., D. Colley, Sanford Francis " C., E., Bk. Coleman, Nannie Sterne Boone L., M., G., B., D. Conley, Sanford Francis " E., D., G., L., M. L., Ly., Bk., G. & M.  Corkins, Lop Vernon Vernon E., M., M. L., Ph., D., B., E., Bk. Cowden, Florence Miller Boone E., M., M. L., Ph., D., B., E., Bk. Craig, Charles Henry Callaway Med. Craighead, William Spencer Callaway Med. Craighead, William Spencer Callaway Med. Craesey, Charles Roger Lafayette E., M., Bk. Creasey, Charles Roger Lafayette E., M., Bk. Crews, Curtis Boone E., L., B., M., Anata., Bk., D. Crittenden, William Jackson Cole M., L., Ms., E., L., B.			"	
Carssow, Eugene, Julius S. Genevieve "E., L Ph., M., G. Castlio, Jasper Leeman St. Charles Cauthorn, Wm. Broadus Boone "L., B., Ph., D., M., Bk. Chandler, Laura Katie Boone "E., M. L. B., Anat., D. Chinn, James Peddicord Lafayette Chipps, James Wm. Boone Christie, Robt. James Lewis "E., M., Bk. Clark, Louis Vaughn Montana Law, M., L., E. Clark, Henry Whitney Dent county M. L., Ph., L., M., C., E. Clary, Joseph Monroe Illinois Law Clendenin, Wm. Wallace Audrain county M. L., Ph., C., B., D., M., Ly. Clendenin, Ida May "C., C., Ph., B., D., Sur., M. L., M. Coffey, Alfred Wm. Platte Coleman, Nannie Sterne Boone "L. M., G., B., D. Conley, Sanford Francis "E., D., L., M., G., Bk. Coons, Wm. Edgar Marion Skene Marion "E., M., L., M. L. Corder, Leslie Walter Lafayette Cowden, Florence Miller Boone "E., M., L., M. L. Craig, Charles Henry Callaway Craighead, William Spencer Callaway Crayens, Oliver Samuel Francis Clay Creasey, Charles Roger Lafayette Crews, Curtis Boone "E., L., B., D., M. Crisler, William Emory Monroe "E., B., M., Anat., Bk., D. Crittenden, William Jackson Cole "M. L., Ms., E., L., B.			"	
Castlio, Jasper Leeman St. Charles Cauthorn, Wm. Broadus Boone Chandler, Laura Katie Boone Chinn, James Peddicord Lafayette Chipps, James Wm Boone Christie, Robt. James Lewis Clark, Louis Vaughn Montana Law, M., L., E. Clark, Henry Whitney Dent Clary, Joseph Monroe Illinois Clendenin, Wm. Wallace Audrain Clendenin, Ida May "C., Ph., B., D., Sur., M. L., M. Coffey, Alfred Wm Platte Coleman, Nannie Sterne Boone Conley, Sanford Francis "County Marion Corkins, Lop Wernon Corder, Leslie Walter Lafayette Cowden, Florence Miller Boone Craig, Charles Henry Callaway Crayens, Oliver Callaway Crayens, Oliver Samuel Francis Clay Creasey, Charles Roger Lafayette Crews, Curtis Boone Crister, William Emory Monroe Crittenden, William Jackson Cole  "L., B., Ph., D., M., Bk. E., M. L., B., Ch., M. L., C., Ly., B. E., M., L., M. L., C., Ly., B. E., M., L., M. L., E. County M. L., Ph., C., B., D., M., L., M. E., M., L., Ph., C., E. E., M., L., M., E. Craven, Samuel Francis Clay Creasey, Charles Roger Lafayette Crittenden, William Emory Monroe Crittenden, William Jackson Cole "E., L., B., D., M.			"	
Cauthorn, Wm. Broadus. Boone Chandler, Laura Katie. Boone Chinn, James Peddicord. Lafayette Chipps, James Wm. Boone Christie, Robt, James. Lewis Clark, Louis Vaughn. Montana Clark, Henry Whitney. Dent Clary, Joseph Monroe. Illinois Clendenin, Wm. Wallace. Audrain Clendenin, Ida May. "Co., Ph., B., D., Sur., M. L., M. Coffey, Alfred Wm. Platte Coleman, Nannie Sterne. Boone Conley, Sanford Francis. "C., E., D., L., M., G., B., D. Corkins, Lop. Vernon Corder, Leslie Walter. Lafayette Cowden, Florence Miller Boone Craig, Charles Henry. Callaway Craighead, William Spencer. Callaway Cravens, Oliver. Jasper Craven, Samuel Francis. Clay Creasey, Charles Roger. Lafayette Crews, Curtis. Boone Crittenden, William Emory. Monroe Crittenden, William Jackson. Cole  "L., M., B., Ph., D., M., Bk. E., M., L., B., C., M., L., C., Ly., B. E., M., L., Ph., M., L., C., Ly., B.  "E., M., L., Ph., M. L., C., Ly., B.  "E., M., D., M., L., M., C., E. Law. County. M. L., Ph., M. L., C., Ly., B.  "E., M., Dh., M. L., C., Ly., B.  "E., M., Bk. "E., M., Bk. "E., M., E., D., M., L., M., C., E.  "E., M., Bk. "E., M., E., D., M., L., M., C.  "E., M., Bk. "E., M., M., L., Bk. "E., M., Bk. "E., M., Bk. "E., M., Bk. "E., M., Bk. "			"	
Chandler, Laura Katie			"	
Chinn, James Peddicord. Lafayette Chipps, James Wm			44	
Chipps, James Wm				
Christie, Robt, James Lewis Clark, Louis Vaughn Montana Clark, Henry Whitney Dent Clary, Joseph Monroe Illinois Law, M., L., Ph., L., M., C., E. Clary, Joseph Monroe Illinois Law, Clendenin, Wm. Wallace Audrain Clendenin, Ida May " County. M. L., Ph., C., B., D., M., Ly. Clendenin, Ida May " County. M. L., Ph., C., B., D., M., Ly. Coffey, Alfred Wm Platte Coleman, Nannie Sterne Boone Conley, Sanford Francis " Conley, Sanford Francis " Coons, Wm. Edgar Marion Corder, Leslie Walter Lafayette Covden, Florence Miller Boone Craig, Charles Henry Callaway Craighead, William Spencer Callaway Cravens, Oliver Jasper Craven, Samuel Francis Clay Creasey, Charles Roger Lafayette Crews, Curtis Boone Crister, William Emory Monroe Crittenden, William Jackson Cole  "E., L., Ph., M. L., C., Ly., B. County. M. L., Ph., L., M. L., C., E. County. M. L., Ph., L., M. L., Ph., C., E. County. M. L., Ph., C., B., D., M. County. M. L., Ph., C., E. C., Ph., B., D., M. C., Ph., L., M. L., M. L., M. L. County. M. L., Ph., C., E. C., Ph., B., D., M. C., Ph., L., M., L., M. County. M. L., Ph., C., E. C., Ph., B., D., M. C., Ph., L., M. L., M., C. C., Ph., B., D., M. C., Ph., L., M. L., M. L., M. County. M. L., Ph., C., E. C., Ph., B., D., M. C., Ph., L., M., L., M. L., M. County. M. L., Ph., C., D., M. C., Ph., L., M., L., M. C., Ph., L., M., L., M. County. M. L., Ph., C., D., M. C., P				
Clark, Louis Vaughn Montana  Clark, Henry Whitney Dent  Clary, Joseph Monroe Illinois Law.  Clendenin, Wm. Wallace Audrain  Clendenin, Ida May "  Complex, Alfred Wm Platte  Coleman, Nannie Sterne Boone  Conley, Sanford Francis "  Cons, Wm. Edgar Marion  Corder, Leslie Walter Lafayette  Cowden, Florence Miller Boone  Craig, Charles Henry Callaway  Cravens, Oliver Jasper  Craven, Samuel Francis Clay  Creasey, Charles Roger Lafayette  Crews, Curtis Boone  Crister, William Emory Monroe  Crittenden, William Jackson Cole  County. M. L., Ph., L., M., C., E.  county. M. L., Ph., L., M., L., W.  Law.  county. M. L., Ph., C., E.  county. M. L., Ph., C., B., D., M.  county. M. L., Ph., C., B., D., M.  county. M. L., M. L., E.  county. M. L., M. L., E.  county. M. L., M. L., E.  county. M. L., M. L., M., C.  county. M. L., M. L., M., C.  county. M. L., M. L., M., C.  county. M. L., M. L., E.  county. M. L., M. L., M., C.  county. M. L., M. L., M., C.  condense County. M. L., M. L., M. L., M. L., M.  condense County. M. L., M. L., M.  condense County. M. L., M. L., M.  condense County. M. L.,				
Clark, Henry Whitney Dent Clary, Joseph Monroe Illinois Law. Clendenin, Wm. Wallace Audrain Clendenin, Ida May " "C., Ph., B., D., Sur., M. L., M. Coffey, Alfred Wm Platte Coleman, Nannie Sterne Boone Conley, Sanford Francis. " "E., D., L., M., G., Bk. Coons, Wm. Edgar Marion Corkins, Lop Vernon Corder, Leslie Walter Lafayette Cowden, Florence Miller Boone Craig, Charles Henry Callaway Crayens, Oliver Jasper Craven, Samuel Francis Clay Creasey, Charles Roger Lafayette Crews, Curtis Boone Crister, William Emory Monroe Crittenden, William Jackson Cole  county. M. L., Ph., L., M., C., E.  Law. County. M. L., Ph., C., B., D., M.  "C., Ph., B., D., M. L., Ms. "C., Ph., B., D., M. "C., Ph., L., Ph., C., B., D., M. "E., D., M., L., Ms., E., L., B. "E., L., B., M., Anat., Bk., D. "E., L., B., M., Anat., Bk., D. "E., B., M., Anat., Bk., D. "M. L., Ms., E., L., B.				
Clary, Joseph Monroe. Illinois. Law.  Clendenin, Wm. Wallace. Audrain county. M. L., Ph., C., B., D., M., Ly.  Clendenin, Ida May. " ".C., Ph., B., D., Sur., M. L., M.  Coffey, Alfred Wm. Platte ".C., E., Bk.  Coleman, Nannie Sterne. Boone ".L., M., G., B., D.  Conley, Sanford Francis. " ".E., D., L., M., G., Bk.  Coons, Wm. Edgar. Marion ".Ms. E., D., G., L., M. L., Ly., Bk., G. & M.  Corkins, Lop. Vernon ".E., M., L., M. L.  Corder, Leslie Walter. Lafayette ".M., M. L., Ph., D.; B., E., Bk.  Cowden, Florence Miller Boone ".E., N., D., B.  Craig, Charles Henry. Callaway ".E., L., Ph., M., C.  Cravens, Oliver. Jasper ".L., E.  Craven, Samuel Francis. Clay ".L., E.  Creasey, Charles Roger. Lafayette ".E., M., Bk.  Crews, Curtis. Boone ".E., L., B., D., M.  Crister, William Emory. Monroe ".E., L., B., M., Anat., Bk., D.  Crittenden, William Jackson. Cole ".M. L., Ms., E., L., B.				
Clendenin, Wm. Wallace Audrain Clendenin, Ida May " "C., Ph., B., D., M., Ly. Coffey, Alfred Wm Platte Coleman, Nannie Sterne Boone Conley, Sanford Francis " "L., M., G., B., D. Conley, Sanford Francis " "E., D., L., M., G., Bk. Coons, Wm. Edgar Marion "Ms., E., D., G., L., M. L., Ly., Bk., G. & M.  Corkins, Lop Vernon Corder, Leslie Walter Lafayette Cowden, Florence Miller Boone Craig, Charles Henry Callaway Craighead, William Spencer. Callaway Cravens, Oliver Jasper Craven, Samuel Francis Clay Creasey, Charles Roger Lafayette Crews, Curtis Boone Crister, William Emory Monroe Crittenden, William Jackson Cole "M. L., Ph., C., B., D., M. "County M. L., Ph., C., B., D., M. "County M. L., Ph., C., B., D., M. "C., Ph., B., D., M. "C., E., Bk. "Ms., E., D., C., L., M. L., Ly., Bk., C., E., Bk. "Ms., L., Ph., D., B. "E., M., M. L., Ph., D., M. "E., L., Ph., M., C. "E., L., B., D., M. "E., M., Bk. "E., L., B., D., M. "E., L., B., M., Anat., Bk., D. "Ms. L., Ms., E., L., B.				
Clendenin, Ida May " C., Ph., B., D., Sur., M. L., M.  Coffey, Alfred Wm Platte  Coleman, Nannie Sterne Boone  Cenley, Sanford Francis " E., D., L., M., G., Bk.  Coons, Wm. Edgar Marion  Corkins, Lop Vernon  Corder, Leslie Walter Lafayette  Cowden, Florence Miller Boone  Craig, Charles Henry Callaway  Crayens, Oliver Jasper  Craven, Samuel Francis Clay  Creasey, Charles Roger Lafayette  Crews, Curtis Boone  Crister, William Emory Monroe  Crittenden, William Jackson Cole  " C., Ph., B., D., Sur., M. L., M.  " C., E., Bk.  " L., M., G., B., D.  " E., D., L., M., G., Bk.  " E., D., G., L., M. L., Ly.,  Bk., G. & M.  " E., M., L., M. L.  " E., M., L., Ph., D., B.  " E., L., Ph., M., C.  " E., M., Bk.  " E., M., Bk.  " E., L., B., D., M.  " E., B., M., Anat., Bk., D.  " M. L., Ms., E., L., B.				
Coffey, Alfred Wm		uuram coi		
Coleman, Nannie Sterne Boone Conley, Sanford Francis " Coons, Wm. Edgar Marion  Corkins, Lop Vernon Corder, Leslie Walter Lafayette Cowden, Florence Miller Boone Craig, Charles Henry Callaway Crayens, Oliver Jasper Craven, Samuel Francis Clay Creasey, Charles Roger Lafayette Crews, Curtis Boone Crister, William Emory Monroe Crittenden, William Jackson Cole  " .L., M., G., B., DE., D., L., M., L., M., L., Ly., Bk., G., & ME., D., L., M. L., Ly., Bk., G., & ME., M., M. L., Ph., D., BE., N., D., BE., L., Ph., M., CE., L., Ph., M., CE., M., BkE., L., B., D., ME., L., B., D., ME., L., B., D., ME., L., B., M., Anat., Bk., DE., L., B., M., Anat., Bk., DE., L., B., M., L., Ms., E., L., B.		01.44.		
Conley, Sanford Francis.  Coons, Wm. Edgar.  Corkins, Lop.  Corder, Leslie Walter.  Cowden, Florence Miller  Craig, Charles Henry  Cravens, Oliver.  Craven, Samuel Francis  Clay  Creasey, Charles Roger  Clay  Creasey, Charles Roger  Cray  Cressey, Charles Roger  Cray  Cressey, Curtis  Boone  Crister, William Emory  Monroe  Marion  "E., D., L., M., G., Bk.  "E., D., L., M. L., Ly.,  Bk., G. & M.  "E., M., L., M. L.  "M., M. L., Ph., D., B.  "E., N., D., B.  "E., L., Ph., M., C.  "E., L., Ph., M., C.  "E., M., Bk.  "E., L., B., D., M.  "E., L., B., D., M.  "E., L., B., D., M.  Crister, William Emory  Monroe  "E., L., B., D., M.  "E., L., B., D., M.  "E., L., B., M., Anat., Bk., D.  "M. L., Ms., E., L., B.				
Coons, Wm. Edgar         Marion         " Ms., E., D., G., L., M. L., Ly., Bk., G. & M.           Corkins, Lop         Vernon         " E., M., L., M. L.           Corder, Leslie Walter         Lafayette         " M., M. L., Ph., D.; B., E., Bk.           Cowden, Florence Miller         Boone         " E., N., D., B.           Craig, Charles Henry         Callaway         " Med.           Crayens, Oliver         Jasper         " L., Ph., M., C.           Craven, Samuel Francis         Clay         " E., L., Ph., M., C.           Creasey, Charles Roger         Lafayette         " E., M., Bk.           Crews, Curtis         Boone         " E., L., B., D., M.            Crister, William Emory         Monroe         " E., B., M., Anat., Bk., D.           Crittenden, William Jackson         Cole         " M. L., Ms., E., L., B.				
Bk., G. & M.  Corkins, Lop				
Corkins, Lop	Coons, wm. Edgar	larion	••	
Corder, Leslie Walter Lafayette Cowden, Florence Miller Boone Craig, Charles Henry Callaway Craighead, William Spencer Callaway Cravens, Oliver Jasper Craven, Samuel Francis Clay Creasey, Charles Roger Lafayette Crews, Curtis Boone Crisler, William Emory Monroe Crittenden, William Jackson Cole  ".M., M. L., Ph., D., B., E., Bk. ".E., N., D., B. ".E., L., Ph., M., C. ".E., L., Ph., M., C. ".E., M., Bk. ".E., M., Bk. ".E., L., B., D., M. ".E., B., M., Anat., Bk., D. ".E., B., M., Anat., Bk., D. ".E., B., M., As, E., L., B.	~	-	,,	
Cowden, Florence Miller Boone Craig, Charles Henry Callaway Craighead, William Spencer Callaway Cravens, Oliver Jasper Craven, Samuel Francis Clay Creasey, Charles Roger Lafayette Crews, Curtis Boone Crisler, William Emory Monroe Crittenden, William Jackson Cole  "E., N., D., B MedE., L., Ph., M., CE., L., E E., L., E E., M., Bk E., L., B., D., M E., B., M., Anat., Bk., D M. L., Ms., E., L., B.				
Craighead, William Spencer Callaway Cravens, Oliver Jasper Craven, Samuel Francis Clay Creasey, Charles Roger Lafayette Crews, Curtis Boone Crisler, William Emory Monroe Crittenden, William Jackson Cole  "M. L., Ms., E., L., B. "Med. "E., L., Ph., M., C. "E., L., Ph., M., C. "E., L., E. "E., M., Bk. "E., L., B., D., M. "E., L., B., D., M. "E., B., M., Anat., Bk., D. "M. L., Ms., E., L., B.				
Craighead, William SpencerCallaway Cravens, OliverJasper Craven, Samuel FrancisClay Creasey, Charles RogerLafayette Crews, CurtisBoone Crisler, William EmoryMonroe Crittenden, William JacksonCole  ".E., L., Ph., M., C. ".L., E. ".E., M., Bk. ".E., L., B., D., M. ".E., L., B., M., Anat., Bk., D. ".E., B., M., Anat., Bk., D. ".M. L., Ms., E., L., B.	Cowden, Florence Miller	Boone		
Cravens, Oliver	Craig, Charles Henry	lallaway	,,	Med.
Craven, Samuel FrancisClay  Creasey, Charles RogerLafayette  Crews, CurtisBoone  Crisler, William EmoryMonroe  Crittenden, William JacksonCole  ".E., M., Bk.  ".E., L., B., D., M.  ".E., B., M., Anat., Bk., D.  ".M. L., Ms., E., L., B.			"	E., L., Ph., M., C.
Creasey, Charles RogerLafayette Crews, CurtisBoone Crisler, William EmoryMonroe Crittenden, William JacksonCole ".E., M., Bk. ".E., L., B., D., M. ".E., B., M., Anat., Bk., D. ".M. L., Ms., E., L., B.	Cravens, OliverJ	asper	"	L., E.
Crews, Curtis	Craven, Samuel Francis	lay	"	••
Crister, William EmoryMonroe ".E., B., M., Anat., Bk., D. Crittenden, William JacksonCole ".M. L., Ms., E., L., B.	Creasey, Charles RogerL	afayette	"	
Crittenden, William JacksonCole "M. L., Ms., E., L., B.	Crews, Curtis	oone	"	E., L., B., D., M.
orrection, without vacasonout	Crisler, William Emory	Ionroe	"	E., B., M., Anat., Bk., D.
	Crittenden, William JacksonC	ole	"	M. L., Ms., E., L., B.
	Crouch, Mary LaviniaB	oone	"	E., M., Anat., D.; M., Bk., C.

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Cunningham, Edw'd Finneg			
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Daugherty, John Fielding.	Franklin	"	L., M., Ph., M. L., C.
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DeBerry, C. Allie	$\dots$ Clay	"	M., Bk., E., N., B.
Defoe, Luther Marion	Moniteau	"	L., M. L., Ph., M., C.
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Denny, Nannie		"	L., M., L. B., Anat., M.
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			Bk., G. & M.
Dick, James Thaddeus	$\dots$ Carroll	"	E., L., B., M., D., Ph., Bk., M.
			L., C.
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Dinwiddie, Lulu		"	E., N., C.
Dodson, William Rufus		"	E., M. C.
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Dooley, Richard Maurice		"	L., E., Ph., M., Ms.
Dorsett, Julia Somerville		"	$E., L_{\rightarrow}, M., L. M., A., B., Bk.$
Dorsett, Ellen Winchester.		"	E., M., L. A., Bk., Ms. E., D., B., Bk., Anat.
Doss, Thomas  Downing, Robert Everard.		"	L., Ph., M. L., B., Anat., M.,
			C., E.
Dunn, Bascom Henry		"	
Duncan, William Courtland			L., E., Ms., M., M. L.
Edwards, Noah Webster		count	yBk.
Ellis, Jefferson Davis		"	E.,Ly.,Ph.,B.,D.,M.,L.M.
Ellis, Giles Abram		"	E., M., Ph., B., C., A., D.
Elliott, Henry Walter		"	L., M., C.
Elliott, Aggie May		"	E., B., D., Anat.
Ely, Ernst Decatur		"	E., M.L., L., M., B., D., Bk.
Emberson, Richard Huff		. "	M. L., Ph., M., N., Bk., Eng., D.
Emison, Minard Johnson		"	E., M. L., M., Ph., D.
Erwin, John William	_	"	L., Ph., M., B., D., Bk. E., D., L., B., M., Bk.
Evans, Paul		"	L., B., Ph., E. D.
Evans, John Morgan			
Ewing, James Charles			
Emmg, vames charles	cana nay	Journe	J
Farris, Charles Breckenridg	ePemiscot	"	L., E., M. L., M., C., B.
			L., E., S., G., M. L., M., C.

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Fisher, Samuel Blair		·E., M., Ph., L., G., C., D., Ly.
Frazier, JosephR	andolph '	'E., B., L., D., Ph., M., N., C.,
		Bk.
Froley, John WmLa	wrence '	·M., C.
Frye, Gam HannaM	onroe '	·E., D., B., L., M., Bk.
Frye, Maggie Belle	"	·E., B., D.
Frye, Mary Anne		, D., D.
Fulbright, Jay Alfred	nariton '	'E., L., M. L., B., D., M.
		345
Gaines, Edward NelsonIl		
Garrett, James EdwinH		tyPh., C., Sur., Ly., Ms., M.
Geary, ClaraNo		
Gentry, Lucy WyattBo		tyC., Ms.,S.,E.,A.,N., G. & M.
Gentry, William Richard	"	, 2., 3., 22., 2., 2
George, William BrackPl		,,
George, William FrancisCa		, 11., 11., D., D., 11.
Gerling, Henry JosephBo		, D., D., III., M. D.
Gerling, Frank Aloysius		, O., 17., 11y ., 1111au., 111., 15., 151.
Gerig, William	"	Ms., C., Sur., Ly., M., Bk., G.
Gibson, John CrawfordV	ernon "	
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Gillaspy, Mary Jude		
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Gregg, Isabella ABo	one coun	tyE., M.; D.
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Gremp, William Adelbert Bo	oone "	L. Ph., D., B., E., Bk., M.
Gremp, Christian Columbus	"	L., G., Ph., E., C.
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Grills, Charles LycurgusMe		,,,
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Haley, John Lockhart	" "	
Hall, Francis PrestonLe	wis "	
Hanley, George WashingtonPe		
Hansmann, Carl AugustusLi		
Hardesty, William PrestonLe		
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Harris, Thomas BenjaminSa		
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Hastings, Helena Grace	.Boone	count	y M., L., D., E., B., Bk.
Hatton, Stewart Price		44	L., M., N., Ph., G., M. L.
Hatton, Wesley Moses	. "	66	E., L., Ph., D., B., M.
Hatton, Robert Edwin	. "	44	E., L., B., D., M.
Hatton, Anna Lee		44	E., N., Ph., M.
Haydon, William		46	L., M. L., Ph., E., M., C.
Haydon, Forrest	. "	"	. E., L., D., Ph., B., Bk.
Hayes, Emma Priscilla		44	M., E., L.
Hays, John Clay		44	L., M. L., Ph., B., D.
Haynes, Thomas Nathan			Law.
Hendricks, Solomon		"	M. L., C., B., L., Ly., M., D.
Hendrick, John Jackson		"	L., M. L., Ph., M., B.
Hickman, Mary	•	44	.L., M. L., M., E.
Hinton, Edward		44	L., E., B., D., M., M. L.
Hockenberry, Homer		"	A., B., E., Ph., M. L., Bk.
Hodge, Robert Jewell		44	
roago, robott bewell	.Doone		E., N., Ph., B., Anat., D., M., Ly., C.
Hodkins, Charles Edward	St Clair	"	
Hoffman, Minnie Alice		"	L., M., M. L., Ph., D., C.
Holmes, William Stonewall		"	Ph., M. L., C., Ms.
		"	E., D., B., L., M., Ph.
Horine, George Lunceford		"	Law.
Horne, Clara Belle	•	"	E., L., B., M., Anat., N.
Horne, Letha Ellis		"	E., L., Anat., B., M., Bk.
Horton, John Calvin			E., C., M:
Houston, Henry Mortimer		"	Law.
Hubbell, John Morton		"	M. L., L., M.
Hughes, Will			
Humburg, Andrew Phillip			
Hume, William Allen		"	E., B., D., M. L., Bk.
Humphrey, James Harvey		"	M. L., L., Ph.
Hunt, Daniel Washington	.Cooper	44	L., M. L., D., Anat., B., M.,
			C., N.
Hurd, Thomas Franklin		"	Law, L.
Hurt, William Bruton		"	E., M. L., L., M., B.
Hyde, William Samuel	.Chariton	"	E., B., D., Ph., M., Bk.
Jaeger, John Adam	Piko	"	C., Ph., M.L., D., Sur., M., Ly.
			Sur., D., M. L., M., Ph., C.
Jenkins, John Howell			yE., M. L., Ph., M., Bk., C., B.
		"	
Jenkins, Charles Singleton			E., M., Ph., D., Bk., B.
Jesse, James William			
Jesse, Frank Russell		count,	
Johnson, Robin Marshall		"	Ms., G. & M., Sur., E., D., Ly.
Jones, Lewis Franklin		"	Law.
Jones, James Sylvester		••	E., M., B., M. L., D., Bk.
Kaster, Earle T	.Jackson	"	L., E., Ph., B., D.
Kaster, Eugene L			M. L., G. & M., L., Ms., D.
Kathan, Rufus Spencer		44	E., L., B., M., D., N., Bk.
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Kinder, Edward Brown		44	E., L., M. L., Ph., M., C.
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King, James Hyde		"	B., Ph., D., M. L., E., L., M.
Kistler, Calvin Hendricks		44	L., Ph., E., G., M., C.
Knox, William Frederic		46	L., M. L., M., E.
Koch, Louis		44	E., Bk., M., A.
Hour, Bours	waren		, 171., 121., 121.
Lamotte, Willie May	Randolph	"	C., G. & M., M. L.
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Lear, Peace	"	"	M. L., M., Ph., C. D., Ly.
Lewis, Lucius Robert	Tognor	"	G., L., Ph., B., M. L., E., D., C.,
newis, nuclus Robert	asper		M.
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Lewis, Samuel Taylor	Jackson		M. L., Anat., L., G. & M., Ph.,
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*	,,	.,	Bk.
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Lewright, John Oscar	"	"	E., D., Ph., C., M. L., D., L.,
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Lillard, Sissie Elizabeth		"	E., M., L., C., Bk.
Lillard, Artie		"	E., M., L.
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Lonsdale, May Hurt	"	"	E., N., G. & M., M. L., B.,
			Bk.
Love, William Winn	Macon	"	L., G., G. & M., S., E., M.,
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		"	Med.
Mathis, jr., Francis HenryI Maupin, James LawrenceI		"	L., E., M., Bk., D.
Laupin, vames LawrenceI	Doone		B., L., G., Ph., E., Anat., M.
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McComas, Arthur Rochford	Boone	".L., M. L., Ph., M., E., Bk.
McCully, Thomas Marshall	Shelby	" Med.
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McDonald, Winthrop Gaines.	Marion	"Law.
McElvaine, Jason Neeley	Johnson	"Law.
McEwen, Fred. Wm	Shelby	"E., M., B., Bk.
McGregor, Joe	Pulaski	"Law.
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Means, William Foster	DeKalb	"Ms., M. L., G. & M., B., N., Bk., L.
Merrell, William Tell	Macon	".E., N., M., G. & M., B., Ph.,
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Millard, Thomas Frank	Phelps cou	untyE., M., L.
Miller, William Henry	$\dots$ Johnson	" Med.
Mitchell, William Warren	Shelby	" Ms., Sur., D., G. & M., E., M.
		Ly.
Mitchell, Anna	Boone	"E., B., M., D.
Mitchell, Cliff Newlin		
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Moore, Douglas A		"
Moore, Daniel Clement		" *E., B., L., D., M., C., G.
Moore, William Edgar		" E., G. & M., D., L., M., Bk.
Morris, Robert E		"M. L., B., L., D., Ph., C.
		E., M., Ph., B., D., Bk.
Mosely, Charles Guerrant	Lincoln co	ountyMed.
Murrell, Leonard Douglass		"M., E., D., B., L., Bk.
Murrell, William Blaine		"M., E., D., B., L., Bk.
Murphy, George Washington		"C., G., L., D., S., N., Bk.
Musick, Virgil McKey	Moniteau	"E., B., L., D., M., Bk.
Neville, James Tilford	Greene	" Law.
*O'Mahoney, Katie Vronica.		"E., N., M.
O'Mahoney, Clarence		untyL., G., Ph., B., D., M., M. L.
O'Rear, James Irvin		
Owens, Sidney Maples	ratte cot	ountyE., A., B., Ph., Bk.
Page. John Colcord	Jackson	"D., M., Ph., E., G., C., Bk.
Patchell, Carrie	St. Louis	"E., L., Ph., M. L., B.
Patton, Edward Winslow	Ray	"E., M., G. & M., N., M. L., B.
Payne, Samuel Albert	Dade	"Law.

<sup>\*</sup>Deceased.

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	M., L., Anat., M. L.,
E., G.	
Pennington, George RileyLincoln "L., D., M	. L., B., M., Anat., G.
& M.,	C., E.
Peters, Fredus EugeneShelby "E., Ph., L	, G., N., D.
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	. L., L., N., C., B., D.
Pigott, John ChristianCooper "L., M. L.,	, M., E.
Pigott, Harry Hale " ".E., L., M	., M. L.
	, D., M., G. & M., Bk.
	., L., M., G., Bk.
Prewitt, Robert C	
Prigmore, James Thomas Lafayette countyM., L., G.	& M., N., D., Anat.
Prigmore, Robert WarrenSaline "L., C., Ph	n., M.
Purdy, OtisBoone "Ly., Ph.,	B., C., Med.
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Rankin, Agnes StewartBoone ".M., N., B	., Ph., E., C., D., Bk.
Reed, Thomas CIllinoisLaw.	., 11., 11., 0., 11., 11.
	, Ph., B., D., M. L.
	N., M., Ph., L., Bk.
	, D., B., Bk.
Riggs, SilasDeKalb ".L., G., E.	
Riggs, Zadok Thompkins " ".L., M. L.,	
	, E., Anat., G. & M.,
C., Ly	
· · · · · · · · · · · · · · · · · · ·	h., B., M., G.
Robb, WilliamC. Girardeau "Law.	,,,
	Ms., Bk., Ly., L., D.
	., B., M., Bk.
Rogers, Robert Francis " "M., E., N	
그는 그리 어느 그는 그리고 있다면 그리고 있다면 그리고 있다면 하는데 그리고 있다면 그리고 있다면 되었다.	& M., Sur., E., D.,
	., Bk., Ly.
	h., D., B., Bk., C.
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Royall, William MurrayBoone ".E., M., B	B., L., D.
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L., Ly	
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•	
Sanders, Edward GoseMonroe ".B., Ph., I	, Anat., G. & M.
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~	k., M. L., D.
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Sheets, Meritt	Wayne	"Law.
Shelton, Mitchell Cross		".L. G., Ph., B., D., C., M.
Shipley, Dora Ella	. Boone	" E., D., G. & M., B., Anat.
Shirley, Robert Edward		"G., L., C., M.
Short, Claborne Walla		"E., M., L., B., D.
Shouse, William Shelba	"	"E., L., B., D., M., G., Bk.
Shull, Samuel S	Buchanan	" Law.
Simcoe, Benjamin Franklin	. Callaway	"N., C., E.
Silver, John	. Boone	".L., M. L., Ph., M., Bk., D.
Sisk, Robert Edgar	Audrain	"E., D., L., B., M., C., Bk.
Skinker, Cornelius Hite	Virginia	
Slaughter, Ada Florence		ountyM., L. M., Ph.
Smart, Grant	Cass	"E., G. & M., B., M.L. M., D.
Smith, Jas. Allen	.Jackson	"L., Ly.
Smith, Lorinda W		"L., E., N., Bk., C.
Smith, Edward Everett	"	".L., N., Ph., G., D., M., C.
Smith, Charles William	Callaway	".L., D., E., G.
Smith, Henry McPike	Ralls	"Ph., C., Ms., L., D.
Smith, George Penn		" Med., Ph.
Smith, William Noland Berkel	ey ''	" Eng., M. L., Ph., D.
Smith, Henry Dunman		"L., M. L., Anat., G. & M., G.
Smith, Lizzie	. Boone	"M. L., Ph., L., M.
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Spotts, Edwin Robinson	. Howard	" $$ M.L.,L.,Ph.,E.,M.,C.,Bk.
Stephens, William Severn	. Cass	"E., M. L., M., D., G. & M.
Stephens, Peyton	. Boone	"N., E., M.
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Stowe, Frederick Joab	. Audrain	" C., M. L., Sur., M.
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Strawn, Leslie Maupin		" B., E., L., D., M., Bk.
Strop, Charles Franklin	Buchanan	"Law.
Stubblefield, James Scott		" E., L., Ph., D., B., C., M.
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		L., M. L., D., M., Anat., B., C.
Theilmann, Louis		ounty. Ms., Sur., G. & M., D., M., Bk., Ly.
Theilmann, Emil	. "	"L., E., M. L., Anat., G & M., M.,
		C., B.
Thomas, James McPherson		
Thomas, Peyton Lee		ounty. L., E., Anat., D., Bk., M., B.
Thomas, Charles Rainey		
Thompson, Clara Field		ountyL., E., D., M. L.
Thompson, Hattie Achilles	Livingston	" M., Ph., D., B., E.

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Thornton, William Edwin   Lafayette   Tincher, James William.   Callaway	Thomson, Robert Gurdon	.Saline cou	int	y. Anat., G., G. & M., L., M., D.,
Tincher, James William				M. L., B.
Tincher, James William	Thornton, William Edwin	.Lafayette	"	G., M., L., D., B.
Tipton, Sam. M			"	
Toder, Laura			"	M., L., Ph., M. L., E.
Toler, Laura			"	
Trimble, Susie Harris			"	
Truitt, William Henry         Callaway         " C., Ph., B., D., Anat., M.           Turner, William         Shelby         " E., G. & M., M.           Turner, Orville Hickman B.         " M. L., L., M., Bk., E.           Turley, Lee         St. Francois         " E., G. & M., M., Bk., E.           Turk, John Crawford         Lawrence         " Ms., G. & M., E., L., D., N.           Vanhorne, Susan McCutchen         Boone         " E., G. & M., M., Ms.           Vany, John Crawford         Lown         Ms., G. & M., E., L., D., N.           Vany, John Pemiston         Montgomery         " E., G. & M., M., Ms.           Vaughn, Frank Elmer         Greene         " Law, L.           Vinson, Augustus Grant         Holt         " L., B., P., D., M. L.           Wade, Andrew Fuller         Boone         " Law, L.           Walker, Robert         Gasconade         " L., Ph., M. L., C., D., Ly.           Walker, Robert         Gasconade         " L., Ph., M. L., C., D., Ly.           Walter, Bonn Jarte         Gasconade         " L., Ph., M. L., C., D., Ly.           Walter, Henry Jackson         Ralls         " L., Ph., B., Anat.           Weed, James Franklin         Audrain         " L., L., M., M., D., Ms.           Welstall, Frank Earl				
Turner, William			"	
Turner, Orville Hickman B. " " M. L., L., M., Bk., E. Turley, Lee St. Francois Turk, John Crawford Lawrence Vanhorne, Susan McCutchen. Boone Van Ness, Frank Pemiston Montgomery Vaughn, Frank Elmer Greene Vanson, Augustus Grant Holt " L., B., Ph., D., M. L. Wade, Andrew Fuller Boone " B., E., L., D., M., G. Walker, Thomas Anderson Lafayette " L., Ph., M. L., C., D., Ly. Walker, Robert Gasconade " Law. Walkup, John Henry Monroe " E., Ph., B., Anat. Weed, James Franklin Audrain " C., L., Ph., M., C., B., Bk. Weed, James Franklin Audrain " C., L., Ph., S., M. L. Welth, Napoleon Bonaparte Chariton " E., M. L., B., M., D., Ms. Westfall, Frank Earl Ralls " E., B., D., Bk. Westfall, Frank Earl Ralls " E., B., D., L., M. Wharton, Wm. Nelson Johnson " L., Law. Wharton, Jacob Franklin " Law, L. Wiebusch, Henry St. Louis city M., A., Ph., B., E. Wigginton, Eddie Boyd Pike county E., N., Ph., B., E. Wigginton, Eddie Boyd Pike county E., N., Ph., G. Williams, Walter Scott Johnson " G. & M., M. L., Eng., Ms., M. Wilkinson, John Walter Boone county E., B., Ph., D., M., L. Wilkinson, John Walter Boone " E., L., M., Ph., M. Wilkinson, Thomas Franklin " E., L., M., Ph., B. Wilson, James Jenkins Audrain " E., L., M., Ph., B. Wilson, James Jenkins Audrain " E., L., M., Ph., B. Wilson, James Jenkins Audrain " E., L., M., Ph., B. Wilson, James Jenkins Audrain " E., L., M., Ph., B. Wilson, James Jenkins Audrain " E., L., M., Ph., B. Wilson, James Jenkins Audrain " E., L., M., Ph., B. Wilson, James Jenkins Audrain " E., L., M., Ph., B. Wilson, James Jenkins Audrain " E., L., M., Ph., B. Wilson, James Jenkins Audrain " E., L., M., Ph., B. Wilson, James Jenkins Audrain " E., L., M., Ph., B. Wilson, James Jenkins Audrain " E., L., M., Ph., L., G., C., M. Youmans, Frederick William " E., C., G., S., M., M. L. Zarn, Richard Charles Pl			"	
Turley, Lee         St. Francois         " E., G. & M., M., B., Anat., D., M.L.           Turk, John Crawford         Lawrence         " Ms., G. & M., E., L., D., N.           Vanhorne, Susan McCutchen. Boone         " E., L., G. & M., M., Ms.           Van Ness, Frank Pemiston         Montgomery         " E., G. & M., L., Anat.           Vaughn, Frank Elmer         Greene         " Law, L.           Vinson, Augustus Grant         Holt         " Law, L.           Wade, Andrew Fuller         Boone         " La, Ph., D., M. L.           Walker, Thomas Anderson         Lafayette         " L., Ph., M. L., C., D., Ly.           Walker, Robert         Gasconade         " Law, L.           Walter, Henry Jackson         Ralls         " L., Ph., B., Anat.           Weters, Henry Jackson         Ralls         " E., Ph., B., Anat.           Weet, Napoleon Bonaparte         Chariton         " E., M., C., B., Bk.           Weeld, Napoleon Bonaparte         Chariton         " E., M., E., M., D., Ms.           Welsh, Harry Taylor         Pike         " E., M., B., D., Bk.           Westfall, Frank Earl         Ralls         " E., B., D., L., M.           Wharton, Jacob Franklin         " E., B., D., L., M.           White, Joseph Tatum         Monroe         " E., L., M., Ph., B., E.			44	
Turk, John Crawford         Lawrence         " Ms., G. & M., E., L., D., N.           Vannore, Susan McCutchen         Boone         " E., L., G. & M., M.         Ms.           Van Ness, Frank Pemiston         Montgomery         " E., G. & M., L., Anat.           Vaughn, Frank Elmer         Greene         " Law, L.           Vinson, Augustus Grant         Holt         " Law, L.           Walker, Andrew Fuller         Boone         " Law, L.           Walker, Thomas Anderson         Lafayette         " Law, L.           Walker, Robert         Gasconade         " Law.           Walker, Bobert         Gasconade         " Law.           Walker, Bobert         Monroe         " Ph., M. L., C., D., Ly.           Walker, Bobert         Monroe         " E., Ph., B., Anat.           Walker, Bobert         Monroe         " E., Dh., M. C., B., Bk.           Walker, Bobert         Monroe         " E., M., D., Ms.           Walker, Bobert         Audrain         " Ph., B., Anat.           Walker, Bobert         Pike         " Law.           Weed, James Franklin         Audrain         " Law. L., Dh., M.           Wells, Napoleon Bonaparte         Chariton         " L., Ph., B., M. L. <td< td=""><td></td><td></td><td>"</td><td></td></td<>			"	
Vanhorne, Susan McCutchen.         Boone         " . E., L., G. & M., M., Ms.           Van Ness, Frank Pemiston.         Montgomery         " . Law, L.           Vaughn, Frank Elmer.         Greene         " . Law, L.           Vinson, Augustus Grant.         Holt         " . L. aw, L.           Walker, Andrew Fuller.         Boone         " . B., E., L., D., M., G.           Walker, Thomas Anderson.         Lafayette         " . L., Ph., M. L., C., D., Ly.           Walker, Robert.         Gasconade         " . Law.           Walker, Bohrt.         Monroe         " . E., Ph., B., Anat.           Waters, Henry Jackson         Ralls         " . E., Ph., B., Anat.           Weed, James Franklin         Audrain         " . C., L., Ph., S., M. L.           Welds, Napoleon Bonaparte         Chariton         " . E., M D., Bs.           Wells, Harry Taylor         Pike         " . E., M D., Bs.           Westfall, Frank Earl         Ralls         " . E., M D., Bs.           Wharton, Jacob Franklin         " . Law. L.         Lu. L. Law.           Wilginton, Eddie Boyd         Pike county         E., J., M., Ph., B., E.           Wilginton, Eddie Boyd         Pike county         E., L., M., Ph., G.           Williams, Harrison Ralph         C. Girardeau         " . G. & M., L.,			"	
Van Ness, Frank Pemiston         Montgomery         ". E., G. & M., L., Anat.           Vaughn, Frank Elmer.         Greene         ". Law, L.           Vinson, Augustus Grant         Holt         ". L., B., Ph., D., M. L.           Wadke, Andrew Fuller         Boone         ". B., E., L., D., M., G.           Walker, Thomas Anderson         Lafayette         ". L., Ph., M. L., C., D., Ly.           Walker, Robert         Gasconade         ". Law.           Walker, John Henry         Monroe         ". E., Ph., B., Anat.           Waters, Henry Jackson         Ralls         ". E., L., Ph., M., C., B., Bk.           Weed, James Franklin         Audrain         ". C., L., Ph., S., M. L.           Welch, Napoleon Bonaparte         Chariton         ". E., M., B., D., Bk.           Welch, Napoleon Bonaparte         Chariton         ". E., M., B., D., Bk.           Westfall, Frank Earl         Ralls         ". E., M., B., D., Bk.           Westfall, Frank Earl         Ralls         ". E., M., B., D., Bk.           Wharton, Jacob Franklin         ". L., Law           Wilst, Saph Tatum         Monroe         ". E., D., M., B., Anat., C., Bk.           Wilginton, Eddie Boyd         Pike county         E., L., M., Ph., B., E.           Williams, Walter Scott         Johnson         ". Ms., G. & M., P			"	
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Vinson, Augustus Grant. Holt  Wade, Andrew Fuller. Boone  Walker, Thomas Anderson. Lafayette  Walker, Robert. Gasconade  Walker, Robert. Monroe  Waters, Henry Jackson. Ralls  Weed, James Franklin. Audrain  Welch, Napoleon Bonaparte. Chariton  Wells, Harry Taylor. Pike  Westfall, Frank Earl. Ralls  Wharton, Wm. Nelson. Johnson  White, Joseph Tatum. Monroe  Wiebusch, Henry. St. Louis city. M., A., Ph., B., E.  Wildox, Frank Edward. Texas. Ms., G. & M., Ph., S., E.  Williams, Walter Scott. Johnson  Wilkinson, John Walter. Boone  Wilkinson, John Walter. Boone  Wilkinson, Thomas. Franklin  Woodruff, Anson Clarence. St. Louis  Wright, Firmin Bradley. Jackson  Young, Charles Alexander. St. Louis county. Ms., C,, G., S., M., M. L.  Zarn, Richard Charles. Platte  "L., Ph., M. L., C., D., M., G.  "L., Ph., M. L., C., D., Ly.  "L., Ph., M. L., C., D., M., S.  "L., Ly., M. L., Ph., M.  "L., Ph., M. L., Ph., M.  "L., Ph., L., C., O., M.  "L., Ph., L., C., C., M.  "Younans, Frederick William. """  "L., Ph., L., C., O., M., M. L.  "L., Ph., L., C., C., M.  "Younans, Frederick William. """  "L., Ph., L., C., O., M., M. L.  "L., Ph., L., C., O., M.  "L.,			"	
Wade, Andrew Fuller         Boone         " . L., Ph., M. L., C., D., Ly.           Walker, Thomas Anderson         Lafayette         " . L., Ph., M. L., C., D., Ly.           Walkup, John Henry         Monroe         " . E., Ph., B., Anat.           Waters, Henry Jackson         Ralls         " . E., L., Ph., M., C., B., Bk.           Weed, James Franklin         Audrain         " . C., L., Ph., S., M. L.           Welch, Napoleon Bonaparte         Chariton         " . E., M. B., D., Bk.           Welsfall, Frank Earl         Ralls         " . E., M. B., D., Bk.           Westfall, Frank Earl         Ralls         " . E., M., B., D., Bk.           Westfall, Frank Earl         Ralls         " . L., Law.           Wharton, Jacob Franklin         " . L., Law.           Wharton, Jacob Franklin         " . L., Law.           White, Joseph Tatum         Monroe         " . L., Law.           Wileousch, Henry         St. Louis city         M., A., Ph., B., Anat., C., Bk.           Wileous, Frank Edward         Texas         Ms., G. & M., Ph., S., E.           Williams, Walter Scott         Johnson         " . E., L., M., Ph., G.           Wilkerson, Benjamin Franklin         " . E., L., M., L., Ph., M.           Wilkinson, John Walter         Boone         " . E., L., M., L., Ph., M.				
Walker, Thomas Anderson. Lafayette Walker, Robert			"	
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Walkup, John Henry         Monroe         " . E., Ph., B., Anat.           Waters, Henry Jackson         Ralls         " . E., L., Ph., M., C., B., Bk.           Weed, James Franklin         Audrain         " . C., L., Ph., S., M. L.           Welch, Napoleon Bonaparte         Chariton         " . E., M. L., B., M., D., Ms.           Wells, Harry Taylor         Pike         " . E., M., B., D., Bk.           Westfall, Frank Earl         Ralls         " . E., M., B., D., L., M.           Wharton, Wm. Nelson         Johnson         " . L., Law.           Wharton, Jacob Franklin         " . Law, L.           White, Joseph Tatum         Monroe         " . E., N., Ph., B., Anat., C., Bk.           Wiebusch, Henry         St. Louis city         M., A., Ph., B., Anat., C., Bk.           Wiebusch, Henry         St. Louis city         M., A., Ph., B., Anat., C., Bk.           Wilginton, Eddie Boyd         Pike county         E., L., M., Ph., B., Anat., C., Bk.           Wilginton, Frank Edward         Texas         Ms., G. & M., Ph., S., E.           Wilhite, Albert Newton         Boone         county         E., L., M., Ph., S., E.           Williams, Harrison Ralph         C. Girardeau         L., Ph., C., G., M., E.           Wilkerson, Benjamin Franklin         " . E., L., M. L., Ph., M.           Wilkinson, John			"	
Waters, Henry Jackson			44	E., Ph., B., Anat.
Weed, James Franklin Audrain Welch, Napoleon Bonaparte Chariton Wells, Harry Taylor Pike Westfall, Frank Earl Ralls Wharton, Wm. Nelson Johnson Wharton, Jacob Franklin " L., Law. White, Joseph Tatum Monroe Wiebusch, Henry St. Louis city M., A., Ph., B., E. Wigginton, Eddie Boyd Pike county E., L., M., Ph., G. Wilcox, Frank Edward Texas Ms., G. & M., Ph., S., E. Wilhite, Albert Newton Boone Williams, Walter Scott Johnson Williams, Harrison Ralph C. Girardeau Wilkerson, Benjamin Franklin Clay Wilkinson, John Walter Boone Wilkinson, Thomas Franklin Willis, Sallie Bettle Boone Wilson, Lena " E., L., M., Ph., Bk. Wilson, Jameŝ Jenkins Audrain Wood, Henry Parker Hardin Woodruff, Anson Clarence St. Louis Wrounans, George Faust Arkansas M. L., Ph., L., G., C., M. Youmans, Frederick William " S., Ph., Ms., M.L., Sur, D., M., Ly. Younans, Frederick William " S., Ph., Ms., M.L., Sur, D., M., Ly. Young, Charles Alexander St. Louis county Ms., C., G., S., M., M. L. Zarn, Richard Charles Platte " Law. W. L., Ph., L., S., M. L. W. L., Ph., L., C. Young, Charles Alexander St. Louis county Ms., C., G., S., M., M. L. Zarn, Richard Charles Platte " M. L., Ph., E., M., B. Zeller, Frank Lindley Holt " Law.  C., L., M., L., Ph., L., S., M. L.  E., M., Bk.  E., M., L., Ph., L., C.  Young, Charles Alexander St. Louis county Ms., C., G., S., M., M. L.  Zarn, Richard Charles Platte " M. L., Ph., E., M., B.			"	
Welch, Napoleon Bonaparte Chariton Wells, Harry Taylor Pike Westfall, Frank Earl Ralls Westfall, Frank Earl Ralls Wharton, Wm. Nelson Johnson Wharton, Jacob Franklin "Law, L. White, Joseph Tatum Monroe Wiebusch, Henry St. Louis city M., A., Ph., B., E. Wigginton, Eddie Boyd Pike county E., L., M., Ph., G. Wilcox, Frank Edward Texas Ms., G. & M., Ph., S., E. Wilhite, Albert Newton Boone county E., B., Ph., D., M., L. Williams, Walter Scott Johnson G. & M., M. L., Eng., Ms., M. Williams, Harrison Ralph C. Girardeau L., Ph., C., G., M., E. Wilkinson, Benjamin Franklin Clay E., L., M. L., Ph., M. Wilkinson, John Walter Boone Senter Boone E., L., M. L., Ph., M. Wilkinson, Thomas Franklin Willis, Sallie Bettle Boone E., L., Anat., B., M., Bk. Wilson, Jameš Jenkins Audrain Wood, Henry Parker Hardin Moodruff, Anson Clarence St. Louis Myodruff, Firmin Bradley Jackson Youmans, George Faust Arkansas M. L., Ph., L., G., C., M. Younans, Frederick William Moodruff, Charles Platte M. L., Ph., E., M., B. Zeller, Frank Lindley Holt Law.			"	
Wells, Harry Taylor			"	
Westfall, Frank Earl			"	
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Wharton, Jacob Franklin  White, Joseph Tatum  Monroe  St. Louis city  M., A., Ph., B., Anat., C., Bk.  Wiebusch, Henry  St. Louis city  M., A., Ph., B., E.  Wigginton, Eddie Boyd  Pike county  E., L., M., Ph., G.  Wilcox, Frank Edward  Texas  Ms., G. & M., Ph., S., E.  Wilhite, Albert Newton  Boone county  G. & M., M. L., Eng., Ms., M.  Williams, Walter Scott  Johnson G. & M., M. L., Eng., Ms., M.  Williams, Harrison Ralph  C. Girardeau L., Ph., C., G., M., E.  Wilkerson, Benjamin Franklin Clay E., L., M. L., Ph., M.  Wilkinson, John Walter  Boone E., C., D., M., Bk.  Willis, Sallie Bettle  Boone E., C., D., M., Bk.  Wilson, Lena  "E., L., Anat., B., M., Bk., D.  Wilson, William Ross  "E., L., M., Ph., Bk.  Wilson, James Jenkins  Audrain Mood, Henry Parker  Hardin Law.  Woodruff, Anson Clarence  St. Louis M., Ph., L., B., D., Bk., E.  Wright, Firmin Bradley  Jackson S., Ph., Ms., M.L., Sur., D., M., Ly.  Youmans, George Faust  Arkansas  M. L., Ph., L., G., C., M.  Youmans, Frederick William  M., E., Ph., L., C.  Young, Charles Alexander  St. Louis county  M. L., Ph., L., C.  Young, Charles Alexander  St. Louis county  M. L., Ph., E., M., B.  Zeller, Frank Lindley  Holt "  Law.			"	
White, Joseph Tatum			"	
Wiebusch, Henry			"	E., N., Ph., B., Anat., C., Bk.
Wigginton, Eddie Boyd			·	
Wilcox, Frank Edward				
Wilhite, Albert Newton				
Williams, Walter ScottJohnson  Williams, Harrison RalphC. Girardeau  Wilkerson, Benjamin Franklin Clay  Wilkinson, John Walter  Boone  Wilkinson, Thomas  Franklin  Willis, Sallie Bettle  Boone  Wilson, Lena  Wilson, William Ross  Wilson, Jameš Jenkins  Audrain  Wood, Henry Parker  Hardin  Woodruff, Anson Clarence  St. Louis  Wright, Firmin Bradley  Jackson  Youmans, George Faust  Arkansas  Arkansas  M. L., Ph., L., G., C., M.  Wilson, M. L., Eng., Ms., M.  L., Ph., C., G., M., E.  Wilson, M. L., Ph., M.  E., L., M. L., Ph., M.  E., L., Anat., B.  Wilson, Jameš Jenkins  Med.  Wood, Henry Parker  Hardin  Woodruff, Anson Clarence  St. Louis  Wilson, Jameš Jenkins  M. L., Ph., L., B., D., Bk., E.  Wright, Firmin Bradley  Jackson  M. L., Ph., L., G., C., M.  Youmans, Frederick William  M., E., Ph., L., C.  Young, Charles Alexander  St. Louis county  Ms., C., G., S., M., M. L.  Zarn, Richard Charles  Platte  M. L., Ph., E., M., B.  Zeller, Frank Lindley  Law				
Williams, Harrison Ralph	Williams, Walter Scott			
Wilkerson, Benjamin Franklin. Clay  Wilkinson, John Walter Boone  Wilkinson, Thomas Franklin  Willis, Sallie Bettle Boone  Wilson, Lena "E., L., Anat., B., M., Bk., D.  Wilson, William Ross "E., L., Anat., B., M., Anat., B.  Wilson, Jameš Jenkins Audrain  Wood, Henry Parker Hardin  Woodruff, Anson Clarence St. Louis  Wright, Firmin Bradley Jackson  Youmans, George Faust Arkansas M. L., Ph., L., G., C., M.  Youmans, Frederick William "M., E., Ph., L., C.  Young, Charles Alexander St. Louis county Ms., C., G., S., M., M. L.  Zarn, Richard Charles Platte "M. Law.  Wilkinson, James Jenkins "E., L., M., Bh.  "E., L., M., Ph., Bk.  "E., L., M., Ph., M., M. L.  "E., L., M., Ph., M., M., M. L.  "E., L., M., Ph., M., M., M., M.  "E., L., M., Ph., M.			"	
Wilkinson, John Walter Boone  Wilkinson, Thomas Franklin  Willis, Sallie Bettle Boone  Wilson, Lena "E., L., Anat., B., M., Bk., D.  Wilson, William Ross "E., L., M., Ph., Bk.  Wilson, Jameš Jenkins Audrain  Wood, Henry Parker Hardin  Woodruff, Anson Clarence St. Louis  Wright, Firmin Bradley Jackson  Youmans, George Faust Arkansas M. L., Ph., L., G., C., M.  Youmans, Frederick William "M., E., Ph., L., C.  Young, Charles Alexander St. Louis county Ms., C., G., S., M., M. L.  Zarn, Richard Charles Platte "M. L., Ph., E., M., B.  Zeller, Frank Lindley Holt "Law"			"	E., L., M. L., Ph., M.
Wilkinson, Thomas Franklin  Willis, Sallie Bettle Boone  Wilson, Lena "E., L., Anat., B., M., Bk., D.  Wilson, William Ross "E., L., M., Ph., Bk.  Wilson, James Jenkins Audrain  Wood, Henry Parker Hardin  Woodruff, Anson Clarence St. Louis  Wright, Firmin Bradley Jackson  Wright, Firmin Bradley Jackson  Youmans, George Faust Arkansas M. L., Ph., L., G., C., M.  Youmans, Frederick William "M., E., Ph., L., C.  Young, Charles Alexander St. Louis county Ms., C., G., S., M., M. L.  Zarn, Richard Charles Platte "M. L., Ph., E., M., B.  Zeller, Frank Lindley Holt "Law.			"	E., C., D., M., Bk.
Wilson, Lena			"	
Wilson, William Ross	Willis, Sallie Bethe	.Boone	"	E., L., Anat., B., M., Bk., D.
Wilson, William Ross	Wilson, Lena	. "	44	E., G. & M., L., M., Anat., B.
Wilson, James Jenkins			66	
Wood, Henry Parker			"	
Woodruff, Anson Clarence St. Louis "M., Ph., L., B., D., Bk., E. Wright, Firmin BradleyJackson "S., Ph., Ms., M.L., Sur., D., M., Ly. Youmans, George FaustArkansasM. L., Ph., L., G., C., M. Youmans, Frederick William"M., E., Ph., L., C. Young, Charles Alexander St. Louis countyMs., C., G., S., M., M. L. Zarn, Richard CharlesPlatte "M. L., Ph., E., M., B. Zeller, Frank LindleyHolt "Law.			"	Law.
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Youmans, George Faust			46	
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Young, Charles AlexanderSt. Louis county. Ms., C., G., S., M., M. L.  Zarn, Richard CharlesPlatte ".M. L., Ph., E., M., B.  Zeller, Frank LindleyHolt ".Law.				
Zarn, Richard Charles Platte "M. L., Ph., E., M., B. Zeller, Frank Lindley Holt "Law.				
Zeller, Frank Lindley Holt "Law.				
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			"	Ph., Med.

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Change Coo	Nolson P. S. D.	wis county	M. L., Ph., E., D., Ms., M., C.
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	ast NormalCa	pe Girardeau Co.	.L., C.
	Levi, B. Ag., '81,		36. 7
	niversityBo	one county	Ms., Ly.
	s Albert, B. S. D.		
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Dovin Olivor	. D. Cum. 109 Mia	nton county	M. L., Ms., Ly., L., Sur., M.
	P., Sur., '83, Mis-	-11	D
Dorgott How	rand D. A. C. 104	erby county	D., E., Bk., M., L., C.
	vard, B. A. S., '84,		
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	th Todd, B. A. S.,		
Codwin Wm	Mastin D. D.	one county	E., Sur., D., Ms., C.
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Warrison Mor	1 UniversityMo	nroe county	G. & M., Eng., C., Ly., M. L.,
	rcellus Davis, Sur.,		M. Ms.,
704, Missour	i UniversityLa	ayette county	Eng., M. L., Ph.
	Harvey, Pe. P.,	41 . 1	D. 35 35 5 5
Warrag Creat	i UniversitySco	tland county	Ph., M., M. L., L.
	a, A. D. B., '83,		
	niversityBoo	one county	N .
	a Clifton, C. E.,		
	i UniversityPla	tte county	Ly.
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Sandars John	Inach T. F. 194	e county	M., Anat., B., Ph., E., C.
	Jacob, T. E., '84,	tland sounts 4	0 M I B M
Smith Ernest	niversitySco Ellsworth, C. E.,	tiand county	U., M. L., Eng., M.
'84 Missour	i University Tee	l.a.a	D W T 25
Stubblefield	John Loxley,S.B.,	kson county	E., M. L., Ms., G. & M., D.,
		mr country 1	B., N., Ly.
Snoddy James	i UniversityBar es Samuel, L. B.,	ry county	Ly.
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Missouri II	niversity And	luain country	W DL W T T
Terry Jane I	niversityAud Lyon, A. B., Mil-	irain county	и., Pn., M. L., Ly.
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wante COI	${f lege}{f Wisconsin}$	<b>.</b>	

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Bishop, E. W., P	
Bowman, Oma L., P	
Burchard, S. W., T	Bem.
Buskett, J. L. Jr., T	
Campbell, May, P	
Chasteen, J. M., P.	
Cleino, Emma D., P	
Colley, C. H., P	
Colley, Ida, P	
Cowan, J. W., P	
Cullings, Jay, T	
Daugherty, John H., P	
Deegan, Kate E., P	
Deegan, May, P	
Dennis, Helen, P	
Donnan, L. L., P	
Donnan, W. Q., P	
Douthat, Claude, T	
Elliott, W. R., P	
Fleming, Ira M., T	
Frazier, Naoma B., P	
Fulcher, Jas. E., T	Rolla.
Garcia, Guadaloupe, P	
Garcia, Juan, P	Mier, Mexico.
Garner, Hugh, P	
Halbert, Eura, P	
Harrison, R.L., P	Morley.
Hinojose, Juan, P	Rio Grande City, Texas
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Lachmund, Oscar, T	St. Louis.
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Lane, Merton, P	Waynesville.
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Lopez, David, P	
Lopez, Francisco, P	Rio Grande City, Texas.
Madigan, Mary, P	
Martin, W. D., T	Lecoma.

Name.	Residence.
Martinez, J. G., T	San Diego.
Mason, Wm.J., P	
McHugh, P. A., P	
Millard, Thos. F., P	
Morgan, Effie M., P	
Morse, Lucy B., P	
Nichols, Wm., P	
Owen, Jno. R. D., T	
Owen, Wm. C., T	Rolla.
Perez, Yldifonso, P	Camargo, Mexico.
Phillips, R. W., P	
Porter, Florenc C., P	
Richardson, J. P., Jr., P	
Rineheart, L. J., P	
Ritter, R. H., P	Sedalia.
Sanchez, Refugio, P	Laredo, Texas.
Seay, W. J., P	Salem.
Scott, Flora L., P	Rolla.
Scott, Jno. W., P	Rolla.
Shaw, Portis P., T	
Steinbeck, A. H., P	Cooper Hill.
Van Frank, Phil., T	
Valliant, F. W., T	St. Louis.
Villareal, M. G., P	Camargo, Mexico.
Warth, G. A., T	Nevada.
Webb, Cara, P	Steelville.
Webster, F. D., P	Rolla.
Wiles, Geo. B., T	St. Louis.
Williamson, G. B., P	
Wilson, Fremont, T	Salem.
Yeater, M. W., T	Sedalia.

<sup>\*</sup>Explanations.—The letter T after a student's name signifies that he is in the Technical Department; P, that he is in the Preparatory Department.



Forty-Third Annual



# Commencement,

Missouri State University.

Thursday Morning June 4, 1885.





## MUSIC-PRAYER-MUSIC-

#### MUSIC.

delivery of diplomas and prizes.

Stephens Medal, , , THOMAS LEWIS RUBEY.
MeAnally Prize in English, . ZANNIE MAY DENNY.
Mo. University Astronomical Medal, WM. ANDERSON ROTHWELL.

A Salute of Thirty-Eight Guns by University Cadets, Lieut. J. J. Haden, U. S. Army, Commandant.

# GRADUATES OF 1885

#### ACADEMIC COLLEGE.

First Rank with Distinction. (Av. grade 96 400.)

Will Anderson Rothwell, S. B. Wm. Edgar Coons, A. B.

First Rank. (Av. grade 90-96.)

Robin Marshall Johnson, S. B. Ernest Ellsworth Smith, S. B.

Louis Theilmann, S. B.

Washington Strother Dearmont, A. B. Zannie May Denny, S. B. Estelle Virginia Lewright, A. B. Second Rank. (Av. grade 70-90.)

Thomas Lewis Rubey, A. B. Wm. Porter Roberts, L. B. William Gerig, S. B. Wm. Foster Means, L. B. Wm Warren Botts, L. B.

Payne Augustine Boulton, L. B. Lucy Wyatt Gentry, A. D. B. John Crawford Turk, L. B. Eleanor Ficklin, A. D. B. John Sherman Alexander, S. B.

LAW COLLEGE, (Degree of LL. B.)

GRADUATED MARCH, 1885.

Alonzo Daniel Burnes. Joseph Morrow Clary. Sterling Price Dorman. John Charles Ewing. Thomas Nathan Haynes. Geo. Lunceford Horine. Albert Wm. Lyon.

Joe McGregor.
Thos. Jefferson McMillan.
James Tilford Neville.
Samuel Albert Payne.
Henry Parker Wood.

Robert C. Prewitt.
Thomas C. Reed.
William Robe.
Robert Lincoln Rowden.
Robert Shelby Rutledge.
Samuel S. Shull.
Cornellus Hite Skinker.

John Aaron Snider. Wm. Price Taylor. James McPherson Thomas. James Wm. Tincher.

#### ENGINEERING COLLEGE.

Walter Scott Williams, C. E. Julius Henry Stowe, C. E. Richard Harvey Philips, Top'l. Eng'r. John Trimble Grigsby, C. E.

Marcellus Davis Harrison, C. E. John Sherman Alexander, S. B., C. E. Jno. Wm. Wade, Ph. B. 79, C. E. Lucius Robert Lewis, Surveyor. Byron Buckingham Beery, Surveyor.

#### MEDICAL COLLEGE, (Degree of M. D.)

	Committee.	Faculty.
Zach Brainerd	96.78	95.73
John Morgan Davis		88.86
Lorenzo Dow Hartley	87.73	84.19
William Henry Miller	85.65	90.78
Zach Brainerd, first thesis. John Morgan Davi	is, second the	esis.

#### NORMAL COLLEGE.

Degree of Pe. B. (Bachelor of Pedagogics.)

Ernest Ellsworth Smith, S. B. Washington Strother Dearmont, A. B. Zannie May Denny, S. B. Wm. Porter Roberts, L. B. Wm. Foster Means, L. B. Payne Augustine Boulton, L. B. Lucy Wyatt Gentry, A. D. B. John Crawford Turk, L. B. Gretta Hayes, A. D. B., '83.

Degree of Pe. P. (Principal in Pedagogues.)

Fredus Nelson Peters. Solomon Henricks. Carl Augustus Hansmann. Hatte Sue Bumbarger.
Charles Clifford Dimmitt.
Richard Huff/Emberson.
James Marion Rouse.

Joseph Tatumn White. Joseph Frazier. Benjamin Franklin Simcoe. Daniel Kauffman. Wm. Francis Pigg. Geo. Washington Murphy. Edward Everett Smith.

#### MASTER'S DEGREES.

A. M.

Kate Hayes, A. B., '80. Josle Bacon Latham, A. B., '80. John Wesley Leonard, A. B., '79. Mrs. Jennie Banks Marshall, A. B., '81. Edwin C. White, A. B., '56. Charles Emmett Yeater, A. B., '80. Ph. M.

Louis Wagner, Ph. B., '81.

Levi Chubbuck, B. Ag. S., '82.

M. Ag. S. George C. Husmann, B. Ag. S., '82.

HONORARY DEGREES, (LL. D.)

Percy W. Mathews, M. R. C. P. S. L. & E., York Factory, Hudson's Bay.



#### MUSIC-PRAYER-MUSIC.

Thesis, . . . . . The Plurality of Worlds,

WILL ANDERSON ROTHWELL, S. B.

Essay, . . . . The Atheism of Shelly,

ZANNIE MAY DENNY, S. B., Pe. B.

MUSIC.

MUSIC.

Valedictory Address of Medical Glass,

ZACH BRAINERD, M. D.

Valedictory Address of Academic Glasses,

WM, EDGAR COONS, A. B.

#### MUSIC.

DELIVERY OF DIPLOMAS AND PRIZES.

Stephens Medal, , . THOMAS LEWIS RUBEY.
McAnally Prize in English, . ZANNIE MAY DENNY.
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GRADUATED MARCH, 1885.

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John Charles Ewing.
Thomas Nathan Haynes. Geo. Lunceford Horine. Albert Wm. Lyon. Joe McGregor.
Thos. Jefferson McMillan.
James Tilford Neville.
Samuel Albert Payne. Henry Parker Wood.

Robert C. Prewitt. Thomas C. Reed. William Robb. Robert Lincoln Rowden. Robert Shelby Rutledge. Samuel S. Shull Cornelius Hite Skinker. John Aaron Snider. Wm. Price Taylor. James McPherson Thomas. James Wm. Tincher.

#### ENGINEERING COLLEGE.

Walter Scott Williams, C. E. Julius Henry Stowe, C. E. Richard Harvey Philips, Top'l. Eng'r. John Trimbie Grigsby, C. E.

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Louis Wagner, Ph. B., '81.

M. Ag. S. George C. Husmann, B. Ag. S., '82. Levi Chubbuck, B. Ag. S., '82. HONORARY DEGREES, (LL. D.)

Percy W. Mathews, M. R. C. P. S. L. & E., York Factory, Hudson's Bay.

# PROGRAMME OF THE CLOSING EXERCISES

OF THE

# Missouri University.



MAY 25th to 30th.—Closing examination.

THURSDAY EVENING, MAY 28th.—Commencement of Normal School. Address before the graduating class by President J. P. Blanton of Kirksville Normal School.

SUNDAY, MAY 31, AT 3 P. M.—Baccalaureate Discourse to the Graduating Classes, by Rev. W. Pope Yeaman, D. D.

MONDAY, JUNE 1, AT 8 P. M.—Annual Address before the Union Literary and Athanæan Societies, by Hon. A. W. Terrell, of Austin, Texas.

TUESDAY, JUNE 2, AT 10 A. M.—Annual Meeting of the Missouri Press Association.

In the evening at 8 o'clock, the annual Stephens Medal Contest before this Association. This contest is limited to Academic candidates for graduation—and the prize is a medal and a book, purchased with the annual income of \$500, and awarded for the best original oration.

WEDNESDAY, JUNE 3, AT 8 P. M.—Oration before the Alumni Association, by Hon. Stephen B. Elkins, A. M., (Class of '60), of New York City.

THURSDAY, JUNE 4, AT 9 A. M.—Commencement Exercises and delivery of Dinlomas.

Immediately afterward (10:30 A. M.) Oration by U. S. Senator George G. Vest, on occasion of unveiling the original Marble Tablet on which is carved the memorable epitaph of Thomas Jefferson.

The tombstone that marked Mr. Jefferson's grave for more than fifty years, and this tablet were formally presented to the Missouri University by his great-grand-children.

In the afternoon of Thursday at 2:30 o'clock, the Hon. James S. Rollins, LL. D., President of the Board of Curators, will preside at the ceremonies dedicating the enlarged and improved University building to the cause of education. It is expected that several public organizations will participate; also Governor Marmaduke and Ex-Governor Crittenden and other distinguished public men.

SPECIAL NOTICE.—The Missouri Association of Surveyors and Civil Engineers, will assemble, in their Fifth Annual Meeting, on Thursday, June 4, at 8 P. M., in the rooms of the Engineering School of the Missouri University.

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# SUMMARIES.

#### A. SCHOOLS.

	110000	0,,,,,		
	a.	Sc	ience.	
		1.	Physics	187
		2.	Chemistry	166
		3.	Geology and Mineralogy	91
		4.	Biology	253
		5.	Mathematics and Astronomy	273
		6.	Metaphysics	110
	<b>b</b> .	La	nguage.	
		1.	Hebrew and Semitic Literature	22
		2.	Greek	66
		3.	Latin	305
		4.	Modern Continental German, French, Spanish and Italian	265
		5.	English	209
2.	Profe	ssion	nal Schools.	
		1.	Agricultural Department	349
		2.	Normal	
		3.	Law	47
		4.	Medicine	20
		5.	Mining School at Rolla—Technical 20, Preparatory 52	72
		6.	Engineering	41
		7.	Military Science and Tactics	47
		8.	Art and Drawing	177
		9.	Commercial	152

#### B. COUNTIES.

Counties.	University	Mining School	Counties.	University	Mining School
Andrew. Atchison Audrain Barry. Bates Bollinger. *Boone. Buchanan Caldwell. Callaway, Cape Girardeau Carroll. Cass Chariton Clark Clay. Clinton. Cole. Cooper. Crawford Dade. DeKalb. Dent. Franklin Gasconade. Greene. Grundy Henry Hickory. Holt. Howard. Jackson Jasper Jefferson Johnson	1 17 4 1 2 118 2 6 6 3 7 5 1 1 7 7 5 1 1 7 7 5 2 2 5 3 1 6 6 6 4 1 7 1 7 1 7 1 7 1 7 1 7 1 7 1 7 1 7 1	2 2 2 4 2	Livingston. Macon Madison. Maries. Marion. Mercer Miller Moniteau. Monroe. Montgomery. Morgan Newton Nodaway Osage Pemiscot Pettis Phelps Pike Platte Polk Pulaski Putnam Ralls. Randolph Ray Saline Scottand Scott Shelby St. Charles. St. Clair St. Francois Ste. Genevieve St. Louis county	1 2 1 1 3 1 4 11 2 2 1 1 1 5 2 6 8 1 1 1 4 4 7 3 9 6 7 6 3 2 1 3 5 5	11
Knox. Laclede Lafayette Lawrence Lewis. Lincoln Linn	11 6 8 6 3		Vernon Warren Washington Wayne Total (81) counties	$\frac{3}{1}$	1  1 

<sup>\*</sup>A number of families move into the county and sojourn for educational purposes.

N. B. Students from other States are admitted on the same terms as those from the State of Missouri. There is no occasion for them to change their places of residence. The change of residence has hitherto occasioned an undue increase of the number hailing from Boone county, Mo. The students, male and female, are welcomed from all parts of the world on equal footing.

## C. STATES.

States.	University	Min. School.
Alabama		1
Arkansas	1	1
California		
eorgia		
Illinois		
[owa	1	
Kansas		
Mexico		5
New Mexico		
Missouri		57
Montana		8
Cexas		8
Virginia	i	
Wisconsin	1	
Total	459	72
Total (14 States).,		531

#### COMPARATIVE VIEWS.—ATTENDANCE.

				1877-8.		1878–9.		1879–80.		1880–1.	1881-2.	1882–3.	1883-4.	1884–5
At Columbia :	1874–5.	1875–6.	1876-7.	University	Normal Inst	University	Normal Inst	University	Normal Inst	University	University	University	University	University
Males	342	279	350	355	54	371	43	405	)	465	427	413	419	.388
Females	54	42	49	63	38	72	36	79	$\left.\right\} 41$	93	82	78	83	71
At Rolla :	396	321	399			}			,	558	509	491	502	459
Males	73.	54	48		25	4	12	4	19	71	65	92	62	58
Females	28	16	16	18		29		22		25	17	18	9	14
	, 101	70	64	418	43 92*	443	71 79	484	71 41	96	82	110	71	72
Totals	497†	391	463		553 <u>†</u>	5	938	58	96	654	591	601	573	531

\*18 were afterwards students of the University.
†Subtract 6 that were counted twice.
†Subtract 18 as counted twice and add 3 to the School of Art, whose names have not been given, making a clear total of 538, who have been taught by the University Faculty within the year.

||16 were afterwards students of the University, and are hence counted twice in the total.
| Subtract 16 as counted twice, making a clear total of 577, who have been taught by the University Faculty within the year.

#### STUDENTS AND GRADUATES.

Academic students and Graduates of the University from 1843 to 1885, inclusive. Also the Students and Graduates of the Medical Department of the University from 1845 to 1856.

	Numi at (	Aca	dem	ic G	radua	ates.	at ]
Ynars.	Number students at Columbia	A. B.	S. B.	Ph. B.	L. B.	A. D. B.	at Rolla
1843	78 80 97 108 95 81 88 80 126 143 181  129 112 171 188 64  104 87 129 144 204 201	2 4 4 3 7 11 6 12 6 8 6 14 10 16 13 12 9 9 7 5 1 2 7 7 1 7 4 4 3 1 1	2 3 4 3 2 7 8				
872. 873. 874. 875. 876. 877. 878. 879. 880. 881. 882. 883. 884.	217 294 407 401 396 321 399 418 444 484 484 558 509 491 502 457	3 3 5 4 2 4 3 6 7 7 2 †	3 16 4 6 10 7 7 3 1 11 6 9 4	4 1  2  1 1 8 3 2	1	1 2 1 +	75 107 101 70 64 43 71 71 96 82 110 71

In addition to the students above given, there were in the Model School in 1868, 173; in 1869, 50; in 1870, 36; in 1871, 21.

Number of graduates, A. B., from 1843 to 1860, 157; from 1861 to 1884, graduates, A. B., 102; S. B., 119; from 1872 to 1884, graduates, Ph. B., 22; N. S., 1; L. B., 24; A. D. B., 4.

\*Number of students not given in our file of catalogues.

\*\*The programme of commencement exercises.\*\*

<sup>†</sup>See programme of commencement exercises.

#### MEDICAL DEPARTMENT FROM 1845 TO 1856.

In the year 1845, McDowell's Medical College, St. Louis, was made a department of the University, but was divorced from it in 1856. The following was the attendance of students and the graduates of that department for the period named:

YEARS.	Students
\$46	92
847	
<del>34</del> 8	146
349	154
850	
51	159
352 ]	
853	
S54 During these years the No. of students averaged 100 per annum.	
355	
856	

## GRADUATES OF PROFESSIONAL SCHOOLS.

Years.	Normal Department.						Agricultural Depart- ment.				Medicine		gineer	Mine Metal	s and llurgy.	ates each y	
Tours	4 y'rs.	6 y	ears.	2 y	ears.	2 years.		6 years.		2 y'rs.	2 y'rs.	6 years.			3 years.		ear
	N. G.	D. B.	Pe. B.	N. D.	Pe. P.	D.Ag	р. н.	B.A.S	Ag.B.	LL.B.	м. р.	C. E.	т. Е.	Sur.	С. Е.	м. Е.	1 .
869. 870. 871. 872. 873. 874. 875. 876. 8877. 8878. 889. 889. 881. 882. 883. 884.	4 3 4 6	4 5 4 1	1 4 9 6 3 3 11 7	7 18 7	6 15 9 8 10 8 5 3 *	in 1800 the Faculty granted iffteen diplomas in Agriculture.	26 8 1 7	5 *	5 1 4	6 13 9 14 20 13 14 28 20 13 14 28 20 13 14 28	5 6 13 5 8 6 9 5 7 9 4 *	2 4 2 3 6 7 10	4 3 2 1 1 5 *	3 6 5 *	2 1 2 1 2 1 2 1 3 *	3 1 3 2 2 1 2 1 1 1	
	17	14	44	32	64		47	5	10	196	77	34	16	14	19	21	1

<sup>\*</sup>See programme of the commencement exercises.

# CLOSING EXERCISES.

#### 1885.

THURSDAY EVENING, March 26.—Commencement of Law School. Annual address before the Law Class, by Hon. Joseph B. Upton, Bolivar, Mo.

Saturday, May 3.—Annual Examination of all students on Fundamental Branches.

Monday, May 25, to Wednesday, June 3.—Closing Examinations of all classes. Sunday, May 31.—Baccalaureate Discourse, by Rev. W. Pope Yeaman, D. D.

Monday Evening, June 1.—Address before the Literary Societies by Hon. A. W. Terrell, of Austin, Texas.

Tuesday, June 2.—At 10 o'clock a. m., Missouri Editorial Convention, and in the evening Stephens Medal Contest in presence of Missouri Press Association.

Wednesday Evening, June 3.—Address before the Alumni Association by Hon. Stephen B. Elkins, of New York City.

Thursday, June 4.—9 a. m., University Commencement. Unveiling the original tombstone and the marble tablet bearing the epitaph of Mr. Jefferson, and address by U.S. Senator George G. Vest, of Kansas City, Mo.

Thursday afternoon the dedication exercises in charge of the Hon. James S. Rollins, LL. D., president of the Board of Curators, in which Governor Marmaduke and Ex-Governor Crittenden will participate.

## THE SCHOOLS OF THE UNIVERSITY.

#### I. THE ACADEMIC SCHOOLS.

#### A. SCIENCE.

1-1. Physics.

II-2. Chemistry.

III-3. Geology and Mineralogy.

IV-4. Biology.

V-5. Mathematics-Astronomy.

VI-6. Metaphysics.

#### B. LANGUAGE.

VII-1. English.

VIII-2. Modern Continental German, French, Spanish, etc.

IX-3. Latin.

X-4. Greek.

XI-5. Semitic.

#### II. THE PROFESSIONAL SCHOOLS.

XII-1. Agriculture.

XIII-2. Pedagogics.

XIV-3. Law.

XV-44. Medicine.

XVI-5. Mining and Metallurgy.

XVII-6. Engineering.

XVIII-7. Military Science and Tactics.

XIX-8. Art.

XX-9. Commercial.

#### COLUMBIA, BOONE Co., Mo., February 3d, 1885.

To the Hon. J. M. Wood, Speaker of the House, Thirty-third General Assembly:

Sir: I have the honor to transmit through you, to the House of Representatives, herewith a letter from Dr. S. S. Laws, President of the University of the State of Missouri, giving full information asked for in a resolution adopted by the House, that a list of the names of all students taught in said institution during the years 1883-4, with their ages, residence, time each has been taught, and tuition fees charged per session for the various branches of study.

In a former report addressed to the Senate and House, an abstract of the amounts annually paid to the President and each professor, teacher, or other officer of said institution, was fully given in accordance with the section of the statute referred to in said resolution.

Accompanying the letter of Dr. Laws will be found a letter addressed to him by J. H. Drummond, Esq., librarian and proctor of the University, which will be found to contain the list above asked for, with all information asked for in the above resolution.

I am, most respectfully, your obedient servant,

JAMES S. ROLLINS,

President Board of Curators of the University of the State of Missouri.

COLUMBIA, MISSOURI, February 2, 1885.

Hon. James S. Rollins, LL. D., President Board of Curators of the University of the State of Missouri:

SIR: I have the honor to acknowledge the receipt on the evening of January 30th, from the chief clerk, W. P. Bentley, a copy of the resolution of the House of Representatives of the XXXIII General Assembly of the State of Missouri, calling for information respecting the University of the State of Missouri under section 7247, R. S., 1879. The following is a copy of the said resolution, to wit:

WHEREAS, It is currently reported that small children are permitted to become students of the State University; and,

WHEREAS. The report of the Board of Curators to the Governor shows branches taught that should properly be taught in the public and graded schools, and not in the University maintained out of the moneys of the State, in consequence whereof large expense is entailed upon the State, and the standard of scholarship in the University lowered:

WHEREAS. The Board of Curators of the University have failed to cause to be furnished to this legislature within the first three weeks of its session a list of the names of students, their ages, their places of residence and the length of time each has been taught and tuition fees paid, as well as an abstract of the amounts paid the President, professors, teachers and other officers of the institution during the years

1883 and 1884; therefore, be it Resolved, That said Board be and they are hereby required to furnish without delay to this legislature a list of the names of all students that may have been taught at said institution during the years 1883 and 1884—giving the names, the ages, the place of residence of each and the time that each one has been taught, as well as the of the amounts annually paid to the President, and each professor, teacher or other of the amounts annually paid to the President, and each professor, officer of said institution—as they are regarded in accordance with section 7247 of article 1 of chapter 156 of the R. S. of Missouri, and the chief clerk is hereby requested to forward a copy of this resolution to the President of said institution.

Steps were at once taken in compliance with this call, and I now have the honor of placing in your hands the accompanying document, which is the result of the compilation, as a means of answering a main part of the inquiry. This paper is made up from the records and its voluminousness is unavoidable. The information it conveys is valuable, and it is hoped that it may serve to effectually dispel certain erroneous impressions which are reported as current and are to the prejudice of the institution. It is perhaps proper that I should ask attention briefly to a few points:

1. There is no limit of age for admission, but only of qualification, for entrance into the organized classes, ascertained by examination. All students are allowed to attain a class standing only by examinations, and this rule applies alike to students newly entering and to those already entered.

The old-time rule was to admit to the Freshman class at 14 years or over, if qualified. Our rule is to admit, as stated, on qualification alone, without regard to age; and yet, out of over 1,400 students under our instructions within the biennial period intervening between the XXXII and XXXIII General Assemblies, not a single student as young as 14 has entered our classes and less than 40 under sixteen. About the youngest student in the institution at the present time completed the work of our excellent town school before entering. Our admirable town school has over 300 pupils and the two excellent girls' schools in this place take charge of some children. These active and prosperous schools of this place, not to speak of several individual schools, gather up the "small children" and not the classes of the University.

2. It is not only plain that our rule of admission is effective, but these statistics make it sufficiently evident, from the fact that the average of our students is over twenty years, that our lowest classes are sufficiently high for our Missouri school work at the present time. The fact that the same subjects, to a limited extent, enter into the work of the lowest classes of the University and of the common schools, is deemed a virtue, for it does not imply, nor is it a fact, that the work done here in those subjects is not of a more advanced grade. Take such subjects as English Grammar, Geography and Arithmetic; a certain grade of knowledge, such as the common schools impart in these subjects, is necessary as a qualification for entering our classes; and then, rapid and thorough reviews are made and the pupils are raised to the advanced stages of these subjects. Our English Department of work is fundamental and the work indicated is designed to make sure of thoroughness in these elementary subjects, so as to clear the way for the higher work.

All experienced teachers will testify that students in advanced subjects are most liable to be weak in their English and elementary education. It would be better to cut off the classes at the top than at the bottom, situated as we now are in Missouri and will be, perhaps, for a generation to come.

Our elementary course is not an abstraction, nor is it an imitation of what may be done elsewhere under other conditions, but it is digested out of our own concrete case where preparatory intermediate high schools and classical academies have only a nominal existence, whereas in the oldest portions of our country they are a potent factor. Our normal schools are not preparatory schools to the University, nor to the colleges, but, according to the legislative purpose of their creation, it is their business, not to play the role of preparatory academies or high schools, and much less of colleges, but to prepare teachers for the district schools, especially in the country. The link of connection between the University classes and the normal schools is the district school, and the district school, and not the academies, nor high schools, nor colleges, nor the University, is their immediate objective point. The academies and colleges and the University are interested, not directly in the children of the normals, but in their grand-children born in the district school.

Let the normal graduates do good work as teachers in the common schools and that will send improved pupils to all other schools.

Properly understood, therefore, the normals have an important place to fill, and in that place, not out of it, are entitled to liberal recognition and support. They are professional schools to prepare teachers for the district schools, and are not academies, nor high schools, nor colleges, nor preparatory schools for anything but the work of the common school. By improving these common school teachers, they will the better earn the money of the State paid them in wages and raise the pupils to a higher plane for entrance on the duties of life or on the more advanced labors of the other schools of the State, public and private.

The University has no preparatory department, but each department of Language and of Science work is organized into a distinct school with its own elementary as well as advanced classes, so as to make sure greater consistency and thoroughness of scholarship than would otherwise be possible. Prof. F. T. Kemper, of Boonville, one of the most eminent teachers ever known in Missouri, as my colleague, worked on this method more than twenty-five years ago and bore this testimony:—"At the beginning, more work for the professor; at the end, less work: result, better scholarship." Yes, it is harder work for the Faculty, but instead of lowering, it raises the standard of scholarship.

The common school and the University constitute our original Missouri State system of schools and have constituted it from the organization of the State, everything else in this school work of the State being secondary and subservient to them, so that from the nature as well as from the actual necessities of the case, the lowest University classes take, and should take by the hand the higher common school classes, and thus render our State school work continuous and complete.

If the General Assembly choose to do so, of course that honorable body has the power to strike out from the course any particular subjects and even whole years of work; but the wisdom and policy of doing so may well "give pause." The more extended usefulness of the University and its greater efficiency in its service of the State as at present organized, entitle it to the more cordial and liberal support. But I was careful to have a copy of the last catalogue, 1883–1884, sent to each member of the present General Assembly, soon after the result of the election last fall

was announced, and the entire internal organization and working of the University in detail being therein given, it is not deemed necessary to pursue this point further. Although there are but few left, yet individual members who call for the catalogue will be promptly supplied as long as they last.

3. I have on file a note from yourself, dated January 12th, 1885, stating that you had already sent to Jefferson City, for the XXXIII General Assembly, the usual report of the Board of Curators, embracing a complete exhibit of the Treasurer's accounts, carefully footed and balanced and properly attested by affidavit; and the estimate of current income and expenditure for the current biennial period has since been added. Evidently the honorable members of the House were not aware that this report had already been submitted in the Senate.

A copy of the document now placed at your disposal is preserved; but I would venture to suggest that it be made a supplement of the usual report of the Board already submitted, that it may be printed therewith. It is certainly gratifying to be able to utilize by way of valuable information and in the correction of erroneous impressions, a mass of detail that has been carefully gathered and preserved, but which at times seemed almost useless.

Respectfully submitted by

S. S. LAWS,

Pres. of University, State of Missouri.

#### GENERAL SUMMARY.

As a rule our students enter for the year, or for what remains of it after entrance, and the work of the year is continuous. In the college year 1882-1883, making an allowance of twenty (20) for discontinuances during the fall of 1882, we then have:

Students taught in the University of the State of Missouri from January to	
June, 1883	472
Students taught during the college year from Sept., 1883, to June, 1884	506
Students taught from Sept. to Dec. 31st, 1884	423
Total number of students taught during the two calendar years, 1883-1884	1401*
Excluding matriculations in the fall of 1882 and the matriculations in Janu-	
ary, 1885, we have had a total of matriculations, or entries, during the	
two calendar years, 1883–1884, of	998*

Out of this number the books show 8 students under 15 years, and 28 under 16 years, and the average age of the whole number is 20 years and 1 month.

<sup>\*</sup>The difference between the number (998) entered during the years 1883-1884 and the number taught (1401), arises from the fact that the college year does not correspond with the calendar year.

#### I. SCHOOL OF PHYSICS.

EMERITUS PROFESSOR NORWOOD.

PROFESSOR THOMAS.

#### W. H. SCHUERMANN, Assistant Professor.

Students in all the Academic courses begin their work in Physics in the subfreshman year. During the current year Gage's Elements of Physics was used as a text-book with beginners. It is our present intention to change the character of the work during the coming year, making elementary work in the Physical laboratory a prominent feature. A room well adapted for such work is now being fitted up. A fee of two dollars will be charged. All students offering themselves for this class, must present a passing grade in the mathematics of the "first year" from Professor Ficklin, as a condition of enrollment.

At the beginning of the Sophomore year, all students enter the advanced class, using Ganot's Physics (Atkinson's), supplemented by lectures, problems and references. A passing grade in Algebra and Plane Geometry, from the Professor of Mathematics, is required for entrance to this class.

Students in the Science course enter the Physical Laboratory at the beginning of the Junior year, spending five hours per week there during the first semester and nine hours per week during the second semester. Students in the course in Arts spend five hours per week in the Laboratory during the second semester of the Senior year.

Students in the course in Letters have five hours per week in the Laboratory during the first semeter of the Junior year. In the prosecution of this work the manuals of Pickering, Kohlrausch, Kempe and others are used, accompanied by lectures on methods and instruments, and on the discussion of results. A special Laboratory fee of five dollars per semester is charged. Students are also held responsible for apparatus used by them. Students in the Medical, Normal and Agricultural courses also take the semester in Elements, and receive instruction in their specialties in the Laboratory during the second semester.

The number of students enrolled this year is as follows:

Elementary.	Academic       97         Agricultural       3         Normal       9         Medical       15
Auvanceu	70
Laboratory	Science       12         Arts       6         Letters       2         Special       4
	Special. 4 — 24
Total	

The Department is much better provided with illustrative apparatus than most Western institutions, and it has some pieces for measurement which are unsurpassed by any in this country. It is safe to say that no institution in the West'can

offer as great advantages for either elementary or advanced work in Physics as we can. It has been the constant aim of the present management of this department to place it on equal footing with the best in America, and while much has been done in realizing that aim, much more remains to be done. We need a library and more apparatus, which will cost at least \$20,000, in order that the department may take the position to which it is entitled.

#### II. SCHOOL OF CHEMISTRY.

#### PROFESSOR SCHWEITZER.

LIEUTENANT J. J. HADEN, U. S. A., Assistant.

#### I. ARRANGEMENT OF CLASSES BY SEMESTER.

#### FIRST SEMESTER.

- 10-11. Agricultural Chemistry (half study).
- 10-11. Physiological Chemistry and Toxicology (half study).
- 11-12. Rational Chemistry (full study).

#### LABORATORY:

Appleton: The young Chemist (half study).

Bolton: Students Guide in Quantitative Analysis (full study).

#### SECOND SEMESTER.

- 10-11. Phenomenal Chemistry (full study).
- 11-12. Organic and Applied Chemistry (half study).
- 11-12. Domestic Chemistry (half study).

#### LABORATORY:

Beilstein: Lessons in Qualitative Chemical Analysis (half study).

Elderhorst: Blowpipe Analysis, and use of Balance, Spectroscope, Polariscope, Calibration of tubes, taking of specific gravities, measurement of volumes, etc., (half study).

#### II. CONSECUTIVE ARRANGEMENT OF CLASSES.

- 1. Phenomenal Chemistry (4th semester, full study).
- 2. Laboratory: Appleton, The Young Chemist (5th semester, half study).
- 2, a. Agricultural Chemistry (half study-students in Agriculture).
- Laboratory: Beilstein, Lessons in Qualitative Chemical Analysis (6th or 10th semester, half study).
- 3, a. Domestic Chemistry (6th semester, half study-students in Girls Course.)
- 3, b. Physiological Chemistry and Toxicology (half study—students in Medicine.
- 4. Rational Chemistry (9th semester, full study).

- 5. Organic and Applied Chemistry (10th semester, half study).
- 6. Laboratory: Elderhorst, Blowpipe Analysis and use of Instruments, (10th semester, half study).
- 7. Laboratory: Bolton, students' guide in Quantitative Analysis, (11th semester, full study).

#### III. REQUIREMENTS FOR GRADUATION.

(Numbers referring to previous table.)

- No. 1 to 7. Students in Science, in Girls Course in Arts (including 3 a), in Civil Engineering.
- No. 1 to 7. (passing 6) Students in Letters.
- No. 1 to 5. Students in Arts and in Medicine (including 3 b.) (\*)
- No. 1 to 3. Students in Topographical Engineering and Pedagogics (Pe. P..)

#### IV. SYNOPSIS OF WORK.

#### 1. PHENOMENAL CHEMISTRY.

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 volumes of gases by changes of temperature and pressure, writing of reaction, and establishing of formulas upon proper physical facts accompany the work. (Wurtz Elements of Chemistry, pages 48 to 418).

#### 2. a. AGRICULTURAL CHEMISTRY.

General introduction; function 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; condition of vegetation.

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

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

#### 3. a. DOMESTIC CHEMISTRY.

Food: preparation of food; cooking vessels; condiments; tea, coffee, alcoholic drinks.

Cosmetics: face powders and washes; enamels, hair dyes and restorers; tooth powders, soaps, pomatums, essences.

Fuel and heating.

Fibre and clothing.

Dyestuffs and dyeing.

Dust and dusting.

<sup>\*</sup>Students in Medicine may substitute for No. 4 additional Laboratory work.

# 3. b. PHYSIOLOGICAL CHEMISTRY AND TOXICOLOGY.

General introduction; constituents of the body, inorganic histogenic and products or 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 investigation.

#### 4. RATIONAL CHEMISTRY.

The principles of chemical Philosophy with a general review of inorganic Chemistry. (J. P. Cooke: Principles of Chemical Philosophy, Part 1st.)

# 5. ORGANIC AND APPLIED CHEMISTRY.

General arrangement of subject matter; monatomic alcohols, acids and derivatives, including ethers; aromatic compounds; compound ammonias; selected polyatomic acids and alcaloids.

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 adulterations.

Illuminants. Disinfectants; Antiseptics.

#### LABORATORY WORK.

In each of the four classes the work to be done understandingly and with neatness, dispatch and accuracy.

- 2. Appleton, The Young Chemist.
- 3. Beilstein, Lessons in Qualitative Chemical Analysis.
- 6. Elderhorst, Blowpipe Analysis. The amount and kind of work involving the use of instrument, to be assigned in each case separately.
- 7. Bolton, Students Guide in Quantitative analysis; 10 analyses according to blanks.

# V. RULES FOR THE GUIDANCE OF STUDENTS, WORKING IN THE LABORATORY.

- 1. Each student must make a deposit of \$10.00 before he can draw his apparatus from the supplies of the *University*; this is returned to him, upon-the return of the apparatus, subject to a small percentage for its use, and after deducting the value of such articles as he may have broken or injured.
- 2. Each student must make an additional deposit of \$10.00, when drawing the apparatus for Quantitative Analysis.
- 3. No article will be received back which is not in a sufficiently good condition to be re-issued again.
  - 4. Articles may be purchased for cash.

- 5. The charge to students for ordinary chemicals has been fixed at the rate of \$3.00 per month.
- 6. The Laboratory is open to students daily from  $9\,\mathrm{a.\,m.}$  to  $5\,\mathrm{\,p.\,m.}$ , Mondays excepted.

# VI. NUMBER OF STUDENTS IN THE CLASSES OF THIS SCHOOL DUR-ING THE SCHOLASTIC YEAR JUST ENDED.

119 Students in Phenomenal Chemistry.

33 Students in Rational Chemistry.

No Students in Agricultural Chemistry.

17 Students in Physiological Chemistry and Toxicology.

16 Students in Applied and Domestic Chemistry.

110 Students in Laboratory, of whom (a) 46 Appleton-Young Chemist.

- (b) 44 Beilstein-Qualitative Analysis.
- (c) 19 Fresenius Bolton Quantitative Analysis.
- (d) 1 Blowpiping.

295 Students.

Number of individual students admitted to the school, 166.

# III. SCHOOL OF GEOLOGY AND MINERALOGY.

PROF. SPENCER.

# MINERALOGY AND LITHOLOGY.

These subjects extend through the first semester of the Senior year. For admission to this class, students are required to have taken the course in Chemistry. The lectures are illustrated by specimens of minerals and rocks, and by microscopic sections showing their structure. The students are required to provide themselves with small elementary collections of minerals (at a cost of two or three dollars.) Text book, "Dana's Manual of Mineralogy."

There is also a special course in these subjects, covering half a semester, given to the students of Agriculture and Engineering.

# GEOLOGY AND PALÆONTOLOGY.

These subjects cover daily lectures for the second semester of the Senior year. For admission to the class, students are required to have completed the course in Mineralogy, Lithology and Zöology. Half of a semester is devoted to Physical and Dynamical Geology; the second half of the semester is devoted to Palæontology and Historic Geology.

The course of instruction is by lectures, illustrated by charts, lantern projections and specimens. The students also use Le Conte's Elements of Geology.

# PHYSICAL AND ECONOMIC GEOLOGY.

This course is intended especially for the Engineering and Agricultural students, but any regular student of Geology is permitted to attend the class. The instruction is by lectures, and embraces geological surveying, stones and other building materials, decomposition of rocks and production of soils, useful minerals occurring in veins and beds, coal deposits, natural waters, various ordinary useful mineral substances, and surface geology applied to Engineering and Agriculture.

## GEOLOGIC MUSEUM AND FIELD WORK.

Students have been required to devote sufficient time in the Museum to enable them to determine the common minerals, rocks and fossils. In connection with the new Museum, Mineralogic, Lithologic, and Palæontologic Laboratories will be established. With these increased facilities, special courses of practical work will be organized.

Owing to the favorable geologic exposures in the region about Columbia, exoursions for field work will be undertaken when practicable.

#### PHYSICAL GEOGRAPHY.

During a portion of the first semester of the Freshman Year, there is provided a course in Physical Geography, which is illustrated by specimens and lantern projections. Text book, Geikie's Physical Geography.

#### THE MUSEUM.

The new Museum occupies the north half of the new west wing of the Main Building. Its inside dimensions are 45 by 70 feet, and consist of the ground floor and four galleries—making one large and magnificent room. It is 59 feet high, well lighted by ten windows on each floor, and a large sky-light reaching the length of the wall. The cases have not yet been placed in the building, as it is very recently finished, and funds have not yet been appropriated for the purpose. It has capacity for 950 longitudinal feet of upright cases; 480 feet of continuous table cases around the wall, forming the balustrade; and 600 square feet of other flat cases, besides the space in the centre of the ground floor. Attached to the Museum are suitable lecture and work rooms and laboratories, which will be furnished at the earliest possible opportunity. All students doing museum and laboratory work are required to make a deposit of ten dollars, which will be returned less any breakage, loss or damage.

# ADDITIONS TO THE MUSEUM.

Two Amphioxus lanceolatus from President Laws.

A large collection of stone hatchets, arrow-heads and other Indian relics from Boone county, presented by Mr. James C. Gillaspy.

Missouri stone hatchets from near Rocheport, Boone county, presented by Rev. Moses U. Payne.

A mounted specimen of Talpa from Mr. George C. Pratt.

A large Cygnus (Swan) killed in Boone county-purchased.

The following are presented by Robert Bell, LL. D., F. G. S., F. R. S. C., Senior Assistant Director of the Canadian Geological Survey:

Skin of Polar Bear for mounting; skin of 12 Northern Birds, mostly large, and some rare; complete skull of Atlantic Walrus; complete skull of White Porpoise; five skulls of Polar Bears; model of Eskimo Kyak about 6 feet long; Eskimo water-proof coat; Eskimo Harpoon line, air-float, etc.; Eskimo stone kettle; Eskimo Indian stone lamp; collection of Northern Indian and Eskimo manufactures; Eggs of Northern Birds.

400 copies of Bulletin of Museum and nine electrotype plates of the illustrations. Fifty-six species of Niagara Fossils described in the Bulletin of which fifty are original type specimens; purchased from Prof. Spencer.

# IV. SCHOOL OF BIOLOGY.

PROFESSOR TRACY.

PROFESSOR SPENCER.

# BOTANY AND ENTOMOLOGY.

#### PROFESSOR TRACY.

In the course in Science, Botany is studied during three and one-half semesters. Descriptive Botany is studied during the last half of the second semester, the work being designed and arranged especially with a view to cultivating the powers of close observation and accurate description of natural objects. More attention is given to plants than to the text-book, and each student is required to observe for himself their form, habits, actions and the arrangement of their parts, and to compare them carefully with each other.

After students have acquired an elementary knowledge of chemistry and other branches of Natural Science, the study of Systematic and Economic Botany is taken up in the second semester of the Sophomore year. The work of this semester consists principally in studying the characteristics of the different families of plants, their relations to each other, and the important plants of each. The instruction given is largely by lectures which are supplemented by means of living plants from the University greenhouse, and objects from the Museum. An outline is given of the sources and processes of manufacture of vegetable products used as food, clothing, drinks, oils, dyes, etc.

During the Junior year students spend two hours on alternate days in the Botanical Laboratory in the study of the Gramineæ, Compositæ, and a few other special orders of flowering plants, after which Vegetable Histology and Cryptogamic Botany occupy the remainder of the year. A considerable portion of the work in the Botanical Laboratory is done with the aid of microscopes, of which the University has a number for class-room use; but students are advised, whenever possible, to purchase instruments for themselves. Arrangements have been made

with manufacturers by which microscopes can be procured for students at a considerable reduction from ordinary rates.

During the last half of the Senior year special work in Botany may be taken as fulfilling the requirement of "Special Work in Science" as given in the synchronistic table—the particular line of work being optional with the student and the professor.

Excepting in the courses in Science and Letters the work in Botany concludes with the work of the Sophomore year.

In the "A. D. B" course a half semester of Horticulture and Landscape Gardening is given; and in the Medical School, a half semester of Medical Botany.

In the course in Agriculture special attention is given during the Senior year to the study of rusts, smuts, mildews and other injurious fungi.

### ENTOMOLOGY.

Instruction in Entomology is given almost entirely by means of lectures, for which the large collection of insects in the University Museum affords a valuable means of illustration. By the aid of the microscope, the student is shown the peculiarities of insect anatomy; and he receives instruction in insect transformation and typical forms, classification and geographical distribution. Especial prominence is given to the life history and habits of injurious species, and the methods of checking their ravages.

Students in the course in Agriculture receive instruction in Bee-keeping by a special course of lectures, and are made familiar with the work by practice in the Apiary.

#### ZOOLOGY.

## PROFESSOR SPENCER.

Upon three days a week during the first semester, there are lectures given in Elementary Zöology, illustrated by plates and specimens.

During the fifth semester a professor of the Medical School gives a course of lectures in Human Anatomy and Physiology and Hygiene.

In the ninth semester (first of Junior year) there is a more extended course of lectures in Zöology, covering the Anatomy and Physiology of the classes and orders of the animal kingdom. These lectures are illustrated by diagrams and actual specimens. For admission to this class students are required to have completed the course in Human Anatomy and Physiology, and are recommended to have also taken the elementary course in Zöology.

Text-book: Packard's Zöology.

# V. SCHOOL OF MATHEMATICS AND ASTRONOMY.

PROFESSOR FICKLIN.

Assistants, { WM. A. CAUTHORN, W. C. TINDALL.

The studies in this department are pursued in the following order:

FIRST YEAR.

First Semester.—Arithmetic, beginning at Percentage. Second Semester.—Elements of Algebra.

SECOND YEAR.

First Semester.—Elements of Algebra and Plane Geometry.
Second Semester.—Plane Trigonometry and Solid Geometry.

THIRD YEAR.

First Semester.—Higher Algebra.

Second Semester.—Spherical Trigonometry and Spherical Astronomy.

FOURTH YEAR.

First Semester .- Analytical Geometry.

Second Semester.—Differential and Integral Calculus.

FIFTH YEAR.

First Semester.—Method of Least Squares.

Second Semester.—Spherical and Physical Astronomy.

The branches of mathematics belonging to the first two years are taught by Professor Ficklin's assistants, and under his immediate direction.

Special attention is given to the mental discipline of the student. The development of the intellectual powers, and the formation and cultivation of correct habits of thinking and reasoning, by a constant reference to the Logic and Philosophy of Mathematics, are made the paramount object of every recitation.

Prominence is also given to the great practical utility of Mathematics. As far as possible, every principle demonstrated is also illustrated by some useful application of it to the arts.

The recitations are conducted with the aid of well selected text-books, and such additional illustrations and explanations as may be necessary are given, in order to impart to the student a thorough philosophical and practical knowledge of the subjects taught.

Original problems in the various branches are given to the student, to test his knowledge of the subject, and to make him self-reliant and independent.

During the course, lectures are delivered on the Philosophy, Utility and History of Mathematics.

Students in Astronomy in connection with the theory of the subject are required to go into the Observatory and apply their theories in the determination of Latitude, Longitude, Time of Day, Right Ascension, Declination, etc.

#### CLASS WORK.

Number of students in Arithmetic	105
Number of students in Elements of Algebra	137
Number of students in Higher Algebra	. 28
Number of students in Plane Geometry	56
Number of students in Solid Geometry	59
Number of students in Plane Trigonometry	58
Number of students in Spherical Trigonometry	8
Number of students in Spherical Astronomy	8
Number of students in Analytical Geometry	6
Number of students in Calculus	9
Number of students in Spherical and Physical Astronomy	12
Number of students in the Department	273

# THE OBSERVATORY.

#### Personnel.

Director, Joseph Ficklin.

 $Assistants, \begin{cases} \text{Thomas J. Lowry,} \\ \text{Wm. A. Cauthorn,} \\ \text{W. C. Tindall.} \end{cases}$ 

# GEOGRAPHICAL POSITION.

Longitude from Washington, 1 h. 1 m. 6 s. west. Latitude 38 deg. 56 m. 51.5 s. north.

#### DESCRIPTION OF THE BUILDING.

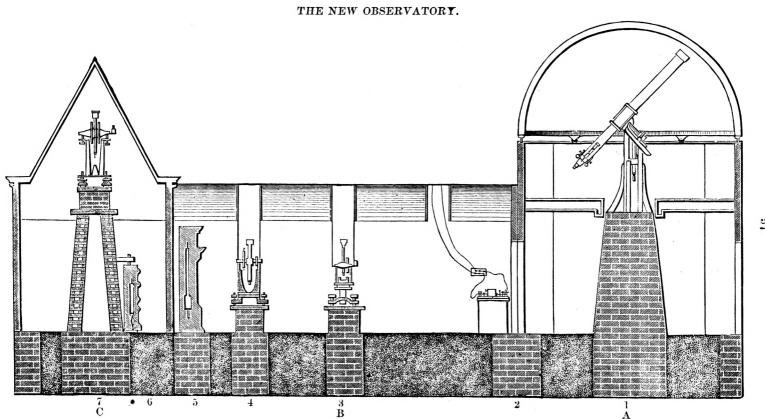
The Observatory Building stands on the beautiful eminence in the Campus near the Chalybeate Spring. The whole building is sixty-three feet long, from east to west, and fronts east.

The Equatorial room (A) is in the form of a regular octagonal prism, surmounted by a hemispherical dome. Its width on the inside is eighteen feet; the ceiling of the lower part is ten and one-fifth feet high, and the top of the dome is fourteen and two-thirds feet above the second floor.

The dome revolves upon six grooved wheels of cast iron, which run on a circular iron rail. Motion is communicated to the dome by a train of wheel work gearing into a rim of cogs attached to the interior face of the base plate of the dome.

The aperture in the dome, which is 22 inches wide and extends a little beyond the zenith, is closed by four shutters.

The pier for the support of the Telescope is built of hard brick laid in hydraulic cement. It extends 6 feet below the surface of the earth, and is 6 feet square at the base. That part of the pier which is below the first floor is in the form of a square prism, and is surrounded by a brick wall, which does not touch the pier, in order to prevent the communication of vibrations by the passing of carriages and wagons. The top of the pier is four feet square, that portion of it above the first floor being in the form of the frustum of a square pyramid. Upon the top of the pier is laid a square cap-stone, 4 feet square and 5 inches thick, which supports, by 4 bearings, the wooden stand on which the Telescope is mounted.



The Alt-azimuth room (C) is 13½ feet long from east to west,131-5 feet wide, and the ceiling of the lower part is  $9\frac{3}{4}$  feet high. It is surmounted by a roof in the form of a cone, which revolves on three cannon balls.

The aperture in this dome, which is 15 inches wide, is closed by two shutters. The pier, which extends 4 feet into the ground, is built of the same kind of material, and in the same manner as that of the Equatorial.

The transit room (B) is situated between the Equatorial room and the Alt-azimuth room. It is  $28\frac{1}{2}$  feet long from east to west, 131-5 feet wide, and 8 feet high. This room contains three piers, constructed as those already described, for the support of the Meridian Circle, the Transit Theodolite, the Sidereal Clock, and the Chronograph. There are two meridian observing slits 17 inches wide, one for the Transit Instrument, the other for the Transit Theodolite. These slits begin 4 feet 5 inches from the floor and extend through the roof, thus affording an uninterrupted view of the celestial meridian down to the horizon.

# DESCRIPTION OF THE INSTRUMENTS.

The instrumental equipment consists of a Telescope, a Meridian Circle, an Altitude and Azimuth Instrument, a Transit Theodolite, a Sextant and Mercurial Horizon, a Sidereal Clock, a Solar Clock, a Chronograph, a Tele-Spectroscope, and a Twenty-inch Celestial Globe.

The Telescope (1) is an equatorial refractor of  $7\frac{1}{2}$  inches clear aperture and 10 feet 7 inches focal length, made by Merz & Son, of Munich, Germany. The mounting is admirably executed, combining great delicacy with great strength and stability, and differs, in some respects, from that of any other instrument in this country. It is furnished with a filar and an annular micrometer, the wires of which may be illuminated, in either a bright, or dark field, at pleasure. There are six positive eye-pieces of the Ramsden form, varying in power from 100 to 570, five of Gundlach's Periscopic eye-pieces, with powers from 85 to 1016, and eight negative eye-pieces, with powers from 70 to about 600. The instrument is also furnished with reflecting prisms and sun-shades. The hour circle is 10 inches in diameter. It is graduated on silver to single minutes, and reads by two verniers to 4 seconds of time. The declination circle is 15 inches in diameter. It is graduated on silver to 10 minutes, and reads by two verniers to 10 seconds of arc.

The finder was made by Alvan Clark & Sons, of Cambridgeport, Mass. It has an aperture of  $1\frac{\pi}{4}$  inches and a focal length of  $17\frac{\pi}{4}$  inches. The reading microscopes were made by R. B. Gans, of Boone county, Mo. The telescope is furnished with a driving clock, by which any heavenly body may be kept apparently at rest in the field of view.

This telescope has an interesting history. It was ordered in 1848 from the establishment of Merz & Mahler, of Munich, for the use of Shelby College, Shelby-ville. Kentucky. It was received at Shelbyville in November, 1850, and cost, when mounted, \$4,000. It was mounted under the direction of Prof. Joseph Winlock, and used by him while he was a professor in that Institution. After Prof. Winlock went to Cambridge, Mass., he borrowed this telescope, and, in connection with Dr. B. A. Gould, established there the Cloverden Observatory. In "Loomis's Recent Progress of Astronomy," published in 1856, under the head of "Cloverden Observatory, Cambridge, Massachusetts." the following statement is made respecting our instrument, which was then the fourth in magnitude on the continent:

"The great telescope belonging to Shelby College was temporarily loaned to Prof. Joseph Winlock, and was removed to Cambridge, Massachusetts, where temporary accommodations were provided for it, and this establishment is known by

the name of 'Cloverden Observatory.'" \* \* \* \* \* \* ''Numerous observations on comets, and on some of the newly discovered planets have been made with this telescope by Dr. B. A. Gould and Prof. Joseph Winlock, some of which have been published in 'Gould's Astronomical Journal.' This great telescope has recently been returned to Shelby College."

In 1869 Prof. Winlock, who was then Director of the Observatory of Harvard College, went with his assistants to Shelbyville, Kentucky, and there used this telescope in observing the total eclipse of the sun, which occured on the 7th of August of that year.

The Meridian Circle (4) was made by Brunner of Paris. The object glass has a clear aperture of  $2\frac{1}{16}$  inches, and a focal length of 23 inches. The circle is  $10\frac{1}{2}$  inches in diameter. It is graduated on silver to five minutes, and reads by two verniers and microscopes to three seconds. This instrument has five vertical wires and one horizontal. This system of wires may be illuminated by light reflected from either of two silvered mirrors, one of which may be placed in the axis of the instrument, the other in front of the object glass. The eye-piece is furnished with a reflecting prism, and with sun-shades. There are two spirit levels belonging to this instrument, one of which is attached to the circle, the other a striding level to be used on the axis. The usefulness of this instrument has been greatly increased by the addition of a filar micrometer, made by W. T. Gregg, of New York.

The Alt-Azimuth Instrument (7) was made by E. & G. W. Blunt, of New York. The object glass has a clear aperture of 2! inches, and a focal length of 22 inches. The circles are 12 inches in diameter, and graduated to 10 minutes. The horizontal circle has four verniers with microscopes, and the vertical circle two; and each reads to ten seconds. This instrument is furnished with direct and reflecting eyepieces, a collimating eye-piece and sunshades. The system of wires and the arrangement of the levels are the same as in the transit instrument. The illumination of the wires is effected by means of a silvered mirror placed in the axis.

In the old observatory this instrument was mounted under an opening in the roof which allowed motion only in or near the meridian. It is now mounted under the dome at the west end of the new building. In this position it can be directed to any point above the horizon, and thus be made more serviceable than it could be in its old position.

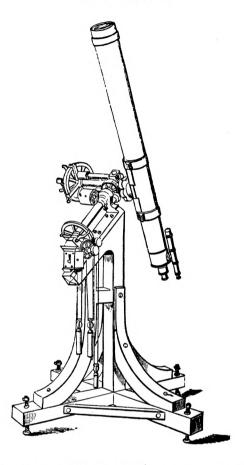
The Transit Theodolite (3) was made by Gregg & Rupp, of New York. The object glass has an aperture of  $1_{\frac{1}{8}}$  inches, and a focal length of 18 inches. The horizontal circle is  $10_{\frac{3}{8}}$  inches in diameter, and reads by a vernier to one-half a minute; the vertical circle is 8 inches in diameter, and reads to one minute. The magnetic needle carries a vernier at each end, by means of which the arc of the compass box can be read to single minutes. This instrument has two wires, illuminated in the same way as in the altitude and azimuth instrument. Belonging to this instrument is a strong portable tripod used for field work.

The Sextant was made by E. & G. W. Blunt, of New York. The arc is graduated on silver, and reads by a vernier and microscope to ten seconds.

The Solar Clock (6), which was made by Gregg & Rupp, of New York, has a mercurial pendulum.

This clock stands on a pier on the east side of that which supports the alt-azimuth instrument. This is the old Sidereal Clock, which has been converted into a mean-time clock by lengthening the pendulum.

#### THE TELESCOPE.



This cut is taken, by consent of the publishers, Messrs. Harper & Brothers, of New York, from Loomis's Practical Astronomy, a work that has been used as a standard for a long time in this Observatory. Comparing the cut with the Equatorial here, one would infer that it must have been intended to represent our instrument.

# RECENT ACQUISITIONS.

The New Sidercal Clock, the Chronograph, and two Astronomical Spectroscopes were purchased during 1883, from Messrs. Fauth & Co., Washington, D. C.

The New Sidereal Clock (5), used in connection with the Meridian Circle and Chronograph, has a mercurial pendulum with Dennison's gravity escapement, and Prof. C. A. Young's break-circuit attachment, which gives no spark, thus saving the contact points from oxidation. The rate of the clock is controlled by small iron weights put into a small cup attached to the pendulum rod. These weights can be added, and, by means of a small magnet, removed at pleasure, without stopping the clock.

The Chronograph is mounted on a brick pier near the eastern end of the transit room. The cylinder of the Chronograph is 7 inches in diameter, 14 inches long and revolves once in a sidereal minute. By pushing a button the speed of the cylinder may be doubled, an arrangement which is very convenient in exchanging clock-signals in longitude work. A sheet of paper fastened on the cylinder by metallic springs, is sufficient to contain the record of two hour's continuous work. The clock breaks the circuit on the even seconds, except that a break is made at the 59th second in order to mark the end of the minute. A signal pen pressing against the paper records the clock-signals and those of the observer. The pen carriage is moved by a screw whose time of revolution is the same as that of the cylinder.

The Spectroscope is arranged to be used either with diffraction grating or prism. The collimator and the view telescope have objectives of  $1\frac{1}{2}$  inches aperture and 12 inches focus. The collimator is connected with a draw-tube of the equatorial by means of four stiff rods fitted to an adapter. When the spectroscope is thus connected with the equatorial, the combination is called the Tele-Spectroscope.

McLean's Star Spectroscope consists of a cylindrical concave lens in front of a direct vision prism. This spectroscope is fitted to the equatorial by means of an adapter. For observing the spectra of the fixed stars, this instrument is more convenient than the large spectroscope.

The Observatory is connected by a loop with the lines of the Western Union Telegraph Company, thus furnishing the means for illustrating the method of finding the longitude by electric signals.

The present greatly improved condition of the Observatory is due to the liberality of the President, Dr. S. S. Laws, who, for the advancement of astronomical science, gave to the University the means to procure the telescope and put it in complete working order, and to move and enlarge the Observatory building.

The Board of Curators have established a prize in the form of a gold medal, to be known as "The Missouri University Astronomical Medal," to be awarded annually to that student who shall stand highest in Theoretical and Practical Astronomy.

# WORK DONE IN THE OBSERVATORY.

During the past year, in addition to the usual drill given to students of Astronomy in the use of the instruments, and the accommodation of many visitors, the usual observations for time, observations on sun spots, solar prominences, and the partial solar eclipse of March 16th, were made.

Telegraphic announcements of astronomical discoveries are now sent to this Observatory by Prof. E. C. Pickering, Director of Harvard College Observatory.

# VI. SCHOOL OF METAPHYSICS.

#### Professor Laws.

Psychology—Hamilton's Metaphysics, Mahan, Haven, Baine, Lectures. Logic—Jevons, Hamilton, Mill, Lectures. Ethics—Paley, Wayland, Alexander, Lieber's Political Ethics, Lectures.

Social Science-Lieber's Civil Liberty, Spencer's Sociology, Lectures.

Philosophy-Lectures.

The History of Philosophy-Schwegler, Lectures.

Notes on all lectures are required, criticised and graded for literary character, as well as for matter.

Æsthetics and Political Economy are taught in the English school.

Constitutional and International Law—The academic students join the law class in these subjects, and receive from that department instruction in the law of contracts.

# VII. SCHOOL OF ENGLISH.

PROFESSOR MCANALLY.

Assistant Mrs. Carr.
Assistant Professor Black.

#### COURSE OF STUDY.

Grammar and Composition. (Kellogg, Harvey.) Blackboard exercises. Dictations. Rhetoric. (Kellogg, Hart.) Study of Synonyms. Composition and Themes. Study of English Language (Trench.)

U. S. History. (Swinton.) 1. Settlement. (Bancroft.) 2. Revolution. (Bancroft. Hildreth.) 3, Political Development. (Johnstone. Statesman's Manual.) American Literature in Lectures.

English History. (Smith's Hume.) 1. Celtic and Roman Period. (Knight.) 2. Anglo-Saxon Period. (Turner.) 3. Norman Period. (Guizot's History of Civilization. Taine.) 4. Constitutional Period. (Hallam. Macaulay.)

Civil Government. (Townsend. Johnstone's Manual. Kent.)

English Literature. (Shaw.) Anglo-Saxon. (Corson's Hand-book.) Middle English. (March & Marsh.) Modern English. (Mill. Craik.)

Special Studies. Chaucer's Canterbury Tales—selections with critical remarks. Bacon's Essays. History of Drama (Doran.) Shakspeare (Hudson's edition.) Hamlet, Richard III, Lear, Romeo and Juliet, read in class with verbal and written criticisms. Milton's Paradise Lost. History of Journalism. Lectures with practical explanations of daily newspaper life. The Spectator, the London Times, the New York Herald. Historical style of Gibbon, Hume, Macaulay, Linguistic criticism and class readings. The modern novel, as illustrating changes in manners and customs. Dickens; influence on English legislation, Bleak House; on education, Nicholas Nickleby; on condition of criminal classes, Oliver Twist; as a caricaturist, Pickwick Papers. The Lake School Poets (Wordsworth), American Literature (Duykinck).

The course in Literature is supplemented by public lectures on the origin and history of English Literature.

Political Economy (Wayland). References: Adam Smith, Cairnes, George Tucker, Statesman's Year Book.

Anglo-Saxon. Grammar and Reader (Vernon), Readings from Alfred's Boethius, the Saxon Chronicle, Caedmon's Paraphrase, Beowulf, and the New Testament.

Complete Resume of English course.

General Reviews and Orations.

## NOTICES.

All new students, as a condition of admission to the institution are required to pass a satisfactory examination in English Grammar, and, if expecting to enter an advanced Academic Class, are examined on all the studies in the English course previous to that class.

A record of class standing is kept for each student, and his work is further graded by a regular monthly examination; while examinations, both written and oral, are held at the close of each semester.

On a grade below six the student fails to pass, and though, in exceptional cases, he may sometimes be allowed to go on with an advanced class, he can neither be admitted to an examination nor obtain a class grade until the deficiency is made up.

In order to secure the more thorough training in English, all the students in Academic classes are required, at the end of the year and before the regular class examination, to pass an examination in English Grammar, regard being had to its practical use rather than to technical difficulty.

Two terms of lessons in Elocution will be given during the year by a competent teacher.

Instruction in penmanship at any desired hour will be given to students deficient in this branch.

A special medal, known as the "McAnally Medal," is offered for competition in the Senior year. It is for the best Essay, Thesis or Poem by members of the Senior Class, competing under certain rules laid down by the founder of the prize. The subject for 1885 and 1886 is "Carlyle as a Husband."

# ENROLLMENT IN ENGLISH DEPARTMENT.

Classes.	1st Semester.	2d Semester.	Total
English Grammar (Mrs. Carr)	48		48
English Grammar	65		65
Rhetoric (Mrs. Carr)	67		67
United States History	45		45
English History	50		50
English History English Literature and Anglo-Saxon	72		72
Resume	13		13
Political Economy	10	64	64
Political Science	! • • • • • • • • • • • • • • • • • • •	92	92
Rhetoric (Mrs. Carr)		61	61
Literary Criticism (Mrs. Carr)		7	7
Totals	360	224	584

A course of lessons in Elecution will be given in the early part of the second semester by Messrs Fulton & Trueblood of Kansas City.

# VIII. SCHOOL OF MODERN LANGUAGES.

#### PROFESSOR BLACKWELL.

# PROFESSOR BLACK, Assistant.

The languages taught in this Department are German, French, Spanish and Italian. German is commenced at the beginning of the first semester; French, Spanish and Italian at the beginning of the seconds

The object of the professors in this department is to give the students a brief history of the countries speaking these languages, and, by a course of lectures, a fair knowledge of their literatures. The prime object is to enable the scientific student, at the end of his course, to read any works in these tongues. In addition, the student is drilled by frequent conversations, to understand the language when spoken, and encouraged to attempt replies, although little stress is laid upon the so-galled "Natural Method" of instruction.

#### GERMAN-FIRST YEAR.

First Semester.—Otto's grammar, exercises, conversations and composition. Second Semester.—Same continued; reading in prose and poetry.

### SECOND YEAR.

First Semester.—Die Jungfrau von Orleans, Maria Stuart, lectures, conversations and translations into German of short stories.

Second Semester.—Nathan der Weise, Egmont, lectures, conversations and translations continued.

#### FRENCH.

First Semester.—Joynes' Otto's Introductory lessons, Joynes' reader, conversations, lectures and composition.

Second Semester.—Racine's Athalie, Le Cid de Corneille, Le Misanthrope de Moliere, conversations, lectures, grammar and composition.

# SPANISH-ONE-HALF SEMESTER.

Spanish grammar-Knapp; Readings, Knapp.

# ITALIAN-ONE-HALF SEMESTER.

Curre's grammar—Select Readings.

The number of students enrolled in the classes in modern languages during the scholastic year 1884-5 is as follows:

Number enrolled in German	146
Number enrolled in French	91
Number enrolled in Spanish	15
Number enrolled in Italian	13

Total in modern languages...... 265

The work has been acceptably done by the students in general.

# IX. SCHOOL OF LATIN LANGUAGE AND LITERATURE.

#### PROFESSOR FISHER.

# PROFESSOR JONES, Assistant.

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

#### FIRST YEAR.

Harkness' Introductory Latin book; The Three Pronunciations of Latin by Fisher; Grammar, Reader, Composition through part I.

#### SUB-FRESHMAN-SECOND YEAR.

First Semester.—Nepos, Harkness' Cæsar, Composition to lesson 51, Grammar. Second Semester.—Virgil's Æneid (Greenough's), Cicero's Orations (Harkness), Composition to lesson 71, Prosody and Scanning, Classical Geography, (Ginn and Heath).

#### FRESHMAN-THIRD YEAR.

First Semester.—Cicero (pro Archia), Lincoln's Livy, Composition to lesson 89, Mythology.

Second Semester.—Anthon's Horace (Odes and Epodes), Harkness' Composition Completed, Prosody, Latin at sight, Antiquities.

#### SOPHOMORE-FOURTH YEAR.

First Semester.—Anthon's Horace (Satires and Epistles), Agricola of Tacitus, Latin at sight, Roman History, Bennett's Second Latin Writer, Grammar.

Second Semester.—Cicero's Tusculan Disputations, Latin at sight, Roman History, De Senectute, De Amicitia, Translations into Latin, Bennett's Second Latin Writer, Grammar.

# JUNIOR-FIFTH YEAR.

First Semester.—Plautus, Pliny's Letters, Latin Literature, Lectures (in Latin), Translations into Latin, Critical Study of the Grammar, Sight Translations.

Second Semester.—Histories of Tacitus, Selections from Latin Prose, Translations into Latin, Review of the whole Grammar, Lectures on Roman Literature (in Latin.)

# SENIOR CLASS.

Second Semester.—Selections from the Latin Poets.

Conversation and recitation in Latin in all the University classes.

Candidates for the Freshman class, who have pursued their preparatory studies in other institutions, will be examined in the following books or their equivalents:

Latin Grammar (including Prosody), Harkness' Latin Composition to lesson 71, four books of Cæsar, four books of Virgil (including Scanning), Cicero's Orations (four) Classical Geography.

The Appleton prize is offered for competition in the Sophomore and Junior years. It will be awarded in 1885-6 to the student who makes the best translation of Bunyan's Eighth Stage, beginning at the first and closing with the words "but yet said nothing to the shepherds."

A medal is offered in the Senior year. It will be given for the best Essay or Thesis in Latin. Subject for 1885-6. Plautus and Terence Compared.

# BOOKS OF REFERENCE.

Harper's Latin Dictionary; Smith's Dictionary of Roman Antiquities; Mommsen's History of Rome; Teuffel's History of Roman Literature; Ramshorn's Latin Synonyms; Becker's Gallus, Daubeny's Roman Agriculture; Guhl and Köner's Life of the Greeks and Romans; Grammars of Gildersleeve, Madvig and Roby; Fisher's Three Pronunciations of Latin.

The English pronunciation is carefully taught and strictly followed in the class-room.

# STUDENTS IN THE SCHOOL OF LATIN.

## ADMISSIONS BY SEMESTERS.

First Semester	
Second Semester	231
Total by Semesters	485
Whole number enrolled without duplication	304

The following members of the Senior Class in the Latin Department are worthy of honorable mention: W. C. Coons, W. S. Dearmont, Miss Estelle Lewright.

# X. SCHOOL OF GREEK AND COMPARATIVE PHILOLOGY.

#### PROFESSOR"FLEET.

# Assistant, Professor Jones.

The subjects taught in this Department are the Greek Language and Literature, the Geography, History, Mythology, and Antiquities of Greece and Comparative Philology.

In the preparatory classes the student is thoroughly drilled in the inflections of the language, and the forms are constantly impressed upon the memory by written translations from Greek into English, and from English into Greek. These written exercises, generally taken from the Grammar, are continued daily for the first two years. Throughout the rest of the course, translations from the best Greek authors are regularly made by the Professor, and the students are required to render these

back into the original. These exercises are criticised, and returned, and full explanations given of the principles involved. In this way the Syntax is illustrated by all the different constructions which occur in the language.

In the translation of the classic authors, a close and critical examination is made of the text assigned for reading, the peculiarities of the author's style are brought out, and the contents of the language, as illustrated in the light of Comparative Philology, are constantly discussed.

The requirements for entrance into the Freshman class, are as follows: Harkness' First Greek book, including the translation of all the exercises from Greek into English, and *vice versa*; Hadley's Grammar, used especially with reference to the verbs; four books of Xenophon's Anabasis, Jones' Greek Prose Composition.

### FIRST YEAR.

Second Semester .- Harkness' First Greek Book to Syntax.

### SUB-FRESHMAN-SECOND YEAR.

First Semester.—Xenophon's Anabasis, Hadley's Greek Grammar, Jones' Greek Prose Composition.

Second Semester.—Xenophon's Anabasis, Hadley's Greek Grammar, Jones' Greek Prose Composition, Classical Geography.

# FRESHMAN CLASS-THIRD YEAR.

First Semester.—Lysias, Prose Composition, Grammar, History.
Second Semester:—Herodotus, Prose Composition, Grammar, History.

### SOPHOMORE CLASS-FOURTH YEAR.

First Semester.—Homer (Iliad) Translations into Greek, Lectures on Grammar; Gladstone's Homer.

Second Semester.—Plato, Translations into Greek, Lectures on Grammar, Antiquities

## JENIOR CLASS-FIFTH YEAR.

First Semester.—Sophocles, Translations into Greek, Lectures, Comparative Philology.

 $Second\ Semester.$ —Thucydides, Translations into Greek, Lectures, Greek Literature.

#### TEXT-BOOKS.

Harkness' First Greek Book; Kuehner's Elementary and Hadley's Grammars; Jones', Jackson's, Sidgwick's Greek Prose Composition; Baird's Classical Manual; Goodwin's Moods and Tenses; Tozer's Classical Geography; Fyffe's History of Greece; Mahaffy's Old Greek Life; Jebb's Greek Literature; Peile's Comparative Philology; Long's Classical Atlas; Yonge's English-Greek Lexicon; Liddell and Scott's Greek-English Lexicon.

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#### REPORT.

The number of students in the Department of Greek and Comparative Philology during the year 1884-5:

Junior Class	7
Sophomore Class	•6
Freshman Class	11
Sub-Freshman Class	17
Preparatory Class	24
Greek Life	1
Total by Classes.	66

# XI. SCHOOL OF HEBREW LANGUAGE AND SEMITIC LITERATURE.

# PROFESSOR BLACKWELL.

This Department is concerned with the study of the Hebrew Language and Literature, as a means of exploring the origin and tracing the development of modern civilization, of the sciences of government, law and ethics. The Hebrew, as containing the oldest remains of a literature which is the heritage of humanity, is chiefly considered. The course is arranged as follows:

First Semester.—Hebrew Grammar, including cranslations from English into Hebrew, and Hebrew into English, both oral and written; Histories of Egypt, Chaldea, Babylonia, and of the Medo-Persian Empire. Text-books: Green's Elementary Grammar, and Rawlinson's Ancient History.

Second Semester.—Reading and Analysis of the Hebrew Language, including selections from Genesis, Joshua, Chronicles, the Psalms, Isaiah and Ezekiel; the Hebrew accent and prosedy; the growth, limit, style and purpose of Hebrew literature. Text-books: Green's Larger Grammar, or Deutsch's, and Gesenius' Lexicon.

Attention will be given to the later complex development of the Hebrew language, as exemplified in the Talmuds, the Targums, Maimonides, and the Rabbinical texts.

Other Semitic tongues belonging to this Department, in which instruction may be had, are the following:

- 1. The Syriac language. The course will include the study of Uhlemann's Grammatik und Chrestomathie, the Peshito Version of the New Testament, and the Chronicle of Bar Hebraeus.
- 2. The Arabic language, in ancient and modern materials. Text-books: Palmer's Arabic Grammar, Catafago's or Lane's Lexicon, White's Reading Lessons, Selections from the Koran, and Ibn Khaldun.
- 3. The Chaldee, the Samaritan and the Æthiopic languages will each receive attention; the Chaldee, by reason of its likeness to the Syriac, and its occurrence in detached passages of the Hebrew Bible, the Samaritan, by reason of its version of

the Pentateuch, and the Æthiopic (with the Amharic) on account both of its Old Testament version and its peculiar relations to the other members of the Semitic family.

Candidates for admission to this Department must pass a satisfactory examination in English Grammar.

Report.—The following is the report of the Department of Hebrew and Semitic Literature in the University of Missouri for the scholastic year 1884-5:

The number of students enrolled in the Department of the Semitic Languages and Literature for the scholastic year 1884-5 is twenty-two, twenty-one of whom passed the examinations. This Department grows in strength from year to year in respect to the class of students who seek its instructions.

In addition to the ordinary labors of this Department lectures were given to the Normal classes on the subjects of education in Palestine, India and China in ancient and modern times.

# LADIES DEPARTMENT.

Mrs. O. A. CARR, PRINCIPAL.

The Board of Curators of Missouri State University recognizing the justness and the national importance of the higher education of woman, opened to her in 1872, by act of Legislature, the doors of Missouri State University, thus placing her with regard to educational advantages, on an equality with the young men of the State. Five years, however, previous to her admission to all the departments of the University she was admitted to the classes of the Normal Department. As the number of young women attending the University multiplied year after year, there was a growing need of special provisions for them. This increasing want suggested the appointment, in 1879, of a lady principal, in which capacity I have the honor to preside. I also share the class-room labor of the English Department.

In submitting to you my report for 1884-5, I rejoice to say that the provisions of this department of service have been duly appreciated by the young ladies, and that to their increasing confidence and hearty co-operation is largely attributable; whatever success I may have attained in my supervisory work. My association with them this year has been very pleasant to me, and, I trust, in some measure, profitable to them. It is highly gratifying to me to be able to state that, as a rule, they have been quiet and lady-like in demeanor, giving evidences of development in genuine womanhood.

# UNIFORM.

It is desirable, for many reasons, that the dress of the young women be simple and inexpensive, Simplicity in dress, right in itself, is peculiarly becoming in a student, for it saves time, money and thought to be concentrated to higher uses. Again, it is desirable that the young women identified with the University be distinguished from all others. By the adoption of a uniform this can be readily and

effectively accomplished. Therefore, to avoid extravagance and to disarm criticism, all young ladies attending the University are required to adopt, as their daily attire, (the weekly and special holidays excepted), the following uniforms: A walking suit of black alpaca or cashmere with trimmings of the same color. During the first four weeks of the first semester, and the last four weeks of the second semester, a white waist or basque may be substituted for the black waist or basque. The style of the fall and winter hat will be announced at the opening of the first semester of each collegiate year; the style of the spring and summer hat will be announced the first or second week in April of each year. In order to secure perfect uniformity, the order for all hats required will be given by the principal, and one order being given for all, the cost for each will be diminished. The hats for the entire collegiate year will not cost more than \$4, possibly they will cost less. This year they have cost less than \$3.50.

Each young woman must be provided with a water-proof cloak, with an umbrella and with rubber overshoes. In the long and rigorous winters of this climate, it is imperative that our lady students take every necessary precaution toward the preservation of their health.

The above regulation dress is prescribed by the faculty, and made a condition of admission or continuance in the institution, under the special authorization of the Board of Curators, and a penalty of ten demerits is entered for each day's violation of this rule; and it will be borne in mind that 100 demerits exclude the student from the institution, and 25 debar from all public appearances in the Literary Society exhibitions or contests.

#### CALISTHENICS.

Believing that the physical deformity and degeneracy of the American woman are largely attributable to her inactivity, it is deemed necessary to require all young ladies attending the University to engage in Calisthexic exercises during one semester, unless some reason justifying exemption therefrom be presented.

That Gymnastic and calisthenic exercises are good only to produce the athlete or acrobat, is a prevalent error, grounded in a misapprehension of the varied character of the exercises. Calisthenic exercises are intended to remove special local distortions. The tendencies of our modern life to the contraction of lung capacity have led to a prevalence of pulmonary weakness. Let Calisthenics in our schools direct its attention to that evil, then will it prove a national blessing in elevating the physical tone of our people.

With the exception of one year, when the young ladies were allowed the use of my piano, we have been without the delightful stimulus of music in our Calisthenie movements. We trust that our generous Board will not longer delay in providing us with a piano, for Calisthenics cannot accomplish its legitimate end without that exhibitation and enthusiasm that come through the influence of music.

The Calisthenic training of the first semester is supplemented the second semester by the more severe and effective gymnastic and military drill, under the direction of the Professor of Military Science and Tactics. This is a new feature in the physical training of the girls, and the test thus far justifies the prophecy, that the new drill will secure results that never could be reached by Calisthenics alone.

## LITERARY SOCIETY.

The young women have one literary society, the Philalethean. The present year has been one of prosperity to them, and the exercises of the last open session

of their society, especially the original exercises—the addresses and essays—were unusually creditable.

Through the late magnificent additions that have been made to our University buildings, the Philalethean Society has been provided with a larger and more convenient hall; and for this reason and others, it is highly probable that the Philalethean membership will next year be largely increased.

#### Music.

To all students, who have desired to study music—vocal and instrumental—facilities have been afforded. Professor F. Pannell, who was Principal of the Music Department in Christian College for twenty-five years, and whose reputation extends beyond the State, has, during the year, had charge of a vocal and instrumental class composed largely of young ladies and young gentlemen from the University. The young ladies especially rejoice over this new provision, and quite a number have availed themselves of the instruction that Prof. Pannell is so competent to give. His charge for vocal class-drill is almost nominal, and for instrumental instruction very reasonable.

If he were provided in the University building with a room in which he might teach instrumental music, I am confident that a larger number of girls would be benefited by his instruction.

## INSTRUCTION IN THE SCHOOL OF ENGLISH.

The following is a statistical report of the classes of the English Department that have been under my instruction during the year:

CLASSES.	1st Semester.	2d Semester.	Total
English Composition. Rhetoric Bhetoric Literary Criticism	48 67	61 7	4 6' 6
Totals	115	68	18

Each of these, except Literary Criticism, was only one division of a class.

The uniformly polite attention of my classes in the recitation room, and my pleasant association and harmonious working with the courteous Principal of the English Department, I deem worthy of record here.

## GIRLS' COURSE IN ARTS.

This course is equivalent in work and culture to any one of the other academic courses, yet it is identical with neither. In this way it is intended to avoid the fallacy of confounding co-education with identical education. This course is made up substantially of studies selected from the various academic courses previously established, with additional work in literature, composition and criticism, and diversified by studies peculiarly adapted to the culture of woman, such as calisthenics, music, physiology, domestic chemistry and economy.

Believing that women are able to meet the demands of the case, the Girls'

Course in Arts is made co-ordinate in rank with the other academic courses, their equivalent in acquisition and their equal in honor, and it takes its place by them in the Synchronistic Table.

The degree of A. D. B. (Artium Domesticarum Baccalaurea) is conferred on those students who complete successfully the studies prescribed in this course, and its graduates will have all the privileges and immunities extended to the graduates in the other academic courses. Only young ladies are admitted to this course and to this degree.

This Girls' Course in Arts is optional, but thus far its history is that of similar courses in other institutions; that is, it is more popular with the young ladies than any other of the Academic Courses. Of the whole number of girls enrolled this year and last year for the various academic courses, a large per cent. were enrolled for the Girls' Course in Art. This year there are four lady candidates for graduation in Academic Courses; and it a significant fact that two of the four are candidates for graduation in the A. D. B. Course. Among the lady students there are three candidates for graduation in the Elementary Normal Course, and three for graduation in the Academic Normal Course.

The establishment of a special course for girls has tended to increase their number in the University, and this tendency will necessarily strengthen as the merits of the new course become better known.

Every year the number of letters of inquiry increases, so that my correspondence has become no small part of my work. This I regard as an encouraging feature; for I cannot too strongly emphasize the desirability of girls, who contemplate attending the University, corresponding with me on the subject. It saves them from embarrassment in many ways.

The number of young ladies attending the University this year is seventy-one. Through the appropriations made by our Legislature we have increased facilities in the direction of the Chapel, class-rooms, society halls and study halls. In these improved facilities our girl students participate; and they are especially encouraged in having an enlarged society hall and study hall. Our State has done nobly; but let our next General Assembly make an appropriation for the erection of a building meeting the requirements of a home for girls and a conservatory of music in connection with her University, then will she greatly multiply the number of its lady students, and make it the dispenser of a greater good to the State and to the nation.

# II. The Professional Schools

OF THE

# MISSOURI UNIVERSITY.

XII.-1. Agriculture-Agricultural and Mechanical College.

XIII.-2. Pedagogics-Normal College.

XIV .- 3. Law School.

XV .-- 4. Medical School.

XVI.-5. School of Mining and Metallurgy.

XVII.-6. Engineering School.

XVIII .- 7. School of Military Science and Tactics.

XIX .- 8. School of Art.

XX.-9. Commercial School.

The primary aim of the Academic Schools of Science and Language (I—XI) is culture; that of the Professional Schools (XII—XX) is practice. Self is the end of culture, but self is the instrument of practice. The academic training views man himself as the end; but the professional training views the man as the means, and the calling, (as farming, teaching, law, medicine, mining, engineering, art, etc.,) as the end or business pursuit for which he is to be fitted. The academic or general training, fits for no line of business in particular, but it furnishes culture as the condition of the highest attainment in any special vocation. The man, cultured, has more fullness and strength, as a specialist, than the same man uncultured.

But as all kinds of culture have not an equally important bearing on every line of activity in life, there is occasion for discrimination and choice, as to the subjects to be pursued in the Academic Schools, when any one of the professional or business courses is in contemplation. Hence, there are arranged, as will be seen in the Synchronistic Table, several under graduate academic courses, or curricula, for the convenience of students in conforming their efforts to this natural principle of selection. As a matter of fact and of experience, it is found that a student usually accomplishes very little till a settled and definite purpose presides over his movements. The energies of youth are limited; and hence, to qualify them for life's work, which is the great aim of scholastic education, as much definiteness as is practicable should be given to their efforts to save them from waste.

In every properly arranged educational institution, the whole course of study is a crystallized selection. The idea that a university is an "institution where any person can find instruction in any study," is visionary. No such institution now exists, ever has existed, nor, from the nature of the case, ever can exist. A selection of those subjects, and of those practical or professional activities, which alone have been deemed most effective in conserving, improving and transmitting the civilization of any age, have been singled out for school work. In this elective sense, and in this sense alone, every age has taught what it knew and all it knew. In former days, the physical sciences were not taught, because they were not known; they are taught now because they were known; and a proper interpretation of the senses in the order of the acquisition of knowledge, as chronologically preceding abstraction, assigns these sciences in their phenomenal and empirical aspects, a place in the foreground. The sciences deal with the subject matter of language, and rationally precede its forms.

It is important to note that the word science, here used respecting the schools of the University, is not to be understood in its popular and etymological sense, as designating simply knowledge or information, whether in a miscellaneous or in a classified form, but technically and strictly as a term of art, in which sense, Science is a systematic classification of the laws of phenomena.

Progress in science, according to this definition, can only be effective, either by adding to the stores of our knowledge a new fact, referable to known laws, or by adding a new law. It is the business of the teacher, as such, to put his pupils in the possession of the sciences as known, rather than to add thereto.

There are two thoughts which seem to be entitled to preside over the department of language. The first is, that the professors should be able to think, write and speak the leading languages which they teach. What would be thought of a professor of English who did not have such a mastery of it; and this case is not peculiar. The second thought is, that in language, as in science, the mind is fed more by the contents of the forms than by the forms themselves. It is truth possessed, and not truth pursued merely, that disciplines and unfolds the powers of the soul. Hence, the five chairs of language, by teaching the literature, antiquities and history of the peoples who used these forms of speech, map out the world's history, especially so far as it has been bound up in that of our race. Man, who has thus revealed himself, is the most conspicuous part of nature, and hence the schools of language are, by way of eminence, in a popular sense, schools of natural science.

As the languages pre-suppose their subject matter in the sciences, so the professional courses of instruction pre-suppose, as their natural antecedents, the academic courses. The foregoing tabulated and textual exhibit of the academic and professional schools, is believed to rest on a rational method.

It will be observed that our group of professional schools, and their association with the academic group, is somewhat unique, although it is in the general line of our American Universities, however unlike those of Europe. The distinguishing features of our University, which are of home growth, including the internal autonomy, adjustment and dove-tailing of the associated schools, give it an adaptation to our wants, institutions and condition, such as no exotic possesses. Our disposition, therefore is to apologize for these unique characteristics, not by way of deprecation, but only, in the old sense of the word, and that is, by way of defense. This, however, is not the place for discussion, but only for statement and announcement.

# XII. AGRICULTURAL AND MECHANICAL COLLEGE.

# FACULTY.

SAMUEL SPAHR LAWS, LL. D., PRESIDENT.

Professor of the Sciences of the Mind.

JEREMIAH WILSON SANBORN, B. S., DEAN.

Professor of Agriculture, and Farmer.

JOSEPH FICKLIN, Ph. D., Professor of Mathematics.

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

SAMUEL M. TRACY, M. S.,
Professor of Botany, Entomology and Horticulture.

THOMAS J. LOWRY, S. M., C. E., Professor of Surveying.

DAVID R. McANALLY, A. M., Professor of English.

CONRAD DIEHL,
Professor of Free Hand and Mechanical Drawing.

BENJAMIN F. THOMAS, Ph. D., Professor of Physics.

J. W. SPENCER, B. A. Sc., Ph. D. (Gott.), F. G. S., Professor of Geology and Zoology.

L. R. TAFT, B. S.,

Assistant Professor of Horticulture and Superintendent of Hot Houses and Horticultural
Grounds.

PAUL PAQUIN, V. S., (D. V. S.), Professor of Veterinary Science.

> C. M. WOODWARD, B. S., Farm Superintendent.

# THE OBJECT AND ORGANIZATION OF THE SCHOOL.

Act of Congress, 1862, "donating lands to the several States and Territories for the benefit of agriculture and the mechanicarts:"

"Sec. 4. And be it further enacted, That all monies derived from the sale of the lands aforesaid by the States to which the lands are apportioned, \* \* \* shall constitute a perpetual fund, the capital of which shall remain forever undiminished \* \* the interest of which shall be inviolably appropriated by each State which may take and claim the benefit of this act, to the endowment, support and maintenance of at least one college, where the leading object 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.

In pursuance of the act of Congress, from which the foregoing citation is made, we find the following proceeding recorded on the part of Missouri:

Be it resolved by the General Assembly of the State of Missouri, That the said act of the Congress of the United States is assented to and accepted by the State of Missouri, with all the conditions, restrictions and limitations therein contained; and the faith of the State of Missouri is hereby pledged to the faithful performance of the trust thereby created. Approved March 17, 1863.

There are several things which, in this immediate connection, should be carefully noted:

First. The "one college" contemplated in this act of Congress was, 1870, by the General Assembly of the State of Missouri, constituted and established "as a distinct department of the University of the State of Missouri." The Mining School is a branch of this department. This incorporation of the Agricultural College into the University laid the foundation of the present internal organization, distribution and administration of its educational work.

Second. The sole business of this one college, to be endowed and maintained by the moneys derived from the sale of these lands, as provided in terms by the law itself, is "TO TEACH." The performance of the trust created and the redemption of the pledge grounded thereon, were to be accomplished by teaching. It was an educational institution that each State and Territory was to be aided in creating and these moneys cannot, therefore, be legitimately used otherwise than in the immediate interest of education.

Third. The kind of education to be promoted is also plainly indicated, to wit: "Liberal and practical education."

Fourth. The subject matter of this education is also designated: First, "military tactics;" second, "scientific and classical studies;" third, "such branches of learning as are related to agriculture and the mechanic arts." It is not said that agriculture and the mechanic arts are to be engaged in as matters of business and commerce, but that those studies which would qualify for these pursuits were to be taught the pupils of this "one college" as its "leading object."

Fifth: The persons contemplated as the beneficiaries of this teaching are "the industrial classes in the several pursuits and professions in life."

It is obvious, therefore, that this law cannot be fairly construed as intended to supercede and push aside the work of education as previously conducted in our higher schools of learning, but only as supplementing that work, especially by utilizing the practical results of the sciences of the present. It was not designed to radically subvert and displace the old by an empirical and untried substitute, but in a conservative way to modify it and more effectually adapt it to the present. It was not intended to destroy, but to conserve and improve the old. The above notation of the language of the law makes this sufficiently obvious without argument.

However, it is undeniable that there were not a few, at the time of the new movement embodied in this act, who favored and fought for a total subversion and displacement of the old; but they utterly failed of their purpose. It is believed that their failure was a fortunate thing for themselves as well as for others. The utmost that was attained or that could have been attained, was that these new colleges or departments should have it, not as an exclusive or sole object, but only as "the leading object, to teach such branches of learning as are related to agriculture and the mechanic arts," the legislatures being left free respecting the organization and detail of this work.

Now, it is in precise accordance with the provisions of the law and with the history of the case that the Agricultural College of Missouri has been organized by Missouri as a Department of the State University and is administered, as embracing: both an academic and a professional or business course. The general culture of a liberal educations is thus provided, and at the same time, the special culture of industrial pursuits. In its course of general culture "scientific and classical studies" are properly included. Military tactics are also included. The industrial courses in agriculture, engineering, etc., are especially emphasized. But the question may still recur, who are "the industrial classes" contemplated as the recipients of these general and special educational advantages? It is not said that only those of the field, the mine or the workshop, but all those "in the several pursuits and professions in life." Yes, all workers in the so called professions are here by law placed among the industrial classes entitled to the benefit of this trust. Perhaps the following brief extracts from Professor Huxley may be of some interest and command general respect in aid of a just understanding of this language of the law. The following extracts are from an address by him on Technical Education before a Working Men's Club and Institute, 1877. He says: "In the course of the last ten Years, to go back no farther, I am afraid to say how often I have ventured to speak of education, from that given in the primary schools to that which is to be had in When you did me the honor to ask me to address you, the universities. an unexpected circumstance had led me to occupy myself seriously with the question of technical education, and I had acquired the conviction that there are few subjects upon which it is more important for all classes of the community to have elear and just ideas than this; while, certainly, there is none which is more deserving of attention by the Working Men's Club and Institute Union. Technical education, in the sense in which the term is ordinarily used, and in which I am now employing it, means that sort of education which is especially adapted to the needs of men whose business in life it is to pursue some kind of handicraft. The fact is, I am and have been, any time these thirty years, a man who works with his hands—a handicraftsman. In fact, if the most nimble \* \* fingered watchmaker will come to my workshop, he may set me to put a watch together, and I will set him to dissect, say, a black beetle's nerves. I do not wish to vaunt, but I am inclined to think that I shall manage my job to his satisfaction sooner than he will do his piece of work to mine. In truth, anatomy, Which is my handicraft, is one of the most difficult kinds of mechanical labor, involving as it does, not only lightness and dexterity of hand, but sharp eyes and

endless patience. \* \* A similar requirement is made upon all students of physical science. The astronomer, the electrician, the chemist, the mineralogist, the botanist, are constantly called upon to perform manual operations of exceeding delicacy. \* \* Mobile, and yet steady hands are more and more in request in the workshops of science. Indeed, it has struck me that one of the grounds of sympathy between the handicraftsmen of this country and the men of science, by which it has so often been my good fortune to profit, may, perhaps lie here." At the conclusion of his address, he makes special note of the fact that he had omitted to speak of, "The professional education of managers of industrial works."

Thus far Mr. Huxley whose idea of the educational work of the State is that of a ladder with one end in the gutter and the other in the University.

Now, the thing to be particularly remarked in this connection is, that the altered and improved condition of the manual and industrial occupations, properly so called, is supremely due to the progress that has been made in the physical sciences. There is no vocation in the world of which this can be said with greater emphasis than of farming. The old style of farming by rule of thumb is breaking down by not paying and by disgusting the intelligence of the rising youth of this active age; and the new style of farming in the light and under the guidance of scientific intelligence is adding new charms and new gains and ambitions to country life. Hence, the agricultural feature, as most intimately and extensively related to the prosperity of our State, is legitimately made the "leading" feature in the outcome of the organization of the Industrial Department of our State University.

# THE OBJECT OF THE SCHOOL.

It must be understood and borne in mind that the complete course of the Agricultural College is both Academic and Professional. The Academic part of the work is arranged in the four columns of the Table of Courses with their respective degrees of Bachelor of Arts, of Science, of Letters or of Domestic Arts for the young ladies.

The Professional Course in Agriculture may be taken first or last at the option of the student, or either may be taken without the other. This gives comprehensiveness, and flexibility, and also shows that the great mass of the work done in the University is in the interest of the citizen farmer.

The Agricultural and Mechanical College has organized a strictly industrial course of studies. Its central purpose is to educate the farmer, rather than the citizen, to give a special rather than a general education, standing in the same relation to the art of farming that the Medical College does to the medical profession; that the Law School does to the legal profession; or that a School of Engineering does to the practice of the art it seeks to give proficiency in; or a Normal Course to the work of teaching.

While the central aim is not to educate the man, but the specialist, very happily, the course of studies that is best fitted to impart the special information essential to the fullest success in farming, covers those sciences well calculated to inform, and to give pleasure and satisfaction to the mind, as well as to enlarge and ennoble it with general culture, for farming covers not only problems in the inanimate world, but deals very largely with nature in its living forms, the knowledge of the laws of which gives information essential to a good general education, yet knowledge that enables him to direct those laws in his interests.

It will be noticed that students enter at once on the course in Agriculture without being delayed for several years on Elementary Academic preparation. As this Agricultural Course is eminently a course of applied science, and as this applied study of the sciences brings its own best preparation and discipline, no hesitation is felt in making this departure from the more usual method, inasmuch as the graduates from the Agricultural Course, if they desire and their means permit, can subsequently add to their professional education the general education, provided by the college for their benefit in common with all other students. By this plan the farmer is made first and the general scholar and citizen afterwards, and a better and more manly result is reasonably anticipated and surely attained. Students aiming at other callings, go to work at once on their professional studies as soon as they are in possession of the necessary elements for doing so. It may be said that this method is at issue with and inverts the practice of other Agricultural Colleges. This is true, but of no consequence if it be, as it is in fact, in harmony with the sound educational principles which the experience of this practical age has sanctioned.

Our youth gain both time and strength by this method, and they pursue the after course of culture, provided in the Agricultural College of the University, with more zest and profit than they do by wearisomely wading through it as preparatory to their agricultural studies for which actual experience in the school house and on farms have so well prepared them before coming here.

By this arrangement the graduates from the Professional part of the Agricultural College Course have the privilege of pursuing their subsequent studies as *Post Graduates* which gives them certain advantages and also relieves them from some charges.

Moreover, by this method no young man is cut off or debarred from the direct practical advantages of a special Agricultural Course; and when he has at once and in the shortest time acquired that, it is his option whether he will or will not continue his general studies.

In the prosecution of the design of the course of studies, both the science and art of agriculture are taught. The former by lectures, supplemented by textbooks; the latter by actual field work. The field work is so directed as to exemplify the former and to familiarize the student with all the practical details essential to the pursuing of successful horticulture and general farming.

Under their appropriate headings the facilities of the college for prosecuting its purpose will be observed.

# APPRECIATION OF THE WORK.

It must be carididly stated that our farmers in Missouri have not yet shown an adequate appreciation of the work which the Agricultural College is organized and qualified and endeavoring to do for the promotion of their highest financial and social interests. This is made manifest by two facts: 1. It is almost impossible to induce the young people who come to us from the families of farmers to enter the Special Course of Education in Agriculture—in a word, to pursue "such branches of learning as are related" most intimately to the business of their lives. They think that they already know enough about farming, and doubtless they do know enough about farming, old style, by rule of thumb. Not yet having learned from a knowledge of the sciences that there is anything better, they seek to educate themselves away from their farms, instead of educating themselves back to their farms, armed with the intelligence and superior strength that the business course of the Agricultural College would give them. They crowd into the course of general culture to the neglect of the special professional course. Not five per cent. of them

can be induced to take the technical course, specially designed to give them an education and training for home life on the farm. It has been earnestly desired to put the excellent Agricultural College Farm into good working condition, not as a commercial affair but as a means of education that might exert a wholesome influence in drawing the students into the agricultural course. 2. The other evidence of a lack of appreciation is found in the failure of the farmers in the General Assembly to unite their suffrage on a liberal support of the special claims of the farm for which not a dollar has ever been appropriated. But it is believed that this state of things cannot last long. Illinois, on the east, and Kansas, on the west, stand ready to appropriate to their boards of Agriculture and Agricultural Colleges all that those in charge of them ask for. Yet, the organization of the work in Missouri is better than in either of those States, both for economy and also for the great public and moral advantages arising out of the broad associations of our young people in their farm life from tion. The isolation, during this time, of our youth devoted to years of educatheir fellows who will enter other pursuits, would be a misfortune to them and to the community at large, to be realized too late to be remedied.

The general course is chiefly demanded by the patrons of the college and the law forbids explicitly the exclusion of the studies embraced in it. But this general course is given a practical turn that the old education did not have. The income of the Agricultural College moneys is just as legitimately used in teaching the general as the special course. Our effort is to give increased prominence to the special or business course in agriculture.

In the new improvements a magnificent workshop, with power, has been provided. It is a primary laboratory of the relations of the sciences to the mechanic arts.

It is firmly believed that if our farmers and industrial citizens fully understood the advantages of this school, especially in agriculture, that it would be overrunwith students.

By this arrangement the graduates from the Professional part of the Agricultural College Course have the privilege of pursuing their subsequent studies as Post Graduates, which gives them certain advantages and also relieves them from some charges.

Moreover, by this method, no young man is cut off or debarred from the direct practical advantages of the special Agricultural Course; and when he has at once and in the shortest time acquired that, it is his option whether he will or will not continue his general studies.

In the prosecution of this course of studies, both the science and the art of agriculture are taught. The former, by lectures, supplemented by text books; the latter, by actual field work. The field work is so directed as to exemplify the former and to familiarize the student with all the practical details essential to the pursuing of successful horticulture and general farming.

Under their appropriate headings the facilities of the college for prosecuting its purpose will be noted.

## TERMS OF ADMISSION.

Candidates for admission must pass satisfactory examinations in arithmetic to percentage, and in geography and elements of English grammar.

Candidates for advanced standing must pass examinations in those studies that have been pursued by the class which they propose to enter. This can be learned from the course laid down in the following table.

## LECTURES IN AGRICULTURE.

Instruction in agriculture is given mainly by lectures, text-books being used in connection with the lectures when they are available. These lectures cover the history and development of agriculture through early, mediaval and modern times; the location, construction and sanitary condition of farm buildings; farm fences, and implements; drainage; tillage; soils, their origin, composition, physical properties, and how to improve them; plant nutrition, or fertilizing the soil both by yard manure and chemicals; farm crops, their history, improvement by breeding and selection, their cultivation, harvesting, and preservation; veterinary science; farm law; stock feeding, covering the laws of animal nutrition and the art of feeding; dairying, its art and science, in brief, the field of general agriculture and horticulture is covered.

#### EXAMINATIONS.

Examinations will occur whenever a subject is completed, and at the end of each semester.

# COURSE OF STUDY.

Hour.	JUNIOR YEAR.—First Semester.
I or VI. II. III. IV.	English Composition. Agriculture in its practical and scientific processes. Physics.  { Zöölogy 3-5. { Anatomy, Physiology and Hygiene 2-5.
	Second Semester.
I. II. IV.	Agriculture in its practical and scientific processes.  Chemistry.    Botany \frac{1}{2}.    Drawing \frac{1}{2}.  Horticulture, Landscape Gardening, Forestry, etc.
	SENIOR YEAR.—First Semester.
I. III. IV.	Agriculture in its practical and scientific processes. Agricultural Chemistry and Laboratory. Mathematics and Land Surveying. Practical Geology and formation of soils. Entomology and Bee culture.
	Second Semester.
I. III. V.	Botany—Systematic and Economic. Agriculture. Veterinary Science.  { Book-keeping 3-5.  { Mental Science 2-5.  Cryptogamic Botany.

#### DEGREE.

The degree of B. A. S. (Bachelor of Agricultural Science) will be conferred upon those who complete the course and pass the final examinations.

All students receiving a degree must prepare a thesis on some agricultural subject to be presented by the college.

#### EXPENSES.

The expense of the course is very moderate and within the means of any young man desiring to complete it. A detailed statement of expense will, from the index, be readily found elsewhere in this catalogue. From the following statements it will be seen that room rent is free and opportunity for work is provided for and required of the professional students of the Agricultural College.

Museums, Apparatus and Farm Library.—A small but valuable library of farm books has been collected to which additions are soon to be made. In addition to the Agricultural library, the students of the Agricultural College have access to the University library.

Museum.—An Agricultural museum is being organized that will be of much assistance in class room work. A valuable geological and zöological collection, connected with the University, will render like assistance.

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

Club Houses.—A group of club houses on the farm will accommodate a large number of students, and are devoted to their free use to facilitate the instruction given in field work. It is desired that students avail themselves of rooms at the club house. The students of Agriculture will have the preference of rooms in the Agricultural Boarding Club buildings, which are situated on the Horticultural Grounds, provided application be made before the opening of the First Semester, Sept. 8, 1885; the charges will be paid the same as by other students, but to those students who continue their agricultural studies and course as prescribed, to the end of the year, the room rent will be refunded.

Greenhouse.—A greenhouse 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. The former consists of 600 acres of land of varying quality and is well adapted to its purpose of instruction and experiment work. The students will be required to labor six hours a week, two hours on each of three days of the week, and will be compensated according to the character and amount of the work 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 indispensible aid in teaching the student small fruit culture. grafting, budding, pruning, hot-house propagation, vegetable gardening, etc.

The Horticultural Department is provided with two greenhouses—one 25x100

feet and the other 16x80 feet, and has also about 1,000 feet of hot-bed sash for propagating purposes. In the orchard and fruit garden are about eight hundred varieties of fruits, which are used in illustrating lecture room work and for experimental purposes.

As an experiment station, the farm has organized many experiments in stock-feeding, tillage and crop improvement. It has already published, under the present management, fourteen bulletins of results. This work comes under the eye of the student and teaches the habit of observation.

# BULLETIN NO. 9.

#### GRASS-FED PIGS.

AGRICULTURAL COLLEGE FARM, COLUMBIA, Mo., May 7, 1884.

# S. S. LAWS, LL. D., President University of Missouri:

SIR:—I hereby submit the following observations upon an economic question in pig feeding. This experiment is but one of a series of annual trials to be continued until satisfactory conclusions are arrived at. By itself, it is of less consequence than as one of a series of trials, yet is given, as it is deemed best to keep those interested familiar with each phase of our work, whether successful or not. Negative results are often more valuable than positive ones. The chief object of this report is to call the attention of our feeders to one of the most important economic problems presented to the Missouri farmer.

On February 1st, our feeders had 4,087,556 swine, valued at \$19,376,063. Iowa's Swine were valued at 32 per cent. more, each. Why this difference I do not fully know, but clearly understand why ours are rated at only \$4.74 each, and know of the great loss by our system of management. If ten per cent. of saving can be effected on the cost, or valuation, we have nearly \$2,000,000 annually as the result. The attempt to save 25 per cent.; nearly \$5,000,000, of present cost, would be an easily realized effort. The system of our feeders contemplates fifteen months for 200 lbs. of growth. Whatever more the shote weighs at sale is put on after this period in the couple of months of fattening. This gain of 200 lbs. can be accomplished in six months, but seven will be allowed. A saving of eight months' time will be effected and the necessity of the losses and cost of winter feeding. The amount required to maintain a pig without gain or loss is not definitely settled. For a steer it is about 18-10 per cent. of live weight daily. And in my experience with pigs, varying from slightly under 2 per cent. to 31 per cent. of live weight daily, depending on the character of the pig, its weight, the food, and the season of the year. Roughing our pigs upon whole corn, in storms and through the cold winter, it is safe to say, will require the consumption of 21 per cent. of its live weight daily, for mere existence. As the average weight of a 200 lb. pig is 100 lbs., therefore the keeping of a pig eight months longer than necessary to gain 200 lbs. in weight requires 600 lbs. more of corn than necessary to obtain this weight in seven months. This excess corn unnecessarily fed will average to cost in Columbia \$4.00. If the pig sells for 5 cents a pound, or \$10, this extra cost will amount to 40 per cent. more than it ought to be without including care, risk of winter loss, and interest. It is asserted that grass is a cheaper food than grain and that two summers are necessary to grow a pig on grass. Even then it involves five months of winter feeding under rough conditions, and at least two months to fatten in during the fall. Can we not combine pasture and grain feeding to advantage, and get pork in seven months?

The College Farm sold its spring pigs the first fall of their growth to a purchaser who said that he believed there was not another so nice a lot in the State. He was probably mistaken as to that fact, at least I hope so.

#### EXPERIMENT.

May 17th, lot 1 of four shotes, weighed 366 lbs.

May 17th, lot 2 of four shotes, weighed 368 lbs.

Lot I was fed in a small pen with shipstuff and water. Lot 2 was fed shipstuff and had the run of a pasture. Lot 1 in the pen ate 725 lbs. shipstuff, and gained 78 lbs. Lot 2 ate 725 lbs. shipstuff and pasture grass, and gained 174 lbs. The time was from May 17th to July 7th, or 51 days. The gain was small in both cases, one of the smallest that I ever received for lot 1, yet the trial was relative as between the two lots. The pasture was a blue grass pasture. The pigs of lot 1 certainly must have eaten 25 per cent. of live weight daily for maintenance ration. The roughing of the winter, the pigs of the College Farm get, as well as do those of the State, a fact which I am sorry to have to relate. This roughing seems to give them a set-back, or gets them in a nearly stationary condition of growth that requires time to overcome. The better growth of the next period emphasizes this fact, for then it appears that they did much better under the influence of the start they had received in the previous period. None of our domestic animals for the State have so suffered from the severity of the past winter as the shote. Early maturity will obviate this loss by marketing the first season, for all except brooding sows that need warm quarters.

### SECOND PERIOD.

Both lots were fed in the pasture to ascertain whether the poor growth of lot one, before, was due to the method of feeding, or whether they were poorer growers than lot two, and to establish the reliability of the indications of the first trial.

Lot 1, fed 39 days, ate 477 lbs., gained 154 lbs.

Lot 2, fed 39 days, ate 483 lbs., gained 130 lbs.

Thus it seems that lot 1 are good feeders, under good conditions, and that both lots gained fairly after getting a healthy start. Lot 1 gained a pound for every 3.1 lbs. ship stuff eaten. This three lbs. meal cost 2.17 cents. Inasmuch as shipstuff is worth twice as much as corn meal as a manure; and inasmuch as three-fourths of the growth, judging by the average of several years weighing trials, was made by the shipstuff it would seem that the enriching of the pasture by the food brought on was nearly a compensation for the grass taken, and that a nice profit accrues when pigs bring five cents a lb. The pasture during this period was quite short.

During the next 34 days, lot 1 was continued, as before, and lot 2 put upon grass

alone. Lot 1 gained 103 lbs., and lot 2, 50 lbs. But lot 2 had access to nuts and slightly to other materials; they were therefore continued in a clear pasture parched by the severe drouth, gaining 20 lbs. Pasture alone will gain a pig in weight, but too slowly and unprofitably, as most of the food eaten is only maintenance food and requires a costly and risky winter feeding. Pasture and meal are better than meal alone, the pasture grass answering as a cheap maintenance fodder, while the grain is the excess food that enables a pig to be marketed at seven months. While shotes were fed in this trial, the advice offered is illustrated by the sale of 50 spring pigs in one lot in November, in fit condition for the market. My most successful experience with spring pigs has been in feeding in a cool place in summer, or in a barn cellar. The moderate growth of my shotes was due in part to the summer heat. I believe that no error is committed in strongly advising our swine growers to modify their practices by more grain feeding of their pigs the first season for early sales. The change will, certainly in value, be a great saving to our State.

Respectfully submitted,

J. W. SANBORN.

# BULLETIN NO. 10.

# PIG FEEDING EXPERIMENTS.

MISSOURI AGRICULTURAL COLLEGE FARM, COLUMBIA, Mo., July 1, 1884.

S. S. LAWS, LL. D., President University of Missouri:

SIR:—In reporting the results of the following experiments, allow me to repeat that this, as most of my experiments are, is but one of a series of parallel trials, extending over years sufficient to give certainty to conclusions, and thus to establish a fact or facts for agriculture upon which all may practice with certainty, under like conditions.

Three lots of shotes, of four in each lot, were weighed March 15, 1883:

Lot 1, weighed 344 lbs., and was fed whole corn.

Lot 2, weighed 340 lbs., and was fed corn meal.

Lot 3, weighed 336 lbs., and was fed shipstuff.

Lot4, ate in 63 days, 687 lbs., and gained 80 lbs.

Lot 2, ate in 63 days, 850 lbs., and gained 116 lbs.

Lot 3, ate in 63 days, 808 lbs., and gained 188 lbs.

#### CHANGE OF FOOD.

Lot 1, food, corn meal, from May 17 to July 7.

Lot 2, food, whole corn, from May 17 to July 7.

Lot 3, food, shipstuff, from May 17 to July 7.

Lot 1, ate 762 lbs., and gained 134 lbs.

Lot 2, ate 552 lbs., and gained 84 lbs.

Lot 3, ate 718 lbs., and gained 64 lbs.

Total whole corn fed in 116 days, 1,239 lbs. Total gain, 164 lbs.

Total corn meal fed in 116 days, 1,612 lbs. Total gain, 250 lbs.

Total shipstuff fed in 116 days, 1, 524 lbs. Total gain, 252 lbs.

Gain per 100 lbs of corn, 13.2 lbs. Pounds of corn eaten per lb of gain, 7.5 lbs.

Gain per 100 lbs of corn meal, 15.1 lbs. Pounds of corn meal eaten per lb of gain, 6.4 lbs.

Gain per 100 lbs shipstuff, 16.5 lbs. Pounds of shipstuff eaten per lb of gain, 6.0 lbs.

The growth is but about one-half that received by me per 100 lbs of food under favorable conditions, yet, as an experiment, it is no less valuable. What were the favorable conditions? Spring pigs, thrifty from the start, and kept in pens from the start, in a cool basement of a barn. These shotes had the stinting influence of the open air, or straw sheds, of winter. They were taken from roaming and confined in a pen where they could view other pigs at large. They were exposed to the heat of the open air, although not without covering from rains. This set gained better in the second period, as did the sets reported in the last Bulletin confirming the view expressed in that Bulletin, that the stinting influence of our Missouri system of wintering is costly, and that spring pigs are much more profitable. To neutralize any belief that may arise that the experiment is of only indirect value, and to illustrate a practical problem, I will endeavor to show that the food had its normal effect, or that the food eaten was fairly utilized. I have found that, approximately, 2 lbs of food per day per 100 lbs of live pig is used as maintenance fodder, and that about 2 lbs more are used for each pound of growth. Taking the corn meal fed pigs, as an illustration, I find that their average weight was 112 lbs each, for the period of 116 days. As they require 2.24 lbs per day for maintenance ration without growth, then for 116 days for 4 pigs, 1,039 lbs were used, merely to support those pigs, leaving only 573 lbs for growth. As the pigs actually gained 250 lbs, it will be seen that the food was well utilized, according to former results. in which there were good gains. In short, the light gain was the result of small consumption, indulged in to a similar degree by all the lots, as the change of food reveals. These results should influence those who feed with an illiberal hand. when more would be eaten. In this case the false conditions indulged in, save the pen feeding, are those of the mass of our farmers.

The whole corn gave much less gain. Yet a careful view of the figures shows only 1.1 lbs. saved by grinding for every 7½ lbs. fed, or 1 lb. to every 6.8 lbs. fed. As the miller charges one-eighth toll, this gives .176 lbs. to every 8, saved, or 44 lbs. per ton for carrying to mill. The rates of toll are just twice as high as in the East, and on low priced corn about force the use of whole corn. In this trial, the nutritive value of whole corn is greater than the face of the figures shows. The whole corn fed lot ate much less than the corn meal fed lot. If we again assume 2 lbs. for 100 lbs. of shote as maintenance fodder, then 1,027 lbs. were used as maintenance fodder, leaving only 212 lbs. per 164 lbs. growth or less corn used per pound of actual gain, than of corn meal per pound, actual gain. In short, the nutritive effects of the whole corn are apparently greatest, although from the little eaten practically valueless. When the whole corn and corn meal are eaten in similar amounts, a previous Bulletin shows the meal more effective than the corn.

#### SHIPSTUFF VERSUS CORN MEAL.

The relation of the shipstuff to the meal in this trial deserves careful attention. **33**.8 lbs. of shipstuff gave the same gain that 100 lbs. of corn meal gave. This has

been the continuous result for six years. This then is now a demonstration. I especially call attention to the fact, because, again and again, in lecture trips among cour farmers, I have been told that shipstuff, as now made, is good for nothing; worth no more than so much saw dust, and thus allow it to be shipped away. The first three years of trials were in a good, dry, cool basement of a barn, and with pigs, and 100 lbs. shipstuff gave 28.1 lbs. gain, and 100 lbs. corn meal gave 26.4 lbs. gain. These results are what good conditions give, and stand for profitable farming. Again the value of the two foods for manure is really the most important part of the question, thus far. I find a rapidly growing sentiment in favor of saving and applying manures. The clearer the knowledge of our farming the wider the movement appears.

At the rate every State east of us is to-day paying for nitrogen, phosphoric acid and potash in chemical manures, these materials in the manure made from the consumption of a ton of shipstuff, is worth \$13.63, and from a ton of corn meal \$6.65. I do not expect that these are practical values for Missouri, but relative, and such as to warn us against the sale, to smart people beyond our borders, all of our shipstuff. Indeed every bushel of our wheat should be ground at home, thus building up our own markets with all their blessings, thus retaining as much as possible of our own soil fertility.

#### FEEDING FOR LEAN MEAT.

The main purpose of this trial was to observe how far the character of the food modifies the type and composition of the animal, and it was mainly for this purpose that shipstuff was fed against meal. The composition of these foods is as follows:

### TOTAL.

	Protein.	Carbohydrate.	Fats.	Ratio.
Corn (Dents)	11.8	81	5.5	1 to 8
Shipstuff		68.3	3.3	1 to 5.5

The ratio of protein, or flesh former, and of carbohydrates, or force producers and fat formers, is greater in the shipstuff than in corn meal. Personal feeding trials with analyzed foods, leads to a strong personal belief that the growing opinion that protein has been overrated in its functions as force and fat producers, and that the carbohydrates have been much underrated as fat and force producers, is correct. However this may be, it is now positively known that the carbohydrates are fat producers, to a liberal degree, in swine. To this statement I can give unmistakable evidence. Does a food, rich in carbohydrates and fats, tend to produce an increased proportion of fat to flesh? The importance of the query will be generally recognized, especially by consumers, who have to purchase in very fat steers, as well as in fat swine, a heavy proportion of fat for which they may have no desire. Some one has said that swine, as now bred and overfatted, "are animated lard barrels." Excessive fatness has restricted consumption to such an extent as to demand the attention of the feeder. In 1850 the country had 30,354,213 swine, or 1.3 per capita of population. In 1860 we had 33,512,867, or 1 per capita. In 1870 we had 25,134,569, or .6 per capita. In 1880 we had 47,680,700, or .710 per capita, and in 1884 but .810 per capita. Population has gone, in 33 years, from 23 to 55 millions, and swine from 30 to 44 millions only. But this is not all, the exports have increased from over \$7,000,000 annually to ten times this amount. Thus, while we produce less per

consumer, by a heavy decline, a heavy fraction of the swine product of the country is now exported. The character of the product does not explain all, but much of the cause of this great change. Our people are not lard nor grease eaters. Grease, wealth and culture are not companions. No animal converts so much of its food into growth as the pig, and none has so little waste of carcass. 100 lbs of corn are good for 20 lbs of pig carcass. We are not realizing 10 lbs of steer carcass from this amount of food. I have heretofore observed that a pig fed on shipstuff versus corn, gave an apparently better muscular development from shipstuff. Some experiments by Sir John B. Laws with steers, seem to show that nitrogenous (muscle making) foods gave a greater increase of flesh than carbonaceous or fat forming foods did.

I retained two typical pigs from each lot, for examination. Unfortunately one of them died. To those who would have us kill a dozen for a trial, I beg to state that these experiments reported are all done out of the earnings of the farm, and the work is volunteer, the State not indulging us in the money to prosecute costly, or any other kind of work. But another and better reason decided the use of only two. It is proposed to carry the work over years and gain the influence of seasons, on food and animal. These pigs were fed from March to November 15, the one lot on corn meal, and the other on shipstuff. The corn fed pig dressed 82 lbs to the 100 lbs, and shipstuff fed pig 80.6 lbs. On severing the head of two corn fed pigs, scarcely a trace of lean meat was seen. In the shipstuff fed pigs it was decidedly more abundant. I selected lean meat from three parts from each pig from precisely the same location on each-namely: inside of thigh, loin, and shoulder. These parts were placed under a microscope and examined, although the distinction was clear to the eye. The shipstuff fed pig carried less fat even in the fibres of lean meat than the corn meal fed lot. These pieces were given to the chemist, Prof. Schweitzer, for analysis, which he very kindly undertook to perform for me. By some accident by students in the laboratory they were lost. This year the work will be renewed and carried out, with three pigs for each lot. The microscope and the eve marked a decided difference.

Experience convinces me that the exclusive use of corn meal for feeding ration is detrimental to a vigorous and healthy muscular development, producing a pige easily subject to disease, distasteful to our consumers, and more costly than is necessary. Our farmers will not understand me as suggesting shipstuff as the only food good for the pig and that corn has no place in feeding swine. Far from it.

In concluding the 10th bulletin, I desire to express my thanks for the favor shown our restricted efforts to aid our agriculture, the great interest of the State, measuring the prosperity of all industries by the press, in their quotations from bulletins or in the entire publication of them. These bulletins are issued in the interest of the reading public and not in that of this college. The work is here looked upon as a part of the duty of this college to the public. Although not obligatory upon it.

There have been sent, thus far, bulletins to nearly every paper in the State, or to about 400. Many of these papers may not care for them, for various reasons. We will be obliged to all those not desiring them to notify the subscriber; or if those using the bulletins will send me a marked copy of paper containing them, or matter from them, I will be very much obliged and will regard such a notice as a desire for their continuance. They will be sent to the address of any one desiring them.

Respectfully submitted,

# BULLETIN NO. 11.

Missouri Agricultural College Farm, Columbia, Mo., Aug., 1884.}

S. S. Laws, LL. D., President University of Missouri:

Six:—The importance of our vast amount of corn fodder, in Missouri as stock food, in large part annually wasted, warrants a somewhat general review of experimental evidence of the value of this food.

Our acreage of corn this year is estimated at 5,995,931 acres. Our average crop of corn is 26.8 bu. per acre for the past five years. But this year's crop promises to rival that of 1879, which was 37 bushels. Assuming 30 bushels per acre, a yield of 179,277,930 bushels of corn will be the result. The average yield of stalks to a bushel of corn in our experiment sections last year was 85 lbs. But as the proportion of corn was small, because a poor season for corn, the old basis, in fair accord with my own weighings, may be assumed, namely: 80 lbs. of stalks, or stover, to a bushel of corn. On this basis we shall have 7,195,117 tons of corn fodder.

It would be very easy to show that the straw and hay cut, plus the corn and oats fed in the State, are far more than ample to winter our stock through, leaving this great reserve of food for expansion of our stock interests, or for traditional waste. But as corn fodder is mainly fed to cattle, we confine our attention to this food.

During last winter, in a series of experiments, too full for a complete report at present, covering 4 sets of steers and over 100 days time, I found corn fodder of much economic value. Thus: a lot of 3 steers, weighing 3016 lbs., Feb. 16th, fed on timothy and redtop hay, gained to March 18th, but 33 lbs. Lot 2, weighing, Feb. 16th, 3005 lbs., gained to March 18th, 102 lbs. Their food was clover hay and corn fodder. Lot 3, weighing 2860 lbs., Feb. 16th, gained to March 18th, 94 lbs. Their food was corn fodder and  $2\frac{1}{2}$  pounds each of middlings and of cotton seed meal per steer. Lot 1 ate 2136 lbs. timothy and red top hay and 450 lbs. meal. Lot 2 ate 1551 lbs. clover and corn fodder and 450 lbs. meal. Lot 3 ate 940 lbs. corn fodder and 450 lbs. meal, or 5 lbs. by each steer daily.

It will be observed that less than a pound of corn fodder in a ration of clover, or of certain meals, is fully as efficacious as hay. This result from hay is not a representative one. Clear timothy gave a gain of a pound a day in former experiments. These facts are now introduced and added to those of the winter of 1882, reported in Bulletin No. 2, to show that I get the same results here as at the New Hampshire Agricultural College for similar foods. Thus, there, timothy fed alone gave .8 lbs. gain for 21.5 lbs. hay daily, per steer. Corn fodder fed alone gave a loss of .33 lbs. Per day on a consumption of 21.4 lbs. fodder per steer. A growth per steer of 1.3 lbs. per day was found, on a ration made up of 22.3 lbs. corn fodder, 2.1 lbs. fish meal and .9 lbs. corn meal, or 3 lbs. of meal in all. A fourth lot gained a pound each with a ration made up of equal parts of clover hay and corn fodder, or 121 lbs. each. The time covered was 49 days, being a part of a longer period, (98 days), in which straw preceded corn fodder with better results. It has been my invariable custom for eight years to feed my young stock, not under experiment trials, with clover and corn fodder, or straw and clover hay, with as good results as on hay alone.

In 1880 I took three sets of cows and three sets of steers from corn fodder and clover and fed them upon good timothy hay, cut at three periods to test the value of hay cut at varying periods. In 47 days, lot 1 gained on clover and corn fodder, per steer, 76½ lbs.; lot 2, 83½ lbs.; and lot 3, 81 lbs. No grain or other food was fed. Gain for next 35 days on good hay: lot 1, 35 lbs.; lot 2, 14½ lbs.; and lot 3, 38½ lbs. The cows gave slightly less milk per day after the change. The amounts of food eaten was about identical. A 1,000 lb. steer will consume 25 lbs. clover and corn fodder; and when on hay, 25 lbs. of good hay. A 1,000 lbs. cow eats the same, in my experience, plus about 6 to 8 lbs. more of grain.

A partial explanation of the good results of clover and corn fodder against hay, or of cotton seed meal and corn fodder versus hay, rests in the fact that both clover hay and cotton seed meal are rich in the albuminoids, or flesh forming materials of the food, of which corn fodder is deficient, and that corn fodder contains a greater proportion of carbohydrates or fat and force formers than either clover or cotton seed meal. Thus these foods are the complements of each other. In the experiments quoted, wherein fish was fed, the rations fed had furnished the digestible materials per steer as displayed in the following table, for the period:

FEED.	Albuminoids	Carbohydrates	Fats	Rates of Albuminoids to Carbohydrates	Organic matter eaten each day	Gain per da last 35 days of the 49
Hay Corn fodder Corn fodder, fish and corn meal Corn fodder and clover	57.22 28.25 74.15 50.67	$\frac{322.5}{377.5}$	$\frac{11.9}{28.1}$	1 to 9.8 1 to 12.4 1 to 5.4 1 to 8.6	18.9 12.5 15.1	

The last 35 days of the period of 49 days is taken because it is more beyond the influence of a change of food. By it, it is seen that clover and corn fodder made more gain than timothy on a little less food. A review of the table will show that the ration of albuminoids to carbohydrates is better in the combination fodder than in the hay ration. In something like seven trials, some covering 100 days time with analyzed foods, I have invariably found, under careful daily weighings of fodder, that a pound of gain is made on less clover and straw than is required of good timothy hay. I will add analyses of the foods named from the farm in question, and also of cotton seed meal. The analyses were made by Prof. Collier:

FEED.	Water	Ash	Fats	Carbohydrates	Albuminoids.	Crude fibre
Corn fodder	16.23 6.50 5.80 7.62	6.43 3.00 7.70 6.38	$\frac{2.58}{3.98}$	48.20 58.52 50.29		23.27 24.34 18.73 8.18

This table shows actual gains on less food than the German tables give for bare maintenance.

The deficiency of albuminoids, observed in corn fodder, is easily made up by the addition of either clover hay or cotton seed meal, as revealed by the table.

It is not my purpose, nor will space permit me, to make a scientific presentation of this matter of food combinations. I wish merely to show that in certain combinations of food, like clover or cotton seed meal, within the farmers' reach, corn fodder has, pound against pound, substantially the same value as timothy. This being the case, and 25 lbs. of timothy, as found in eight years of weighings, when fed alone, being good for a growth of a pound a day, when fed to a 1,000 lbs. steer' we then have in our 7,195,117 tons of corn fodder, the capacity to winter how many steers under good management? When the fodder is cut with a recent machine there is no waste in feeding. But allowing a waste of 15 per cent. of the amount fed, (this waste I have determined by weighings under good food combinations), and 120 days feeding at the barn, (as long as our farmers average feeding at the barn), and we have fodder enough to winter 4,000,000 head of 1,000 lbs. steers, and this is above the average weight.

Missouri had, last January first, 2,009,647 cows and other cattle, about one-half enough to utilize the corn fodder of the State, throwing all other food away. Missouri, behold your waste! You grow 80 lbs of stalks, containing about threefourths as much of digestible nutrition as the 56 lbs of corn they bear, and throw away the stalks and retain the corn, (that is, retain that which does not spoil in the field or freeze in the mud), and yet complain that farming does not pay. Our farmer friends say that the sentiment is fine, and flavors of college visions, but is in practice an illusion, 100 acres of corn fodder being beyond available help to utilize. Are the 100 acres of corn and the companion piece of wheat inevitable? Must we turn our energies into wastes? We grow five times the acreage of corn that we do of meadow grasses, while in the old section of the country the reverse is the case. Eleven per cent. of our tillage area is in grass, while the proportion varies from 50 per cent. of area in grass in England to 84 per cent. in New England. With more grass, and with stock, butter and pork sales, and less corn and wheat area, and less corn and wheat sales, we shall be entirely able to utilize all of our crops and at a much better profit than we are now receiving. The College Farm has no straw nor corn fodder to waste, but utilizes it all. It has decreased its tillage area and increased its grass and stock, and finds a profit in it.

# HOW TO SAVE CORN FODDER.

The complaint that stock will not eat corn fodder well, or over one-fourth to one-third of it, arises from our method, or lack of method, of securing it. Most of our corn is allowed to stand as it grew, and to have its nutrition washed out of it, and then it is fed, where it grew, to cattle roving through the field. The bleached stuff is little liked and little eaten. A few cut it and put it into large shocks, but not until after the corn is dead ripe. It should be cut while the stalks are yet quite green, the corn being in the latter stages of the dough state, or before the corn is too hard to crush easily in the fingers and before it is dry throughout. It should be put into shocks made from four hills square in the place of the old 16 hills square method, and bound round the top by rye straw, twine or a green corn stalk. It is well to bend the tassels down, binding their tops under, thus turning the rain. In the course of two to four weeks, depending upon the weather, the small shocks may easily be husked out and the corn cribbed. The band will not have to be re-

moved nor the shock taken down in husking. After husking, the hills of cornaround which the shock is made, as fast as the shock is wanted, may be cut, and the fodder of the shock may be quickly and easily, by one man, passed to the wagon for stacking, the band around the shock always remaining on. Thus treated it will be tender, more palatable, and more nutritious, and when fed with clover, cotton seed meal, or middlings, will be nearly all eaten. It will also be handled from the start at less expense per acre than by the system of 16 hills square shocks.

### VALUE OF THE CORN.

Shocked while the corn is thus green, most of our farmers suppose that less and poorer corn is obtained. This is a mistake, as not an ounce in weight of nutritive value is lost.

I have devoted three years of experimental work to this question with Northern Flint corn, grown north. One test was elaborate and covered hundreds of weighings, beginning with the green corn from measured sections and passing along until dry, the following season, and then weighed out to cows, whose milk, twice daily, was weighed for corn thus shocked, and also for corn ripened on the hill. Each kind was weighed out to pigs also. In every case for three years, I have received more corn when shocked at the glazing of Flint corn, than when allowed to fully ripen on the hill. One year the relation stood as 1684 lbs to 1583 lbs from one-fourth of an acre in rows 55 rods long, showing over 400 lbs. in favor of the early cutting advised. This yield is at the rate of over 80 bushels per acre. The fodder also weighs as much when shocked as when it remains until ripe. In short, growth ceases at the period named, which is about the time the butt of the stalk begins to yellow. For the information of this farm, rather than for public report, as the area was small for experiment work, 100 hills were cut up when the corn was in the milk stage and gave 83 lbs. of dry corn, but when beginning to harden, stalks quite green, 100 hills gave 1231 lbs. dry corn. When fully ripe 100 hills gave 1211 lbs. of corn, which agrees with fuller experiences with the Flint corn elsewhere.

These experiments and many collateral facts indicate that corn, like wheat, loses weight in the last stages of ripening, and go to sustain the suggestions made above for saving and utilizing fodder.

The apology for presenting a Bulletin of this character rests in the emphatic belief, founded in years of weighing and practical experience as a farmer, that not less than \$20,000,000, net, is wasted in corn fodder, in this State, annually, and much more when worked into beef, and that a system of farming organized to produce that which can be utilized, would be much more profitable and maintain better the fertility of the farm and its ultimate good, than a system which sells the grain to be worked up abroad, and throws away its base. The practice was once warranted, perhaps, but we should have passed the pioneer stage.

Respectfully submitted,

J. W. SANBORN.

# BULLETIN NO. 12.

AGRICULTURAL COLLEGE FARM, COLUMBIA, Oct. 20, 1884.

S. S. LAWS, LL. D., President University of Misseuri:

Sir:—Among the multitude of unsettled problems of agriculture seemingly easy of solution, yet over which the farmer is still perplexed by a multiplicity of views and reported experiences, is the simple yet important question of seed potatoes. Shall they be used whole or cut? If cut, how; or shall we use small or large seed? Many assert that inasmuch as the tuber is not the true seed, which seed is found on the tops in the potato ball, and, that inasmuch as the eye is but the bud, it matters not whether the plant is propagated from a large potato or a small one, from one eye or from many. Between the extremes in the practice of the various methods of seeding there is involved, at least the use of 10 bushels extra of seed per acre, and at this point, Columbia, of a money value ranging from \$5 to \$15 per acre, with the varying prices of the seasons.

It means for our State a difference of 750,000, or more, bushels of seed used annually. The method of seed use may modify the crop 25 per cent. yet rating the variation of yield by method of seeding at 10 per cent. our crop of the State is modified by more than one-half millions of bushels. Agriculture is wofully prolific of such unsettled problems, seemingly of little moment, yet the aggregate of each and the sum of them all is of momentous importance to civilization, as the unit of labor essential to produce a given amount of food, or of the raw products for the arts, measures all progress. However ambitious to do profound work, colleges and experiment stations may be at present, in part, at least, they have to amass facts to guide even simple operations of the farm, without the feeling that they work beneath their dignity.

The test of methods of seeding potatoes, I have now conducted for nine consecutive years, upon three farms of diverse characteristics, and with one result. Two of those tests I will not be able to relate, namely: The first one on a private farm and not recorded; the seventh at a college farm from which I removed before harvesting, but not until I saw clearly that the result would surely be in agreement with the five preceding tests upon the same farm.

All the above tests were, for each farm, made under similar conditions, each farm using the same variety of potato, usually the Early Rose, and on soil of similar condition.

TEST FOR 1877.

Except for the last two years, the tests were made at the N. H. Agricultural Farm on a clayey soil, and upper terraces of the alluvial soil of the Connecticut river; potatoes, Early Rose. As potatoes vary in their proportion of eyes the variety used is a factor in the case.

YIELD PER ACRE IN BUSHELS.

Method of seeding.	Table potatoes.	Small potatoes.	Total yield.
Whole potatoes, large. Whole potatoes, small. One eye to a hill.		103.6 54.3 19.9	194.1 108.6 57.0
Two eyes to a hill. Three eyes to a hill.	0	37.1 43.5	103.2 113.6

Table potatoes mean, in above statement, all potatoes above the size of a large hen egg.

The growth of the tops in the early season displayed more difference in favor of large seed than the harvest indication, showing that a vigorous leaf at the early period of potato growth is of much importance. This difference has been noted every year of the trials.

The following table will give the average results for the four years succeeding the above period and on a more elaborate scale. It was sought in these trials to ascertain whether the cutting of the potatoes, or the use of small potatoes affected the constitutional vigor or impaired the yield in after years by using the descent of small or cut potatoes for seed. For this purpose the product of small potatoes were saved and small seed or potatoes from these were again used for seed. This process continued for four years for each method of seeding, i. e. large potatoes were selected from the product of the seed of large potatoes, etc., for each sort.

Small seed potatoes will mean potatoes under the size of a hen's egg, and one eye will be understood as being cut from good sized potatoes.

AVERAGE YIELD OF FOUR SEASONS.

	Whole potatoes, large.	Whole potatoes, small.	Seed end	Stem end	One eye to hill	Two eyes to hill	Three eyes to hill
Table potatoes		$127.8 \\ 65.15$	$\frac{114}{68.7}$	90.7 61.8	$\frac{60.1}{24.9}$	83.9 39.9	$105.7 \\ 48.4$
Total yield	225	192.9	182.7	152.5	85	123.8	154.1

The above figures, while not expressing all that the eye of the observer might have seen, speak so clearly in the final result that all can see the lesson clearly and without explanation.

# TRIAL FOR 1883.

This trial was made at the Missouri Agricultural College Farm, on a heavy clay loam soil with marly subsoil.

METHOD OF SEEDING.

	Whole potatoes, large	Whole potatoes, small	Seed end	Stem end	One eye to hill.	Two eyes to hill	Three eyes to h	One eye cut
	arge.	small	<u> </u>	<u> </u>		F 	hill	<u></u>
Table potatoes yield	$\frac{54.1}{58.3}$	$\frac{33.3}{31.2}$	$53.1 \\ 44.7$	$\frac{38.5}{32.3}$	30.7 10.4	44.8 14.5	44.8 16.6	$\frac{30.2}{13.6}$
Total yield	112.4	64.5	98.8	70.8	41.1	59.3	61.4	43.7

The soil upon which the above potatoes were grown was unfertilized and the proposition only a moderate one for the best plat, but yet under the same conditions for each. The result was as in previous trials, while the leaf and stem development was equally favorable for large potatoes.

### SEASON OF 1881.

	Total	
Seed, whole potatoes, large	176	bush.
Seed, whole potatoes, small	152	. "
Seed, seed end of potato	149	"
Seed, stem end of potato	150	
Seed, one eye to hill.	5	"

This last trial is the only one for nine years that the seed was not cut and the planting carried forward under my personal supervision. The one eye and two and three eyes to a piece system of planting in this case was a failure. Not much over one-half of the seed broke the ground in germinations; and a part of the hills in hilling slightly by a cultivator, were so small and weak, compared with fuller seeding, that a few slightly covered died. The balance under a very wet season, here, did not thrive. I have not given the produce of the others because the figures would be of no value. The one eye result is given to show how great a variation may occur under unfavorable conditions between ample seed and deficient seeding. Many good farmers advocate the use of one eye to a hill. Among the very few official trails that have come to my attention, I have seen none that favor this view of farmers, in the ordinary way of cutting potatoes. Since beginning these trials I have seen two foreign tests, covering about seven years each, wherein the effect of cutting on the future vigor of the plant was studied, with results against fine cutting. One eye and small potatoes gave less favorable results at the Ohio Experiment Station last year than whole potatoes.

I think it entirely safe to affirm that light seeding of potatoes, or the use of small potatoes for seed, will result unfortunately in ordinary hands on ordinary soil in ordinary fertility, especially if deeply planted. The reasons for these views rest. mainly upon the facts that the tests show them good, and that, theoretically, judgment approves them. The young plant receives no nourishment, except from the seed used, until the leaf appears above the ground. At the usual depth of planting, this period is so long that no inconsiderable support is derived from the seed before other sources supply the plant. The reason of the failure of one eye this season, in new hands, to appear above ground, I ascribe in part to unusual depth in planting and the failure of nourishment to give it vigor for the three weeks in which it is opening its leaves to the air. That this nourishment is often of vital importance is seen in the far greater vigor of plants from large seed against seed cut or against small potatoes. The leaf is broader, the stem stronger and the whole top always, in my experience, much in advance of those tops grown from severely cut potatoes or those grown from small potatoes.

Those farmers who have found, or who think they have found, from measurement by their eye, that light seeding is as good as heavy seeding, are usually those who have an extra rich soil or who give it an extra rich dressing of manure, and fine pulverization, and who do not plant too deeply, I infer. Such conditions give food to the plant relatively quick, through its roots, in abundance. I found that the relative results vary with the season. Thus the more favorable the season and

the better the conditions the greater the relative yield from light seeding. Our farmers must then bear in mind that the good results reported from light seeding of potatoes are often guesses, generally from market gardeners, or obtained under favorable conditions, while the failures are not reported. Good conditions you want.

The following table will give the average returns for seven years from measured ground and weighed potatoes, the product of two farms, and in agreement with unrecorded results on a third farm:

#### PRODUCT PER ACRE.

From seed of whole potatoes, large	224.1	bushels
From seed of whole potatoes, small	177.	46
From seed of stem end of potato	148.	44
*From seed of seed end of potato	168.	"
From one eye to the hill	81.	66
From two eyes to the hill	104.	66
From three eyes to the hill.	160.	"

# VALUE PER ACRE AT 50 CENTS PER BUSHEL.

From large potatoes	\$113.50
From small potatoes	
From stem end	
From seed end	84.00
From one eye	40.50
From two eyes	52.00
From three eyes.	80.00

<sup>\*</sup>Period of six years.

To those seeking for facts to apply to farming for profit, or commercial farming, I invite careful attention to the significance of these figures, covering the length of time and variety of conditions that they do.

Respectfully submitted,

J. W. SANBORN.

# BULLETIN NO. 13.

# GOOD ROADS AND BROAD WHEEL TIRES.

MISSOURI AGRICULTURAL COLLEGE, COLUMBIA, Dec. 31, 1884.

# S. S. LAWS, LL. D., President University of Missouri:

SIR:—The following record of experiments, made in the presence of the students of the Agricultural College to illustrate the value of good roads and of broad wheels

for at least farm use, in view of the character of Missouri country roads and of the narrow wheels in common use, is deemed worthy of publication.

I think it may be safely said that the culture, power and wealth of our farmers may be more rapidly advanced in the future by good country roads than by an extension of our railroad system; that the value of our farms, the economy of their management and the character of our social farm life are now more dependent upon the character of our roads than upon any other single factor, and that a strong organized public movement should be made for their permanent improvement. The value of good roads as mediums of exchange, of communication, and of social fellowship and culture has been none too strongly put by Macauley, who said: "Every improvement of the means of locomotion benefits man intellectually and materially, and not only facilitates the interchange of the various productions of Nature and Art, but tends to remove national and provincial antipathies. Of all inventions, the alphabet and printing press alone excepted, those inventions which bridge distance have done most for the civilization of our species." Undoubtedly the character of country roads is one of the most certain indications of the civilization of any people. This stands as a fact in history.

#### TEST OF DRAFT ON ROADS AND SOFT GROUND.

In the laying out and the construction of roads two main objects are sought, to wit: first, to secure a solid road bed; and second, the avoidance of grades so far as practicable. Our trial considers the economic factors. The trials were made with a Baldwin recording dynamometer (an instrument for measuring force). A careful test was made of the Baldwin spring before its use, and it was found correct. The lines above the base of the following cuts, which are representations of the actual results of the trial, represent 100 lbs. of tension for every \(\frac{1}{4}\) inch measured from the base of the cut; thus the cuts display to the eye the relative draft of the loads drawn under the conditions to be related.

It may be worth while to try and illustrate the action of the dynamometer used in such cases. Take the spring scale of a butcher; fasten the hook in a block of Wood or anything else, as the load to be drawn. Then, with your finger in the ring, pull the block or load over the floor or the ground, and the index will point to the varying pounds of pull according as the surface on which the load is drawn is level or inclined, rough or smooth, hard or soft. Now, suppose a pencil fixed in the point of the index pointer which would rest on a piece of paper; then, as the pointer moved up and down as the weight or pull varied, the pencil point would correspondingly mark the paper. Of course, before the load starts at all there will be a certain amount of pull, and this will give the elevation above the base for the starting point of the traced line on the left hand edge of the cut. The base is the lower edge of the black under which the number and description of the cut is placed. But if this strip of paper itself be at the same time moved regularly under the pencil point by a clock work attachment, of course you will get a waving or irregular line that Will travel along the paper. This is exactly what takes place with the dynamometer so that its tracings, as shown in these cuts, are automatic and have simply been faithfully copied by the engraver.

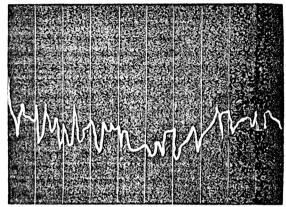
The weight of the loads drawn was 3665 lbs. each. The tires of the wheels were  $1_{\frac{1}{2}}$  inches and 3 inches respectively, the former being considerably worn.

#### TEST NO. 1.

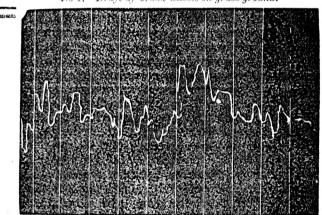
This test was made on a blue grass sward partially moist, yet but little rain had fallen for 12 days. Cut No. 1 represents the draft of the wide tires or felloes

and it averages for level ground 310 lbs. Cut No. 2 represents the draft of the narrow tires, which was 439 lbs. or 41.6 per cent. more than No. 1.

In interpreting these tracings measure from the base of each cut to the line or tracing at any point above the base and 100 lbs. draft is represented by each  $\frac{1}{4}$  inch. By taking the measurements of the highest and lowest points the elements for making the averages are obtained.



No 1. Draft of broad wheels on grass ground.

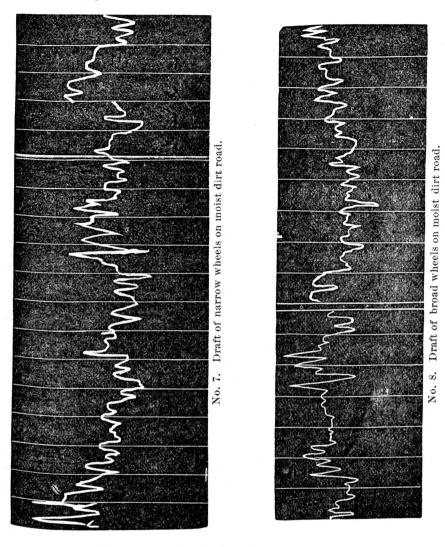


No. 2. Draft of narrow wheels on grass ground.

Assuming the wagon to weigh 1000 lbs., then on the broad wheels 3248 lbs. of load would be drawn as easily as 2000 lbs. on the narrow tires, except the loss from the wheels cutting deeper under the heavier load. Again, the broad wheels in the trial did not injure the turf while the narrow wheels cut through it—an important consideration. Our teamsters for use about the College Farm invariably choose the broad wheels. They find that they are not nearly as liable to get stuck in soft places or during rainy times.

In a subsequent trial on a partially dried dirt road, the broad wheels cut the road less deeply and drew easier than the narrow wheels, as shown in cuts 7 and 8, the draft being for the broad tires 371 lbs., and for the narrow tires 441 lbs., or the latter drew 12.7 per cent. heavier than the for mer, a net difference per ton load of 381 lbs., or 381 lbs. more could be drawn on the broad wheels to the preservation of roads, as is recognized in two or three States by adjusting the rate of toll to the

width of wheels the toll being remitted on wheels of a certain width. The difference of draft, above recorded, disappears on good roads, as our tests showed, a cut of which I thought it was needless to insert.



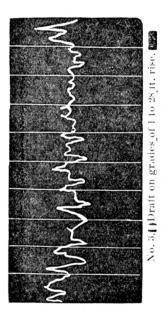
POOR VS. GOOD ROADS.

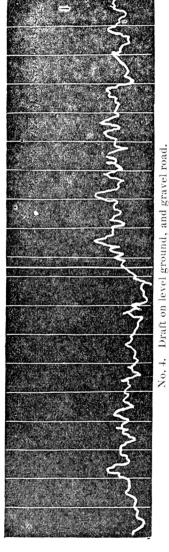
In these tests the ordinary wheels of the farm,  $1\frac{1}{2}$  inch tire, were used. The road was a gravel bed. The first pull was up a grade of 1 foot in 28 feet, and the draft was  $310\,\mathrm{lbs}$ . This test was made the same day as No. 2 on grass ground, and shows that narrow tires on grass a few days after a rain are equivalent to a draft up a hill of more than 1 foot rise to 28 feet.

The second pull was on a flat at the top of above grade and drew on a draft of lbs. Cuts Nos. 3 and 4 show the above trial and enforce the importance of

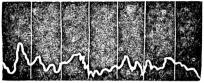
avoiding hills and of reducing grades when practicable, by leveling. The net load drawn would be hardly one-third as much up this mild grade as on the level ground. In addition to this loss we have to add the further loss of capacity of a horse to draw up hill. It is well known that the structure of the horse is such that he works to a disadvantage up a grade. On level ground, man power is as 1 to 5, but up hill as 1 to 3 compared with the horse.

The value of grades is well known to railroads and it has sometimes caused their reconstruction or even built competing lines and in the older parts of our country the country roads are often reconstructed at great cost for the business advantage of improved grades.



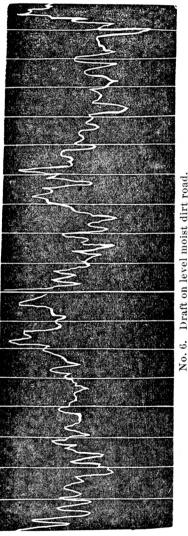


But a gravel road is not a perfect road, hence, a test was made on a floor and resulted in a draft of 70 lbs. See cut No. 5. Cut No. 6. represents a test on a dirt



No. 5. Draft on plank floor.

road 12 days after a rain, but made where shade trees had kept the ground moist. This test is represented by a longer cut, as are tests 4, 7 and 8, because no ground exactly level could be found, hence I drove each way; and the cut is doubled in length to show each trial and to obtain the average, which represents the draft of level ground.



Cut 6 on a moist dirt road shows a draft of 487 lbs, which is 57 per cent. greater than the draft on a grade of 1 to 28 feet on a gravel road, and four times as great a draft as on a level road, and seven times as great as on a level plank floor. Cuts 7 and 8 show similar results.

The draft registered by no means shows the actual effects on the horse, as it does not take into account the suction of the mud and the slipping of the horses' feet, as well as the little hills constantly in front of his feet.

#### GENERAL REMARKS.

As we view the long periods in which traffic is suspended on our dirt roads, (generally in periods when farmers are not busy) the small loads dragged into our markets, the value of which is largely absorbed by the expense of delivery; the almost universal use of the saddle horse, and the immense loads carried on the solid roads of much of Europe, in connection with the above tests, we are not likely to over-estimate the profound relation of our miserably crooked and marly roads, bridgeless creeks, and hills neither graded nor circumvented, to our system of farming, its profits and pleasures.

From the above tests the traffic that will warrant a \$2,000 outlay per mile of unimproved roads may be approximately estimated. If by properly grading our hills and graveling our road beds we can double the freight carried per team, we could, on the basis of 15 miles per day for a loaded team costing \$3 per day, save the interest of this cost at 6 per cent., in the passage of 600 loaded teams one way.

But this commercial view is, perhaps, the least important factor of the case, Roads are luxuries as well as are good houses, good suits of clothes and a thousand things our civilization will have. The road should be constructed on a broader basis than that of money returns, as roads are indispensable links in civilization's chain.

I invite especial attention to the great expenditure of force required on poor roads for the accomplishment of a moderate amount of work; to the danger of over-loading on them while the appearance of the load indicates an easy demand on the horse; to the value of broad wheels for farm work, and to the commercial importance of better roads in Missouri.

Respectfully submitted, J. W. SANBORN.

# BULLETIN No. 14.

### FEEDING FOR LEAN MEAT.

MISSOURI AGRICULTURAL COLLEGE FARM, COLUMBIA, Mo., Feb. 23, 1885.

# S. S. LAWS, LL. D., President University of Missouri:

SIR:—Last year I reported the results of a preliminary trial to ascertain the relation of the foods fed to the character of growth. This trial resulted in a larger proportion of lean meat in pigs fed with albuminous foods than in pigs fed with carbohydrate foods. The kinds of food designated by nitrogenous and carbonaceous

will become evident as we proceed; and we aim in these bulletins to use, as far as practicable the plain language of common life.

The experiment has been repeated on a fuller scale, yet not on as complete a scale as it is hoped future means will permit.

#### EXPLANATORY.

First, my desire in this experiment was to ascertain whether the composition of swine is dependent upon and can be varied materially by the character of the food. If so, then a very important principle is established that will enable us to modify the proportion of fat to lean. Our modern breeding and feeding have developed an excessive proportion of fat to lean, when compared to the old time shote. Our modern corn-fed hog is a grease producer, and grease is repugnant to the taste of Americans, and, hence, our consumption of swine products has undergone a marvelous decline. In 1850 we produced 1.3 shotes to every inhabitant, while in 1884 we produced only 0.8 of a shote per inhabitant, being now 62.5 per cent less than in 1850; while the exportation of hog products has increased 700 per cent.

By feeding, can the hog be made more agreeable to the American stomach? The question is of broad importance for, as noted in bulletin No. 10, 100 lbs. of corn will produce 20 lbs., really over 21 lbs. of pig carcass, while the same food will not produce more than 10 lbs. of dressed steer, having a larger proportion of water and bone in its composition than the pig. Pork is cheaper made than beef.

Second, to aid those who may not understand the terms used in the food analyses given and the application of those terms in animal nutrition, I will explain that albuminoids are the materials in foods that are well represented by the white of an egg, and whose uses in animal nutrition are, 1st, to form flesh or lean meat, for no lean meat or muscle can be formed without albuminoids, nor life sustained. The German investigators, from whom our notions in the science of feeding originated, claim albuminoids as the chief source of fat, and also of animal force and heat. The following trial weighs very heavily against the view that albuminoids are the ready fat formers they have supposed them to be.

Carbohydrates, which include fibre, are the most important source of the heat of the system. Starch and sugar are familiar forms of carbohydrates. Carbohydrates are undoubtedly an important and probably the main source of animal force. They are also a source of fat. Both propositions have been denied by physiologists, but they may now be considered established. Carbohydrates, then, can form animal fat, as this trial indicates, but not lean meat.

The fats of food are chiefly used to form the fat of the system, but may supply heat and force.

The ashes of food form the bony frame-work of animals. The main interest of our inquiry centers in the question: Can we materially modify the ratio of lean to fat in the growing animal by varying the proportion of albuminoids to carbohydrates fed? I regard this question as one of the most important in animal nutrition, both physiologically and economically, and as equally important to the producer and the consumer. It will undoubtedly touch the question of health, and a vigorour constitution, generally proof against disease, may be acquired by feeding.

As no two foods have the same combination, which fact is illustrated by the analyses below, it will be readily seen that we may give by food combinations any proportion of albuminoids to carbohydrates that we may desire, in our feeding rations.

#### ANALYSES OF FOODS FED.

The following analyses were made by Prof. W. H. Wiley, Chief Chemist of the department of Agriculture, Washington, D. C. To this department, whose value is too often underrated, I tender thanks for the services rendered, services of a character that I have a strong hope of soon seeing at our own department.

Water	$\mathbf{Ash}$	Albuminoids	Carbohydrates	Fibre	Fats
Dried Blood		70.87			
Corn 8.17	1.37	10.33	70.87	4.64	4.82
Ship Stuff 9.22	3.02	16.10	54.86	12.66	4.14

Rating a lb. of fat as equal to 2.40 lbs. of carbohydrates and adding the fibre, as usual, to these materials, we have in corn one lb. of albuminoids to every 8.4 lbs. carbohydrates, and one lb. of albuminoids in shipstuff to every 4.8 lbs. carbohydrates. Thus the nutritive ratio, as it is called, is narrower in ship stuff than in corn, and the narrowest ratio of all food materials is blood, which is almost wholly albuminoid.

#### FEEDING TRIAL.

July 4, 1884, two lots of three pigs each, were put up in separate pens and fed, wet to a dough, the following foods three times daily, namely:

Lot 1-weight 106 lbs. for the three pigs-food, shipstuff.

Lot 2-weight 111 lbs. for the three pigs-food, corn.

Lot 1-weighed Aug. 19, 197 lbs.-gain 91 lbs.

Lot 2-weighed Aug. 18, 190 lbs.-gain 79 lbs.

Lot 1-ate 334 lbs., and lot 2 ate 397 lbs.

Pounds of food for one of gain, for lot 1, 3.67 lbs.

Pounds of food for one of gain, for lot 2, 5.02 lbs.

The economy of shipstuff compared with corn used has been noted by me every year for 7 years, the figures of which have elsewhere been given, and are as 108 is to 100. In this trial whole corn was given for the first 46 days, after which corn meal was given to whole corn fed lot, and no weights were taken until I began to feed dried blood with shipstuff Nov. 4, to make the ratio of albuminoids greater. To 75 lbs. of shipstuff, 25 lbs. of blood were given, so that the ratio of albuminoids to carbohydrates, after Nov. 4, was as 1 to 1.64, or 1 lb. of the former to 1.64 lbs. of the latter, being a very high proportion of albuminoids or muscle-making food. Nov. 4, lot 1 weighed 352 lbs. and lot 2 weighed 335 lbs. When weighed Dec. 8, lot 1 tipped 466 lbs. and lot 2—434 lbs. The pigs gained faster on blood and ship stuff than on corn meal. The blood cost \$20 a toñ.

The blood was simply dried blood used in the fertilizer trade, and a very poor sample of it. Here is a case of eating our cake and keeping it, too, for the blood is sold in the pig for more than its value as a fertilizer. When given to a pig, about of its manure value is left in the manure heap and is very rich in the nitrogen so valuable for winter wheat. In former trials of such manure for crops, I have shown that here is a place where science has practically aided agriculture.

Pig 1, of lot 1, gave a slaughtered weight of 109 lbs., weight of leaf 5 lbs. Taking a given rib, for each test, about the center of the spinal column, I found 3 ribs weighed 1 lb. 6 oz. Of this roast 15 ounces were fat—10\frac{3}{4} ounces lean and 1\frac{1}{4} ounces were bone.

Pig 1, of lot 2, slaughtered 116½ lbs.; the leaf weighed 5½ lbs. The roast, cut

from same ribs as from pig 1, weighed 2 lbs. 2 oz. Of this the lean was 12 oz., the fat 24 oz. and the bone 2 oz. The percentage of lean to fat in the ship stuff, or albuminoid food fed pig, was 71.6 per cent. The percentage of lean in the corn, or carbonaceous food fed pig was only 50 per cent., or the former had 43.2 per cent. more outside fat that could be separated by a knife than the latter. This difference was plainly visible to the eye.

Pig 2, of lot 1, slaughtered 124½ lbs. Its leaf was 6 lbs., rib roast, as before, 15 lbs., lean of rib 10 oz., fat 12 oz., bone 2 oz. and kidneys 9 oz.

Pig 2, of lot 2, slaughtered weight 116½ lbs.; leaf 6 lbs. 6 oz.; rib roast 1 lb. 6 oz.; lean of rib 6½ oz.; fat of rib 14½ oz., and bone 1 oz. Lean to fat of pig 2, of lot 1—83.3 per cent. Lean to fat of pig 2, of lot 2—44.8 per cent. Proportion of fat to lean in corn fed pigs over shipstuff fed pig 85.9 per cent. The proportion of leaf to weight of shote is less in the shipstuff fed pig than in the corn fed pig. The relative weight of kidneys is well worthy of consideration.

Pig 3 of lot 1—live weight 154 lbs.; weight of blood 5 lbs. 1 oz.; weight of intestines and contents, 11½ lbs.; weight of heart and lungs, 2 lbs. 13 oz.; weight of liver and gall, 3 lbs.; weight of spleen, 8 oz.; weight of ham, 10½ lbs.; weight of fat of ham, 2 lbs. 6 oz.; weight of lean meat of ham, 7 lbs. 2 oz.; weight of bone of ham, 15 oz.

Pig 3 of lot 2—live weight 126 lbs.; weight of blood, 4 lbs.; weight of heart and lungs,  $2\frac{1}{2}$  lbs.; weight of liver and gall,  $1\frac{7}{8}$  lbs.; weight of intestines and contents.  $11\frac{7}{8}$  lbs.; weight of spleen, 6 oz.; weight of ham,  $8\frac{1}{2}$  lbs.; weight of fat of ham, 2 lbs. 13 oz.; weight of lean of ham,  $4\frac{3}{4}$  lbs.; weight of bone of ham, 15 oz.

Percentage of fat to lean on ham of shipstuff fed pig, 33.3 per cent.; in corn fed pig, 59 per cent. of fat to lean. The per cent. of fat in corn fed pigs over fat in shipstuff fed pigs is 71 per cent.

### FAT IN LEAN MEAT.

Two pigs of each lot were examined for the proportion of fat in the lean meatthat is fat among the fibres and not the fat that could be separated by a knife. The test was made from meat selected from both the ham and the loin, and was taken from identically similar locations. Under the microscope little difference was noted between lots one and lots two. Prof. P. Schweitzer, Chemist of the Agricultural College, analyzed the samples with the following result: Lot 1-the shipstuff or albuminous fed pigs, gave 51 per cent. of fat, while the corn or carbonaceous fed lot contained, among the fibres of the lean meat, 10 per cent. of fat, or 52.5 per cent. more than shipstuff fed lot. The average per centage of fat in corn fed pigs over that in shipstuff fed pigs, for all the tests, if weight of leaf, weight of outside fat and of fat of lean meat, are considered, is 52.4 per cent. Now, as, ordinarily, 44 per cent. of the live weight of a fat pig is fat, it will be seen that a most radical and important difference is made in the character of a pig for food by the two systems of feeding. This is a second year's trial, and, after witnessing the results. I have not a doubt that an invaluable fact is ascertained in these trials of great importance in animal nutrition and for meat consumers. I have but little doubt that this fact touches questions in animal health, for excessive fatness is not conducive to good health, and rations that force or require unnatural work of the organs concerned in nutrition, impair their normal action; and I suggest that our excessive loss from certain diseases in this State may be traced to faulty nutrition from

excessive use of corn or other unnatural and ill-balanced rations. A review of the relative weights of the vital organs tends to confirm this view, for it is seen that these organs weigh more after the albuminous food or shipstuff ration. Thus the kidneys of the corn fed pig were 44 per cent, lighter than those of the shipstuff fed pig; the blood 3.6 per cent, less per lb. of live pig; the liver about 3 per cent, less. Fuller work is needed, however, on this point, and will be given, and these facts regarding vital organs are now mainly suggestive.

While every fact given has been very carefully taken, and made reliable, yet I have deeply to regret that I did not have the means and time to make an exhaustive study of the subject. Every animal should have been tested in full for all of its proximate organic constituents, for weight of blood and every vital organ. Unavoidable calls in other directions limited my work. I may repeat again, that we are building up a farm below the level of the equipment of ordinary farms, from the income of the farm, without outside aid. Volunteer experiment work of this kind is necessarily very limited.

Another year, we hope, will make this work complete, especially so, if the much needed aid now sought from the State is secured.

Summarizing the points of interest in this trial, to the practical farmer, we get the following:

First—A pound of shipstuff, for 8 years, under weights, has made more growth than corn. Second—The manure from shipstuff is worth over twice as much as from corn, and therefore shipstuff should be fed at home rather than sent to enrich the east. Third—Less than 4 lbs. of shipstuff will make a lb. of pig, or about 16 lbs. of pig for the weight of a bushel of corn, whereas the farmer expects but 10 lbs. from a bushel of whole corn. Fourth—The shipstuff gives a much larger proportion of lean pork, and will tend to make pork much more eaten and a healthier food. Fifth—The vital organs, so far as tested, weighed more when pigs were fed shipstuff, and hence, this fact is likely to have some relation to health. Sixth—I may repeat what I have said for years from other experience, that the German tables and the theories upon which they are founded need important modification.

I believe these facts related showing so wide a modification of the composition, of the animal (we have known that color and flavor of animals vary with food,) arising from the food given are contrary to the views held by physiologists and are new. Doubless they indicate that the character of fat cattle may be influenced by food and tend to make the dressed weight of the breeds at fat stock shows poor evidence of the relative value of the breeds for meat, unless compared from animals fed similarly.

As this experiment work is connected-with a college for instruction in agriculture, I may be pardoned for referring to an unfortunate and too common belief, arising from various causes, that our work of instruction and experimenting represents "Book farming"—that is, farming upon mere abstract principles. However much men may have been misled by hasty generalizations from science, so called, but really not science—"Book farming," in its unsavory signification, belongs now, if anywhere, to city amateurs. In experimenting here, it is sought by chain and scale to obtain from nature accurate answers to the practical questions upon which farmers desire information; and in teaching it is sought to inform the student of the acquired facts, not fancies, in each department of farming. Thus the work here is the precise opposite of what is understood as "Book farming," and indeed is more practical than ordinary farming, for it bases its operations upon facts acquired by accurate tests, while ordinary farming is based upon cursory observation that is very conflicting, farmers agreeing upon few important operations.

The experiment here detailed has a scientific as well as a practical value, for it may be repeated with substantially the same results the world over. It is not a matter of individual opinion but a record of nature's own answers as catechised through these pigs, and nature is always consistent with herself. This difference of fat and lean in the hogs fed can only be explained by the difference in the effects of the two kinds of food used. The radical change by food here given, I may be pardoned for saying, is of the nature of a discovery and there are millions in it for our farmers. Our pigs, while having a large proportion of lean meat, were in fine market order.

This Agricultural College Farm, during the hard season just past, paid its manager, and paid every other bill, and gave a balance of \$1,280, although without the equipment for successful management. But schools of instruction to serve their purpose should not be expected to be sources of profit in agriculture more than elsewhere. The receipts of the farm are necessary for experimentation and illustration, without which the work is comparatively useless.

Respectfully submitted,

J. W. SANBORN.

# XIII. NORMAL SCHOOL.

# FACULTY.

Samuel Spahr Laws, LL. D., President of the University, Professor of Metaphysics.

> DAVID R. McAnally, Jr., A. M., DEAN, Professor of Pedagogics and English.

JOSEPH FICKLIN, PH. D., Professor of Mathematics and Astronomy.

> Paul Schweitzer, Ph. D., Professor of Chemistry.

Wm. A. Cauthorn, A. M.,

Assistant Professor of Mathematics.

S. M. TRACY, M. S.,
Professor of Botany and Entomology.

MICHAEL M. FISHER, A. M., D. D., LL. D., Professor of Latin and Lecturer on Roman Education.

A. F. Fleet, A. M.,
Professor of Greek and Lecturer on Greek Education.

James Shannon Blackwell, Ph. D.,
Professor of Modern Languages and Lecturer on Oriental and Mediæval Education.

Mrs. O. A. Carr,

Principal of Ladies Department and Adjunct Professor of English.

CONRAD DIEHL, Professor of Art.

Woodson Moss, M. D.,
Professor of Anatomy and Physiology.

Benjamin Franklin Thomas, Ph. D., Professor of Physics.

J. W. SPENCER, B. A. Sc., A. M., PH. D., (GOTT.), Professor of Zoology, Mineralogy and Physical Geography.

> CHRISTOPHER G. TIEDEMAN, A. M., LL. B., Lecturer on Missouri School Law.

> > J. P. ROYALL, Instructor in Book-keeping.

The enrollment of the Normal Class for the past year has been as follows:

First Semester	29
Second Semester	45
Total for the year	74
Candidates for Graduation:	
Elementary Degree, PE. P	12
Academic Degree, PE. B	12
Total Candidates	24

# CONDITIONS OF ADMISSION TO THE NORMAL SCHOOL.

No student shall be admitted to any class of the Normal College until he shall have had recorded to his credit, on the books of the University, a passing grade of 80 on a scale of 100 in the following subjects, viz.: English, [including Grammar, Spelling and Reading], Arithmetic, Geography and United States History. This passing grade may be obtained either by regular work in the academic classes, or, in the case of new students, by special examinations, which examinations will, in all cases, be under the direction of the heads of those departments to which the subjects above mentioned respectively belong.

Students may, upon satisfactory examination, be admitted to advanced standing in the department, under the general rule of the Faculty governing promotions.

# DEGREES GRANTED BY THE NORMAL COLLEGE.

- I. Principal in Pedagogics (Pe. P.)
- II. Bachelor of Pedagogics (Pe. B.)
- III. Master of Pedagogics (Pe. M.)

Students are graduated in two distinct Normal courses, one academic, and the other elementary.

The Elementary Normal Degree (Pe. P.) is conferred upon those students who complete the "Public School" Normal course, extending over two years, and arranged to meet the requirements of the School Law of the State in the preparation of teachers for the district schools of Missouri. The work necessary for this degree will be found in the course of study which follows:

# COURSE OF STUDY FOR ELEMENTARY DEGREE.

	JUNIOR YEAR.	Hour
First Semester.	Algebra, Elementary Pedagogics and Form Study. Geography, Physical and Political. English Analysis and Rhetoric.	
Second Semester.	Plane Geometry Pedagogics—School Law Civil Government and U. S. History Form Study and Book-keeping.	

# SENIOR YEAR.

First Semester.	English Literature and History  Elementary Physics  †Pedagogics, Mental and Moral Philosophy  Anatomy and Physiology $(\frac{1}{2})$ Zöology $(\frac{1}{2})$	
Second Semester.	Botany, Descriptive and Structural Elementary Chemistry †Pedagogics, Science and-History of Education Form Study, Elocutionary Reading.	

"Section 7077 (Revised Statutes of Missouri) Public School Laws of Missouri:
"No person shall be granted a certificate to teach in the Public Schools established under the provisions of this chapter, who is not of good moral character, and qualified to teach Orthography. Reading, Penmanship, Arithmetic, English Grammar, Modern Geography, the History of the United States and Civil Government.
"No certificate shall be granted for a longer period than one year, unless the

person examined, in addition to the above, is found capable to impart instruction

in the elements of the Natural Sciences and Physiology."

The work to be done in the common school is thus provided for by law.

† The Academic and Elementary classes are united for work in Pedagogics during the Senior Year.

# ACADEMIC NORMAL DEGREE (PE. B).

The higher degree, that of Bachelor of Pedagogics, is conferred upon regular graduates of the University in any one of the four academic courses who supplement their academic work by two semesters of Normal instruction. Students graduating from this course are qualified by the accurate and extended study upon which their professional work rests, to take positions in the secondary and higher schools of the State or to superintend the work of others. It is hoped that all students graduating from the University, with the intention of teaching, will so adjust their studies as to connect themselves, during the last year of their stay in Columbia, with the Normal Department. The extended course of academic study leading to this degree is shown in the University Table of Synchronistic Curricula.

The work in Pedagogics corresponds with that laid down for the Senior Year of the elementary course.

The conditions of entrance to Normal classes, so far as the passing grade of eighty in elementary subjects is concerned, apply to academic graduates equally with our students.

# DEGREE OF MASTER OF PEDAGOGICS (PE. M.).

The third degree granted by the Normal College is that of Master of Pedagogics (Pe. M.). This degree is conferred only after due examinations in the five schools of science, and in any four of the five schools of language.

# STATE CERTIFICATES.

A business advantage is afforded to graduates of the Normal Department of the University in receiving from the State Superintendent of Public Schools, State Certificates, entitling them to teach, upon proper contract with the local board, in any county of the State without re-examination. The language of the State Superintendent on this point is as follows:

"To graduates from your full course I will issue State Certificates (on parchment and permanent). To those from your lower course (the Pe. P.'s), a special for two years."

This secures to all our graduates, about to enter upon their professional duties, legal certificates, upon which valid contracts may be made with Boards of Directors.

Special attention is given to letters of inquiry from persons desiring assistance in employing teachers, and the graduates of the Normal Department are thus put in direct correspondence with those who wish their prefessional services.

During the past two years most of the technical work of the Normal Department has been divided among the members of the Academic Faculty, and instruction has been given in courses of lectures, each professor dealing with the subjects and methods that come in his line of work. These courses of special lectures comprised the history of education among the ancients, both Oriental and European, during the middle ages and in modern times. Besides the history of education, practical instruction in the best methods of teaching grammar, arithmetic, algebra, history, botany and other subjects was given by the professors in charge of these branches, and to complete the work, the President of the University has each year given a course of lectures on the "Relation of Psychology to the work of the Teacher."

One item of the work done by the Normal class last year, under the direction of Prof. Tracy, was the identification and naming of the shrubs and trees found growing on the University campus. The following is a copy of the list thus prepared:

#### BOTANICAL NAMES.

Abies Canadensis. Abies excelsa, Abies nigra, Acer platanoides. Acer saccharinum. Acer dayscarpum, Aesculus Hippocastanum. Carva alba. Carya amara, Carya porcina, Catalpa bignonioides. Catalpa speciosa, Cercis Canadensis. Colutea arborescens, Cratægus æstivalis, Cratægus Crus-galli, Cratægus tomentosa, Cratægus var. mollis, Cydonia vulgaris, Diospyros Virginiana, Euonymus atropurpureus. Fraxinus Americana, Fraxinus excelsior, Fraxinus quadrangulata, Fraxinus viridis, Gleditschia triacanthos,

#### COMMON NAMES.

Hemlock Spruce, Norway Spruce, Black Spruce, Norway Maple, Sugar Maple. White Maple, Horse Chestnut, Shell-bark Hickory, Bitter-nut Hickory, Pig-nut Hickory, Common Catalpa, Catalpa. Red Bud, Bladder-Senna, Red Haw. Cockspur Thorn, Black Thorn, Downy Black Thorn, Quince, Persimmon, Burning-bush, White Ash, European Weeping Ash, Blue Ash. Green Ash, Honey-Locust,

Juglans cinerea. Juglans nigra. Juniperus communis, Juniperus Virginiana, Ligustrum vulgare, Liriodendron Tulipifera, Lonicera sempervirens, Lycium vulgare, Maclura aurantiaca. Menispermum Canadense, Morus rubra, Negundo aceroides. Philadelphus coronarius. Pinus Austriaca, Pinus mitis. Pinus Strobus. Pinus sylvestris. Platanus occidentalis, Populus alba. Populus dilatata, Populus monilifera, Prunus Americana. Prunus Chicasa. Prunus Cerasus. Prunus serotina. Prunus Persica. Prunus spinosa, Pyrus Malus, Pyrus prunifolia, Pyrus communis, Quercus coccinea. Quercus imbricaria. Quercus Prinus, Quercus ruber, Rhus Toxicodendron. Ribes aureum. Ribes Cynosbati, Ribes rotundifolium, Robinia Pseudacacia. Rosa canica. Rosa Gallica. Rosa Eglanteria. Rosa rubiginosa, Rosa setigera. Rosa sulphurea, Rubus Idæus, Rubus villosus.

Rubus occidentalis.

Salix Babylonica,

Salix nigra,

White Walnut. Black Walnut. Juniper, Red Cedar, Privet. Tulip Tree, Trumpet Honeysuckle, Matrimony Vine, Osage Orange, Canadian Moonseed. Red Mulberry, Box Elder, Mock Orange. Austrian Pine. Yellow Pine, White Pine, Scotch Pine, Sycamore. White Poplar, Lombardy Poplar, Cotton-wood, Red Plum, Chickasaw Plum, Morello Cherry, Wild Black Cherry, Peach, Damson Plum, Apple, Siberian Crab Apple, Pear, Scarlet Oak, Laurel Oak, Chestnut Oak. Red Oak, Poison Ivy, Mountain Currant, Prickly Gooseberry, Gooseberry, Black Locust, Dog Rose, Provence Rose, Eglantine Rose. Sweet Brier Rose, Climbing Rose, Yellow Rose, Red Raspberry. Blackberry, Black Raspberry, Weeping Willow, Black Willow,

Salix alba var. vitellina. Salix alba. Salisburia adiantifolia, Sambucus Canadensis. Solanun Dulcamara. Symphoricarpus racemosus, Symphoricarpus vulgaris. Syringa vulgaris, Tamarix Gallica. Tecoma radicans, Thuja occidentalis, Elmus Americana, Ulmus alata, Ulmus fulva, Viburum opulus, Viburum prunifolium. Vitis Labrusca, Wistaria Sinensis,

White Willow. Golden Willow, Ginko Tree. Elder. Bittersweet, Snowberry, Coral-berry, Lilac. Tamarisk, Trumpet Creeper, Arbor Vitæ. White Elm. Winged Elm, Slippery Elm, Snowball, Black Haw, Fox Grape. Wistaria.

Total, 94 species.

A great variety of rare trees will be transferred this summer from the Horticultural grounds to the campus. They will be carefully labeled.

The practical character of work such as this will be seen at a glance and its value, as applied in country schools, will be fully recognized. The children of each school should learn the lessons of nature at their feet.

The first semester is devoted to the study of school management under the direction of the Dean of the Department, while the available time of the second semester has been divided as appears in the following table:

Subject.	Professor.	Time, weeks.
Chinese and Indian Education	Blackwell	. 1
Greek Education	Fleet	. 1
Roman Education	Fisher	. 2
School Law	Tiedeman	. 2
Arithmetic Methods and Metric System	Cauthorn	. 1
Algebra Methods	. Ficklin	. 1
Botany	Tracy	. 2
Grammar.	McAnally	. 2
U. S. History.	McAnally	. 2
Farm and School	Sanhorn	. 1
Metaphysics	Laws	. 2

# AMENDMENT TO SCHOOL LAW.

Section 7,077 was amended by the Thirty-third General Assembly, 1885, to read as follows: "No person shall be granted a certificate to teach in any of the public schools established under the provisions of this chapter who is not of good moral character, and qualified to teach orthography, reading, penmanship, arithmetic, English grammar, modern geography, history of the United States and civil government: provided, that if any patron of any public school in this State demands, in writing, that instruction in physiology and hygiene, with special reference to the

effects of alcoholic drinks, stimulants and narcotics generally upon the human system, shall be given in the public schools of which such person is a patron; then it shall be unlawful for the board of directors, or the board of education of such school district, to exclude such instruction from such public school. But such instruction shall only be given to the child or children of such patron or patrons demanding the teaching of the same. And provided further, that after the 1st day of September, A. D. 1886, no certificate shall be granted to any person to teach in the public schools of this State, and no teacher shall hereafter be authorized to teach therein who shall not have passed a satisfactory examination in physiology and hygiene with special reference to the effects of alcoholic drinks, stimulants and narcotics generally uponthe human system."

Instruction in accordance with the provisions of this section was given during the second semester to the candidates for graduation.

There will be instruction in general history, according to the requirements of the school law, the works of Thalheimer and Swinton being the basis of instruction.

# XIV. LAW SCHOOL.

# FACULTY.

Samuel S. Laws, LL. B., LL. D., President of the University.

PHILEMON BLISS, LL. D., Resident Professor of Law and Dean.

Joseph G. Norwood, M. D., LL. D., Professor of Medical Jurisprudence.

Christopher G. Tiedeman, A. M., LL. B., (Columbia Col., N. Y., Law School.)

Resident Professor of Law.

Hon. Arnold Krekel, LL. D., U. S. District Judge, Lecturer upon Federal Jurisprudence.

Hon. Henry S. Kelley, LL. D., Judge of the 29th Circuit.

Lecturer upon Criminal Law, Pleadings and Practice.

Hon. Seymour D. Thompson, LL. D., Judge St. Louis Court of Appeals,

Lecturer upon Law of Corporations.

Hon. Jno. Hinton, Judge of Probate, Columbia, Lecturer upon Probate Law and Practice.

MEMBERS OF THE SE	ENIOR CLASS A	ND GRADUATES OF 1885.
Burnes, Alongo Doniel	Diatta City	Platta assets M.
Clary, Joseph M	Flatte City	Flatte county, Mo.
Dorman G. M	Eldorado	Illinois.
Ewing, James Charles Haynes, Thomas Nother	Fulton	Callaway county, Mo.
Haynes, Thomas Nathan Horine, George I	Strasburg	Cass county, Mo.
Horine, George L Lyon, Albert William	Columbia	Boone county, Mo.
Lyon, Albert William.  McGregor, Joe	Edina	Knox county, Mo.
McGregor, Joe McMillan, Thomas Jefferson	Wavnesville	Pulaski county Mo.
McMillan, Thomas Jefferson Neville, James Tilford	Bem	Gasconade county Mo
Neville, James Tilford Payne, Samuel Albert	Springfield	Greene county Mo
Payne, Samuel Albert	Everton	Dade county Mo
Prewitt, Robert C	Goorgetown	Kontucky
Reed, Thomas C	Georgetown	Illinois
Robb. Willi	o ackson vinc	·····IIIIII018.
Rowden D.	gackson	Cape Girardeau county, Mo
Rutled Robert Lincoln	Vienna	Maries county, Mo.
Rutledge, Robert Shelton Shull, Samuel S	Pierce City	Lawrence county. Mo.
Shull, Samuel S	Platte River	Buchanan county. Mo.
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Skinker, Cornelius Hite	Eureka	St. Louis county, Mo.
Snider, John Aaron	Jackson	Cape Girardeau county, Mo.
Taylor, William Price		
Thomas, James M		
Tincher, James William	Concord	Callaway county, Mo.
Wood, Henry Parker	Shilohville	Tennessee.

### MEMBERS OF THE JUNIOR CLASS.

Barton, Joseph	White's Store	Howard county, Mo.
Bishop, James Lewellan	Trenton	Grundy county, No.
Bishop, Stephen Smith	Saline	Mercer county, M.
Brierly, James Scott	Strasburg	Cass county, Mo.
Clark, Lewis Vaughn	Butte City	Montana.
Hall, Francis Preston	Monticello	Lewis county, Mo.
Hartley, Elmer Ellsworth		
Houston, Henry Mortimer	. Mound City	. Holt county, Mo.
Hurd, Thomas Franklin	Florida	. Monroe county, Mo.
Jesse, Frank Rupel	.Mexico	. Audrain county, Mo.
Jones, Lewis Franklin	Houstonia	.Pettis county, Mo.
Lindsley, Charles Daniel	Cameron	.Clinton county, Mo.
McDonald, Winthrop Gaines	Palmyra	. Marion county, Mo.
McElvain, Jason Neely	Warrensburg	.Johnson county, Mo.
McKinley, John C	Howard	.Putnam county, Mo.
Metcalf, Joseph William	Trenton	.Grundy county, Mo.
Mitchell, Cliff Newlin	. Dennison	.Texas.
Sheets, Meritt P	.Patterson	. Wayne county, Mo.
Strop, Charles Franklin	.St. Joseph	Buchanan county, Mo.
Vaughn, Frank Elmer	.Springfield	.Greene county, Mo.
Walker, Robert	.Hermann	.Gasconade county, Mo.
Wharton, Jacob Franklin	. Knob Noster	.Johnson county, Mo.
Wharton, William Nelson	.Knob Noster	Mohnson county, Mo.
Zeller, Frank Lindley	.Maitland	. Holt county, Mo.

# TERMS OF ADMISSION.

For admission to the Junior class, no special examination is required; but the student, if unknown to the Professor, must bring testimonials of good character. Those who pass examinations in the Law studies of the Junior year, and in English Grammar and Prose Composition, will be admitted to the Senior class.

# Course of Instruction.

The Law term commences on the second Tuesday of September and closes the last week in March. The full course is for the term of two years, and embraces the various branches given below. The mode of instruction is by daily examination upon the text-books, by lectures upon special titles, and by the exercises of a moot court.

No one will be admitted to the Senior class, as a candidate for a degree unless he shall be able to sustain an examination upon the studies of the Junior year. In exceptional cases, when there is a failure upon one or two branches only, the examination as to those branches may be postponed to some period during the term.

The Junior class will take an elementary course in common law, will study thoroughly the law of contracts, the law of torts, outlines of the law of real prop-

erty, international and constitutional law, logic and ethics. The chief text-books will be Ewell's Blackstone, Parsons on Contracts, and Cooley on Torts.

The instruction in international and constitutional law, logic and ethics, will be principally by lectures, but with reference to, and examinations from, Kent's or Woolsey's International Law, Creasey's English Constitution, Cooley's Treatise upon the Federal Constitution, Jevons' Lessons in Logic, Wayland's or Haven's Ethics. In International and Constitutional Law, further reference is had to Dana's Wheaton, to Freeman and Stubbs on the English Constitution and to the larger works upon our own Constitution, which the student will have opportunity to consult.

The Senior class will study the Law of Evidence, of Pleadings, of Real Property, of Bills and Notes, Equity Jurisprudence and Medical Jurisprudence, and will review the Law of Contracts with the Junior class. The text-books used will be Greenleaf's Evidence, Vol. 1, Bispham's Equity, Stephen on Pleading, Bliss on Pleading, Tiedeman on Real Property, Field on Corporations, and Pollock on Partnership. Lectures will also be given upon Practice, upon Commercial Paper, and upon extraordinary remedies.

Students who do not wish to take the full course, and who are not candidates for the degree of Bachelor of Laws, will be permitted to take an elective course, and pursue any branches whose recitations do not interfere with each other.

Logic and Ethics are taught by the President of the University, the other branches named above by the Professors of law, and, in addition, the non-resident lecturers will give courses of lectures upon special subjects.

The members of the Junior class will be examined upon the topics above named to be studied by them, and will also be examined by the Professor of English upon English Grammar and Prose Composition, and if successful they will be entitled to admission to the Senior Class.

A knowledge of Book-keeping is so essential to the practical life of a lawyer, that its study, here or elsewhere, will be insisted on before graduation. An opportunity is given for its study under Professor Royall, and a certificate from him will be required.

The classes are favored at times with lectures upon special subjects by gentlemen not connected with the school.

The additional studies of the Junior year will compel ordinary students, although they enter with some preparation, to take the full two years course. The Law Faculty have seen, with pain, the labors of bright and promising young men in cramming themselves for examination by substantially one year's study. Their success is their greatest misfortune. They must have time before daring to think of themselves as lawyers, to grow into the habits of thought, into the language, the spirit of the profession; and this can only be the work of years. A writer in the May number of the American Law Review, in speaking of those who successfully Pass examination after one year's study, says: "Their rapidly acquired knowledge will not stay by them; they have eaten but not digested. They have, however, gained the title of lawyers, they are admitted to the bar, they have no longer the stimulus to study, and careful observation shows that their studies practically cease. On the other hand, had a definite time of pupilage been required, these same students would have lost none of their ambition and zeal, and by taking their studies more slowly, would have called other faculties than memory into constant play. Their studies would have been spread over three or five years instead of one; they would have had time to review their work, to comprehend its full bearing, to discern 'the reason whereof' without which 'the law is unknown,' and for which time and spontaneous thinking are requisite. They would imbibe and digest principles instead of cramming facts, and could see these principles applied to actual cases, and thus get some understanding of the practical side of their profession, of the discipline and habits of business, while responsible to no client for their errors. In the end such students would be apt to become sound lawyers, instead of dwarfing their prospects at the very outset."

#### THE MOOT COURT

Is held every Monday, and is made to represent some actual court, with its clerk and sheriff; and every matter discussed arises in some supposed cause. Regular pleadings are required—many of them drawn according to the Common Law and Equity system—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 filed, and no one in default will be permitted to argue a cause. A member of the Senior class is called to sit as special judge in each cause, who, the next week, gives his opinion, in writing subject to appeal of the presiding professor. Essays upon legal topics are also read each week.

### DEGREE LL. B. (LEGUM BACCALAUREUS.)

Those of the Senior class who sustain an examination will be entitled to the degree of Bachelor of Laws.

Every candidate for this degree is required to file with the faculty an essay or thesis upon some topic connected with his studies.

All who receive the degree are by law admitted, without further examination, to practice in the Missouri Courts.

#### EXPENSES.

Tuition for the term is \$40.00, payable in advance. An extra fee of ten dollars is charged for book-keeping. Boarding is had in clubs at \$2.25 per week, and in families from \$3.00 to \$4.50. No fee for incidentals. The law students have access to any of the other schools, without any additional expense.

#### GENERAL REMARKS.

The success of the College of Law has been such, that with continued diligence in following up and perfecting the system adopted, no fears are entertained of its future. The Law Faculty are more and more satisfied that the highest results cannot be reached by lectures alone or chiefly, however clear and thorough they may be, but that the student should, as far as possible, be required to study the textbooks and be subject to a daily examination upon their contents, accompanied by oral explanations by the teacher. In this way, and this only, can the subject be fixed in his memory, and by this only can be secured the formation of proper habits of study. The lecture has been combined with study, and, in subjects, which for want of time and proper books cannot be otherwise taught, is chiefly relied on. Thus we have, in addition to the daily examinations upon text-books, usually one daily lecture, sometimes two.

For further information address either of the Professors of Law, and for catalogue address J. H. Drummond, Librarian of the University.

# XV. MEDICAL SCHOOL.

(Founded 1845.)

# FACULTY.

Samuel S. Laws, LL. D., President of the University.

Joseph G. Norwood, M. D., LL. D., Dean, Professor of Medical Jurisprudence.

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

Andrew W. McAlester, A. M., M. D., Professor of Surgery and Obstetrics.

Samuel S. Laws, M. D., I.L. D., Professor of History and Philosophy of Medicine.

Woodson Moss, M. D.,
Professor of Anatomy and Physiology.

S. M. TRACY, M. S., Professor of Medical Botany.

B. F. Thomas, Ph. D., Professor of Physics.

J. F. HANNA, A. M., M. D.,

Professor of Practice of Medicine and Therapeutics.

### SPECIAL LECTURERS.

J. M. ALLEN, M. D., Liberty, Mo., Lecturer on Diseases of the Gastro-Intestinal Canal.

J. E. Tefft, M. D., Springfield, Mo., Lecturer on Genito-Urinary Surgery.

A. B. MILLER, M. D., Macon, Mo., Lecturer on Gynecology.

WM. DICKINSON, M. D., St. Louis, Mo., Lecturer on the Discases of the Eye.

W. V. WALKER, M. D., Mexico, Mo., Lecturer on Clinical Surgery.

W. B. DEJARNETT, M. D., Columbia, Mo., Lecturer on the Disease of Children.

# MEDICAL CLASS, 1884.

Name.	Residence.
Adams, Jos. Linn	Missouri.
Alexander, James Mason	
Brainard, Zach	"
Bosserman, David Wenrick	"
Brooks, Robert Rolla	"
Blackwell, Zadock Thomas	66
Craig, Charles Henry	"
Cunningham, Edward Finnegan	California.
Dunn, Bascom Henry	
Davis, John Morgan	"
Gremp, Henry Jackson	"
Hartley, Lorenzo Dow	Georgia.
Jesse, James William	
Keim, John Augustus	
Mosely, Charles Guerrant	
Mason, William Hubbard	66
Miller, William Henry	
Smith, George P	4.6
Thomas, Charles Rainey	Illinois.
Zillman, August William	

### GRADUATES OF 1883-4.

Name.	Residence.
Morris, Christopher C	Missouri.
Nowierski, Bronislaw J	4.6
Reagan, Charles W	
Ragan, Sylvester	
Valedictorian—Christopher C. Morris	"

The twenty-third course of instruction will begin on the second Tuesday of September, 1885, and continue until the end of the college year, the first Thursday of June, 1886.

The course is as full and complete as is given in any school in this country. The introduction of the graded course (Junior and Senior classes), requiring two (2) terms of nine (9) months each, gives the beginner (Junior) ample time for the thorough investigation of the primary branches of Medicine before entering upon the study of the higher; and also gives the Senior student the opportunity of visiting patients with the members of the Faculty, and reading other works than textbooks. The Juniors are not advised to see patients, simply from the fact that they are not prepared to appreciate them; but the more advanced students, who are now able to discriminate between diseases enjoy most excellent clinical advantages.

#### CLINICAL ADVANTAGES.

The clinical material is obtained from a population of from 1,000 to 1,500 of the poorer class of people of the city and county, who are willing and anxious to obtain the free advice and treatment of the Medical Faculty and students. The

physicians of the city give valuable assistance by turning over their pauper patient to the school. Besides, the County Poor-house, to which the Faculty have free access, contains constantly from 50 to 60 inmates. A student is taken directly to the bedside of a patient and the case is placed under his special care.

Our real clinical advantages are, perhaps, unsurpassed by any school in the State.

A real clinic is one, where the student, under the guidance of the Professor, is brought in *immediate* contact with the patient, at the onset of the disease and sees and examines, and prescribes for him, from day to day, until recovery or death takes place; thus he sees and treats the disease from beginning to end and is afforded an excellent opportunity to observe the disease in all its phases, and to see for himself the effect of treatment.

It is manifest that clinics of this sort are far more advantageous to the student than when he only sees the patient once, twice or at most thrice weekly, when the examinations, as a rule, are conducted, mainly, by the Professor and the effects of treatment are observed and noted by him, and handed to the student.

In the one case, the student is in immediate contact with the patient, examines for himself, diagnoses for himself, treats for himself (until he gets in the fog, when he calls on his Professor for aid) and is thus taught self-dependence; in the other case the Professor does the examining, the diagnosing, the prescribing and observing, and reports to the student, only bringing him in mediate contact with the patient, causing him to feel little or no responsibility, and as far as the student is concerned, this so-called clinic amounts to little more than a didactic lecture.

In order to form an estimate of the available clinical material in Columbia, we desire to call attention to the following state of fact, to wit: That during the year 121 cases have been in charge of and treated by the members of the Senior class.

Of this number 8 were obstetrical cases. We respectfully submit that the kind of clinic of which our Seniors have had actual experience alone deserves the name.

The Boone County Poor House furnishes, annually, fifty or more patients, these the students visit at pleasure.

The above record is a demonstration of abundant clinical advantages available to the students of the University Medical School, by actual attendance on the sick and afflicted in their homes and situated, therefore, as they will be met with in actual practice. Indeed, it is plain that some measure of restraint is needed here where students are active in their search for cases. We the more confidently challenge attention to the state of fact here presented, for the reason that misapprehension has occasioned misrepresentations, a resort, in some known cases, to the use of unprofessional influence to divert students from this school by putting the school itself in a false light. The profession of the State cannot be indifferent to this sort of behavior on the part of any of its members.

Experience has demonstrated the practicability of the above plan for obtaining clinical material, and also that the association and relation of the student with the Patient is so intimate, that what is not possible in hospital clinics, he becomes familiar with the peculiarities of family practice, which he is to meet in his professional life. The professor of Surgery requires every Senior student to perform on the cadaver, before the members of the class, all the more common operations; and it is a fact, worthy of notice, that hardly a student has graduated from this school, who did not have under charge during his senior year, at least one case of labor.

#### GENERAL PLAN OF INSTRUCTION.

Instruction in this school is given by lectures, recitations and clinical teaching. It has been the custom of the Faculty for several years to invite, with the approval of the Local Board, gentlemen from a distance other than the Special Lecturers, to visit the College and severally give a series of lectures on some medical subject, that each may select. This has proven to be a great assistance to the Faculty, and of marked benefit to the students.

It has occurred, in an instance of marked interest, that the Diploma of our Missouri University Medical School has been recognized by one of the leading German Universities after careful inquiry, and its holder was, without examination, honored as Doctor of Medicine.

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. The high standing, throughout the country, of the graduates of the medical department of Virginia University, is sufficient evidence of the value of this method of teaching.

The duties of the school are so distributed as to allow of the study of branches which, while they are of vital importance to the well educated physician, are almost entirely ignored in many of the schools of this country.

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. For instruction in this most important and beautiful subject, the students are arranged in classes of five each. 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 farther cost, to all students who enter the Medical Department, of pursuing such studies as they may desire in the academic course. Or academic students may take Anatomy and Chemistry in the medical course, preparatory to entering on the full medical course, after graduating in Arts and Science. Some students pursue this plan every year.

A full course of lectures is given on Medical Jurisprudence, to the combined classes in Law and Medicine. When necessary, for the more complete understanding of the subject, the lectures are illustrated by the use of accurate anatomical models; and anatomical and physiological instruction is given, incidentally, for the special benefit of the law students.

This department is equipped with models in clastic 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 Clastic Man, a complete and accurate model of the male humau body. The figure is five feet ten inches in height, and is composed of ninety-two eparate parts, which may be detached from one another. It exhibits over twolf sthousand details of the viscera, muscles, nerves, blood-vessels, etc.; in short, al that is usually embraced in a complete treatise on anatomy.

Also, Auzoux's female pelvis, with the external organs of generation, the lumbar vertebræ, 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 clastic, 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 special 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 Leipsic.

No physician can truthfully claim to be cultivated in his profession who is ignorant of the history of its rise and progress, and of the grounds upon which rests its claims to rank among the sciences. Nor is any man thoroughly qualified to practice medicine, who is ignorant of the science of Psychology. The lectures on psychological medicine are illustrated by models and drawings, of the most accurate and artistic construction. An epitome of the Science of Psychology, in a course of twelve lectures, will be given to the class next year by Dr. Laws.

#### 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 Demonstrator, the student must, by dissection, acquire a practical knowledge of the human body in all its parts.

It is only at the dissecting table that its anatomy and its physiology can be understood. Hence, students who are applicants for graduation are required to perform all the principal operations on the cadaver, in the presence of the class, and to explain, minutely and accurately, the anatomy of the parts involved, each step of the operation, and the method of dressing.

President Laws has placed at the service of the Medical School, his rare lecture-room helps, including a complete set of Marshall's Plates, large and small, last edition; the entire collection of over one hundred colored plates used, by the late Dr. Crosby in his lectures, and prepared at an expense of about \$1,500; also, the plates of Hirschfeld, Rudinger and others, together with over 400 projections, etc., etc.

Instead of the customary oral examinations for the Degree of Doctor of Medicine a series of written examinations are held during the course by the different members of the Faculty; and the degree of M. D. is conferred upon such students as prove their fitness to receive it. These examinations are preliminary to the final examination by

#### THE BOARD OF EXAMINERS.

This Board consists of Physicians, selected from different Medical Districts, who are eminent in their profession, and possess the confidence of their brethren and of the public, and who have no other relation to the school. Their appointment is for four years, and is made by the Curators of the University. They may be nominated by the different District Medical Societies, and their names sent to the Board of Curators for confirmation.

The duty of this Board consists in examining the candidates for the Degree of Doctor of Medicine, on all the branches embraced in the curriculum of the School. They subject to examinations all students whose names are presented by the Medical Faculty, as having attained, during the session, the requisite grade of scholarship. It is by the decision of this Board, only, that the names of students are presented to the general Faculty, and through it to the Board of Curators, as worthy to receive the Doctorate.

Candidates for graduation must have a standing of 85 per cent. in Anatomy and Physiology; of 60 in Chemistry, Toxicology and Pharmacy, and of 75 per cent. in all other studies.

It is the aim of this department to make its honors testimonials of merit, and not mere certificates of an attendance on a prescribed course of instruction.

Medical students are required to take a prescribed course in Analytical Chemistry under the direction of the Professor of Chemistry and Toxicology.

The next session will begin on the 2d Tuesday, September 8, 1885, the Junior course will close the 1st Thursday in May, 1886, and the Scnior course the 1st Thursday in June, 1886. The fee for tuition for the term of eight or nine months is \$40.00; for demonstrator's ticket, \$10.00; both are payable at the time of matriculation, and required of every student. No deductions are made for students entering after the beginning of the session.

A preliminary examination in English is required of those students who apply for admission to the Senior class. The number of persons who can neither spell correctly nor write the English language grammatically, that are annually graduated from our medical and other schools, is astonishingly large. Such graduates are a disgrace to the profession and to the institutions granting them diplomas. The fault rests originally with the primary schools, but it is, doubtless, a graver fault for those who govern professional schools to admit such uneducated persons to their classes.

All students, before entering the Senior class, must pass a satisfactory examination upon:

- (1.) English Composition.
- (2.) Rhetoric (Hart).
- (3.) History of the United States (Swinton) and its Geography.
- (4.) Arithmetic (the four fundamental rules, denominate numbers and common fractions) and the elements of the metrical system.

The students will be taught, during the session, the metric system of weights and measures, and the elements of Physics.

The metric system is now almost universally used, and it is of the most vita. importance that medical men should have a knowledge of it.

Any student who has a good common school education, ought to pass such an examination. As the course of instruction is arranged, all students are urged during their Junior Year, to pursue, in the academic department, any of the above branches in which they may be deficient, or, if necessary, all of them without extra cost. Then after the Junior course has been completed, and they return to enter upon the final, or Senior year, they should, with ease, be able to pass the preliminary examination in English. It will be observed that this examination is not required of the Juniors. A young man has, however, the privilege of having the examination whenever he thinks he is prepared for it, whether it is at the beginning or end of the Junior year, or beginning of the Senior year.

These literary and scientific examinations are conducted by the Professors of the University having these subjects in charge, and the grade attained passes to the credit of the student on the books of the institution.

No student is allowed to attend both courses in medicine the same year. Before he is permitted to present himself before the Board of Examiners as a candidate for graduation he must either have attended two courses of eight and nine months in this institution, or in lieu of the eight months' course present tickets showing that he has attended at least one course in some regular reputable medical college, and in either case must pass a satisfactory final examination in the subjects embraced in the Junior and Senior years.

Proposed academic year arranged and recommended for those students who expect to enter the Medical School. All students having occasion to do so will find it to their advantage to take notice of this preparatory work and to shape their course accordingly:

FIRST SEMESTER.

SECOND SEMESTER.

II. Latin.

III. Physics.

IV. Zöology and drawing. English Composition.

Arithmetic and Metrical system.

II. Chemistry.Political Science.English Composition.Botany and Book-Keeping.

Medical School fees are not charged till the Medical School is entered.

The following shows the studies of the two classes for the entire college year.

#### JUNIOR CLASS.

Anatomy, Physiology, Chemistry, Materia Medica, Medical Botany, Surgery, Physics, Metric System of Weights and Measures, Laboratory Work, Dissecting and Medical Jurisprudence.

## SENIOR CLASS.

Anatomy, Toxicology, Surgery, Obstetrics, Practice of Medicine, Lectures by Special Professors, Laboratory Work, (optional), Dissecting and Medical Jurisprudence.

## TEXT-BOOKS AND BOOKS OF REFERENCE.

ANATOMY-Gray, Wilson, Leidy.

SURGERY-Asharst, Gross, Erichsen.

Physiology—Dalton, Flint, Carpenter.

PRINCIPLES AND PRACTICE OF MEDICINE—Flint, Niemeyer, Watson.

MATERIA MEDICA-Bartholow, Biddle, Farquharson.

CHEMISTRY-Fownes.

Obstetrics-Schrader, Playfair.

DISEASES OF WOMEN AND CHILDREN—Thomas, West, Smith.

HISTOLOGY-Frey, Rindfleish's Pathological Histology.

PATHOLOGY-Virchow, Paget, Gross.

Toxicology—Taylor.

OPHTHALMOLOGY-Wells, Williams.

OTOLOGY-Toynbee, Turnbull.

MEDICAL JURISPRUDENCE—Taylor, Wharton and Stille.

NERVOUS DISEASES-Hammond, Reynolds.

DISEASES OF THE HEART AND LUNGS-Flint, Loomis, Walsh.

CLINICAL MEDICINE-Trousseau, Graves, Bennett.

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

#### REQUISITES 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 course of pupilage in this institution.
- 6. He must notify the Dean of the Faculty, privately, on or before the first week of April, of his intention to become a candidate for graduation at the ensuing Commencement.
- 7. He must write a thesis on some medical subject, of not less than fifteen pages. The thesis may be in English, Latin, German or French. It must be of his own composition, and in his own hand-writing. It must be handed to the Dean before the first of May, accompanied with the Treasurer's receipt for the graduation fee of \$5.
- 8. Every candidate must appear before the members of the Faculty for examination on the various branches of medicine taught in this school, at the time appointed for such examinations, and before the Board of Examiners, at the hours appointed by the Board.
- 9. 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.

10. If a candidate is rejected his thesis and graduation 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.

#### VALEDICTORY.

The candidates for graduation must select, on or prior to April 8th of each year, one of their number as valedictorian; in the event that they fail to select a representative, the Medical Faculty may appoint as valedictorian, the gentleman having the highest course and examination standing.

#### PURCHASING TEXT-BOOKS.

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 further information, in relation to the school, address,

J. G. NORWOOD, M. D.,

Dean Medical Faculty, Columbia, Mo.

For catalogues, address,

WOODSON MOSS, M. D.,

Secretary Medical Faculty, Columbia, Mo.

Carson, Arthur C., M. E	Assayer, Butte City, Montana.
	Mining Engineer, Silver City, N. M.
	" " " "
	Engineer, U. S. Topog. Survey.
	Colorado Springs, Col.
Gibb, Frank W., C. E., M. E1882	Mining Engineer, Silver City, N. M.
Painter, W. R., C. E	Colorado.
Schrantz, A. B., C. E	Engineer, U. P. R. R.
	Engineer, Frisco Railway.
	Houston, Mo.
Davis, Floyd, C. E., M. E., Ph. B1883	Professor Mechanics and Metallurgy, Va. Ag. and Mech. College, Blacks- burg, Virginia.
Alexander, Curtis, C. E., M. E1884	Assayer, Leadville.
Claypool, W. M., C. E., M. E1884	Bentonville, Ark.
Gallaher, P. C., M. E	Assayer, Leadville.
Neustaedter, A., M. E	
Wilson, Frank, C. E	Des Moines, Iowa.

#### COURSES OF STUDY.

The work of the school is done in two departments: Preparatory and Technical.

## PREPARATORY DEPARTMENT.

#### ENTRANCE EXAMINATIONS.

For the benefit of persons who have not enjoyed such facilities elsewhere, a Preparatory Department has been established. The School of Mines does not undertake to do the work of the Common School, therefore all candidates for admission will be examined as follows:

ARITHMETIC: Fundamental rules; fractions, common and decimal; denominate numbers; percentage, including interest.

GRAMMAR: Orthography; principles of punctuation; use of capitals; etymology; construction of easy sentences.

GEOGRAPHY: Descriptive, with special reference to Europe and the United States.

#### COURSE OF STUDY.

#### JUNIOR CLASS.

First T	ERM.	SECOND	TERM.
Arithmetic	5 hours per week. 5 hours per week. 5 hours per week.	Algebra (c)	5 hours per week. 5 hours per week. 5 hours per week.

#### SENIOR CLASS.

FIRST TERM.	SECOND TERM.
Algebra (b)	Algebra (a) 4 hours per week. Geometry (a) 4 hours per week. Chemistry . 4 hours per week. Physics (a) . 4 hours per week. Trawing 4 hours per week.

Rhetorical exercises (compositions, readings, etc.,) weekly throughout the entire course.

The satisfactory completion of this course shall admit to the Technical Department without further examination, and shall also entitle the student to a certificate, should be desire it, showing the studies pursued and the grade in each.

For the benefit of those who may find it impossible to enter at the opening of the year, the Arithmetic and Grammar of the first term of the Junior year will be offered the second term also, if called for by a sufficient number of persons.

#### OPTIONAL STUDIES,

Open only to those who have completed satisfactorily all the work of the Junior Year, except Algebra (c). These classes will be organized when called for by at least five students, sufficiently prepared for the work upon which they desire to enter: Latin, German, Spanish, English Literature, Anatomy, Physiology and Hygiene, Civil Government, Rhetoric, Logic, Political Economy, Mental and Moral Philosophy, Book-keeping.

#### TECHNICAL DEPARTMENT.

Candidates for admission will be examined in all the studies of the preparatory course.

#### FOR THE DEGREE OF MINING ENGINEER.

First Year: C

FIRST TERM.
Chemical Philosophy.
Blowpipe Analysis.
Trigonometry.

Field Practice.

Drawing.

FIRST TERM.

Second Year: Quantitative Analysis.

Metallurgy.

Differential Calculus.
Higher Surveying.

Shades, Shadows and Perspective.

Drawing.

Determinative Mineralogy.

Geology.

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SECOND TERM.
Chemical Technology.
Qualitative Analysis.
Descriptive Geometry.
Analytical Geometry.
Land Surveying.

SECOND TERM.
Quantitative Analysis.
Metallurgy.
Mine Engineering.
Calculus. (a)
Steam Engine.

Assaying.

FIRST TERM.

Third Year: Quantitative Analysis.

Metallurgy.

Analytic Mechanics.

SECOND TERM. Quantitative Analysis.

Graduation Thesis.

## FOR THE DEGREE OF CIVIL ENGINEER.

FIRST TERM.

SECOND TERM.

First Year:

Chemical Philosophy. Blowpipe Analysis. Trigonometry. Field Practice. Drawing.

Chemical Technology. Qualitative Analysis. Descriptive Geometry. Analytic Geometry. Land Surveying.

FIRST TERM.

SECOND TERM.

Mine Surveying.

Steam Engine.

Second Year: Roads and Railroads, etc.

Higher Surveying. Topographical Drawing.

Differential Calculus.

Shades, Shadows and Perspective.

Calculus. Civil Engineering. Assaying.

Astronomy. Geology.

FIRST TERM.

SECOND TERM.

Third Year: Field Work. Railroad Location. Mechanism. Analytic Mechanics. Drawing.

Practical Topography. Applied Mechanics. Drawing.

Graduation Thesis.

The courses of study will be rigidly enforced upon all students, candidates for the degrees of the Institution. The degrees awarded are Civil Engineer (C. E.) and Mining Engineer (M. E.).

Certificates and diplomas are issued only at the public commencement.

## DEPARTMENTS OF INSTRUCTION.

#### MATHEMATICS.

#### PROFESSOR EATON.

Algebra and Geometry are taught by W. G. Clark, and Arithmetic by E. & Drake.

While due attention is given to the mental discipline of the student, he is especially drilled in the solution of practical examples. The practical utility of Mathematics in the arts is continually kept uppermost.

As the course is progressive, students desiring to enter any class must pass rigid examinations in the subjects previously studied by the class.

The studies of this department are as follows:

## IN THE PREPARATORY COURSE.

#### JUNIOR YEAR.

First Term.—Arithmetic (completed), Barnes' National by Ficklin, five hours per week.

Second Term.—Algebra (c, beginning), Olney's Complete, to Calculus of Radicals, five hours per week.

#### SENIOR YEAR.

First Term.—Algebra (b) to Quadratics, five hours per week.

Geometry (b) (Plane), Olney, five hours per week.

Second Term.—Algebra (a) (book completed), four hours per week.

Geometry (a) Solid and Spherical, four hours per week.

#### IN THE DEGREE COURSES.

#### FIRST YEAR.

First Term.—Trigonometry, four hours per week.

Second Term.—Analytic Geometry (Plane), Bowser, Part I., four hours per week.

Descriptive Geometry, Church, Part I., four hours per week.

#### SECOND YEAR.

First Term.—Analytic Geometry (Solid), Part II., Differential Calculus, Bowser, to Chap. VIII., four hours per week.

Shades, Shadows, and Perspective, Church, Part III., two hours per week.

Railroad Curves, and Calculation of Earthwork, Searles, for students in Civil Engineering, two hours per week.

Second Term.—Differential Calculus (completed), Integral Calculus with application to Geometry, Bowser, four hours per week.

#### THIRD YEAR.

First Term.—Analytic Mechanics, Bowser, four hours per week.

Second Term.—Applied Mechanics, Rankine, four hours per week; for students in Civil Engineering.

As elementary Algebra and Geometry lie at the basis of any substantial attainments in mathematics as well as in engineering, great care is taken to secure a thorough mastery of these subjects in the preparatory course.

Information in regard to advanced work for graduate students may be had upon application to the Professor in charge of this department.

## GENERAL CHEMISTRY.

#### PROFESSOR WAIT.

Instruction in this department is given to two classes—the Preparatory, and First class.

#### PREPARATORY CLASS.

In this class, chemistry is commenced with the second term, and is continued throughout the term. The class is taught the elements of the subject, being fully illustrated by instructive and interesting experiments, and such information is given, aided by suitable text-books, as will prepare them for the higher classes in Chemical Philosophy and Chemical Technology, and also for entering upon laboratory work, which is commenced the following year.

#### FIRST CLASS.

(Text-Books), Chemical Philosophy (Cooke), Chemical Technology (Wagner).

The duties of this class continue throughout the year; there are four recitations each week. Chemical philosophy is first introduced and continued through the first term. The application of arithmetic to chemistry is given a prominent place in this class. Students are required to perform numerical examples, thereby fitting themselves for the solution of many questions constantly occurring in the advanced department of analytical chemistry.

The second term is given to a course in Chemical Technology. Among the subjects discussed in this course are: Products of Chemical industry; Glass; Mortars; Cements; Paper; Sugar; Wine making; Oils; Paints; Dyeing and Printing; Bleaching; Gas; Fuel, etc., etc.

#### ANALYTICAL CHEMISTRY.

#### PROFESSOR WAIT.

First Year.—Blowpipe Analysis (Elderhorst's Manue)); Qualitative Analysis (Fresenius).

Second Year.—Quantitative Analysis (Fresenius); Quantitative Analysis (Fresenius); Assaying (Mitchell).

Third Year.—Quantitative Analysis (Fresenius).

Instruction in this Department is thoroughly practical, and extends throughout the first, second and third years. There is a commodious laboratory, supplied with gas and necessary apparatus, also balance room and mineral collection. In the basement is the new assay laboratory, which has been recently fitted up; three new furnaces for the assay of gold, silver, lead and copper ores have been placed in position and other apparatus provided to make this department complete in every respect.

#### FIRST CLASS.

The students in this class spend four hours each day at practical work; each one is provided with a working table, apparatus and chemical reagents.

The course is begun with blowpipe work; the student is made acquainted with the reaction of known bodies, and he is then required to perform the experiments for himself, thus becoming familiar with the behavior of such bodies before the blowpipe, and enabling him to detect the composition of substances given to him for identification:

Qualitative analysis is also taken up, and is taught by lectures and experiments, the student being required to repeat at his working table, the tests for bases and acids which have been shown to him. After passing through a systematic course of qualitative analysis, he is required to analyze and report upon substances, including mixtures of salts, also alloys, ores of lead, copper, zinc, antimony, iron, etc., etc., soils, insoluble silicates and mineral waters.

## SECOND AND THIRD CLASSES.

Quantitative analysis constitutes the work of these classes. Those students who have completed satisfactorily the work given to them during the first year, and who have passed a practical examination, lasting one week, are allowed to commence quantitative analysis.

The quantitative course includes analyses, either partial or complete, of the following series, each estimation being, at least, duplicated:

(\*1) Zinc Sulphate; (2) Barium Chloride; (3) Alum; (4) Chrome Alum; (5) Sulphate of Iron and Ammonia; (6) Blue Vitriol; (7) Calcite; (8) Calamine; (9) Galena; (10) Chalcopyrite; (11) Orthoclase; (12) Kaolin; (13) Hematite; (14) Pyrolusite and Chlorine, valuation; (15) Soda Ash, valuation; (16) Bleaching powder, valuation; (17) Cerusite; (18) Smithsonite; (19) Blende; (20) Coal, proximate; (21) Coal, ultimate and heating power; (22) Stibnite; (23) Realgar; (24) Blast furnace slag; (25) Lead furnace slag; (26) Pig iron; (27) Bismuth litharge; (28) Commercial lead; (29) Spelter; (30) Regulus; (31) Beryl; (32) Illmenite; (33) Chromite; (34) Saltpetre soil; (35) Mineral water.

Besides this course there is the usual practice in the fire assay of the ores of lead and silver, of argentiferous and auriferous native compounds and artificial products, and in the docimastic valuation of the ores and the most prominent metals.

A short course in quantitative blowpipe analysis is required. Also a course in determinative mineralogy.

Special students may pursue, at their discretion, the study and analysis of any class of ores or metallurgic 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 by devoting their entire time to it during the course of a single year.

The last General Assembly made an appropriation to be devoted exclusively to the building of a new Chemical Laboratory, which will be commenced at an early day, and will approach completion by the beginning of the next term.

#### METALLURGY.

#### PROFESSOR WAIT.

The instruction in this department is given by lectures, supplemented by laboratory practice, and is illustrated by diagrams, models and specimens. The course is introduced by zinc, and is followed by lead, silver, nickel, mercury, copper, iron, antimony and gold. The principles of furnace construction, of slag formation, and of general metallurgical operations, are discussed throughout the course, and special illustrations are given of all the methods described. The students are re-

<sup>\*</sup>Those in italics are partial analyses.

quired to solve problems involving the discussion of the desirable methods of treatment of ores of stated composition, under given economical conditions, and to accompany the solution with plans and estimates for works to carry out the method. In the lectures and other exercises of this department, full cognizance is taken of the peculiar economic conditions surrounding metallurgical industry in this country, and especial reference is had to the staple metallic products of Missouri—iron, lead and zinc. Studies are made of the local iron establishments, and excursions are made to other iron works, as well as to those at which lead and zinc ores are practically treated.

#### GEOLOGY AND MINERALOGY.

In the second year, the students have recitations, lectures and laboratory exercises, in the determination of a series of fifty-five well selected mineral species, with special reference to the ores of the metals and their associated ganges. These exercises are followed by lectures and recitations (based on Dana's Manual) on dynamical and historical geology. The lectures on Lithology, and on mineral veins and ore deposits, together with an account of the chief geological features and modes of occurrence in the principal mining districts, complete the course.

#### CIVIL ENGINEERING.

#### PROFESSOR EMERSON.

In this department, practical work in the field forms a prominent, and, as we believe, a somewhat distinctive feature. The use of instruments in the field, by all the students of Civil Engineering, begins with the second term of the first year, and is continued throughout the course. A complete familiarity with the manipulation of all the instruments in common use by engineers and land surveyors, is taught to the students by systematic practice, in the room and in the field. He is made familiar with the chain and its capabilities; the needle compass, the solar compass, the transit instruments, the leveling instrument, the sextant, the plane table, the barometer, and the various tools used in drawing and plotting. Saturday and Monday of each week, are devoted to practice in the field, and where necessary, a long time is taken for excursions to the mines, furnaces, bridges and railroad constructions of the country.

The field practice consists of land and railroad surveying, by all the methods in use. Tracts of land, roads and streams are surveyed and plotted; contours of the adjacent country are made with the leveling instrument, the barometer, etc.; railway curves are calculated and set out upon the ground, earthwork is measured and estimated from the embankments and excavations of the railroad. A general system of triangulation of the country about Rolla, is begun from a base line carefully laid by the students, which will be extended from time to time for their instruction.

Such parts of astronomy as relate to land surveying or engineering, are carefully studied, and are illustrated by stellar and solar observations.

A general course of descriptive engineering, on the basis of Mahan's Civil Engineering, revised, by Professor Wood, runs through the second term of the second year.

Gillespie's treatise upon Roads and Railroads, and Huntington's Road Master's Assistant, form two of the studies of the Engineering course.

#### DRAWING.

#### PROFESSOR EMERSON.

During the preparatory course the students are instructed and drilled in freehand drawing and the elements of geometrical drawing. The freehand includes drawing in outline and shading, both from copy and model, with pen and pencil. The geometrical drawing includes practice in the use of instruments, elementary projection drawing and some practice in lettering.

Instruction in crayon and water-colors is provided for those who show themselves able to profitably take such work.

During the technical course the instruction in drawing embraces the following subjects:

First Year.—Topography, Lettering and Mechanical Drawing.

Second Year.—Problems in Projection drawing, Stereotomy, Masonry and Machine drawing.

Third Year.—Engineering drawing and Practical Topography.

During the first year the student is exercised in lettering in order to acquire a rapid and neat system of letter formation. The topographical and mechanical drawings are neatly finished in ink, and the latter are appropriately colored to represent the different materials employed.

In the second year exercises are given in the construction of problems in descriptive geometry, and in shades, shadows and perspective. The problems are drawn with pen and India ink, and are constructed on mathematical principles, diplaying all the difficult problems of the intersection of curved surfaces, and the representations of warped surfaces having two or three directrices.

The drawing during the second and third years consists in the solution and complete representation on paper of practical problems, such as the draughtsman meets in practice. Neatness and accuracy of execution, as well as a thorough familiarity with each of the subjects, is required.

#### MINE ENGINEERING.

#### PROFESSOR EMERSON.

This is taught entirely by lectures. The subjects of system and attack and exploitations of mineral deposits; of shafts, adits and levels; timbering of mines; subterranean transportation, hoisting, pumping, surface transportation, and mechanical concentration, are considered in elaborate detail.

The course is fully supplemented by extended field practice, the important parts of the civil engineering course, and by extended instruction in assaying and analytical chemistry, and in drawing plans and sections of mines and practical work.

#### MECHANISM.

#### Professor Emerson.

An extended series of lectures is given upon this important subject, which is intended to be a descriptive epitome of the principles which govern, and the forms and mode of construction of machines used in industrial pursuits, embracing prime movers, machines of transmission, and as much as is possible in the course of applied machinery.

#### STEAM ENGINE.

A series of lectures is given, historical, descriptive and theoretical, of the steam engine, embracing all the varieties in use, and their special applications.

#### FEES, EXPENSES, ETC.

The fees for instruction, etc., at the School of Mines and Metallurgy, are the same as at the other departments of the University, viz: An annual entrance fee of \$10, besides an assessment of \$5 per term for incidentals and for the use of the library. Special students are subject to the same charges; 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 exercises of the drawing room require also a small expenditure, annually, for materials. Text-books and all requisite materials for students can be procured in Rolla, either from dealers, or, in the case of chemical apparatus, from the school, at the usual rates.

A fee of \$5 must be paid, before graduation, for the degree; a fee of \$1 for the preparatory certificate.

Good boarding at places approved by the Faculty can be obtained at from \$3.50 to \$4.00 per week.

The following is a careful estimate of necessary expenses for a college y	ear:
Tuition	\$20 00
Contingent expenses for Laboratory	20 00
Board, fuel, washing and lights from	150 00
Books, stationery, etc 8 to	20 00

#### ADMISSION.

For requirements, see Courses of Study, page 130.

Before matriculation or entrance upon the duties of the school, the Treasurer's receipt for entrance fee and for the incidentals of the term [or a statement from the Director that the time of payment has been extended], and also certificates of examination giving the grade made in each study, and signed by the instructor conducting the examination, must be presented to the Secretary of the Faculty.

No student shall be entitled to have his name enrolled on the class register of any instructor, nor be admitted to any class as a member, until he shall have signed his name on the Secretary's book and received a certificate to that effect, stating the course for which he has entered.

Entrance Examinations will be held Monday and Tuesday, September 21 and 22, 1885, at which time all candidates for admission are expected to be present.

The collegiate year opens on the third Monday in September. There is no suspension of exercises other than for examination between the two terms of the year.

### HISTORICAL, ETC.

The School of Mines and Metallurgy—a department of the University of the State of Missouri—is located at Rolla, Phelps county, on the line of the St. Louis & San Francisco Railroad, one hundred and thirteen miles southwesterly from St. Louis. The locality is pre-eminently healthful, is in the midst of an extensive and rapidly developing iron section, with districts abounding in lead and zinc deposits, within easy access, and thus affords excellent opportunities for the field study of some of the modes of occurrences of the ores of these metals, as well as for the practical investigation of their methods of treatment. Excursions for such purposes will constitute a prominent feature in the instruction of the advanced classes.

The institution was created by the legislative act of February, 1870, disposing of the Congressional grant of land for agricultural and mechanical colleges. It was formally opened November 23, 1871. The first class, of three members, graduated in June, 1874, having completed the full course. The thirteenth year of the Institution closes with this announcement and catalogue.

The design of the School of Mines and Metallurgy, in connection with the Agricultural College, is to carry out, to its amplest extent, the intention of the act of Congress, providing for education in the industrial arts. This has been kept prominently in view in arranging the curriculum of the school, in the selection of its apparatus, in providing its equipment and in the organization of its Faculty. It is a school of Technology, with Civil and Mine Engineering and Metallurgy, as specialties.

The school is farnished with apparatus, instruments, and other appliances for practical instruction and demonstration. It has a supply of excellent surveying, engineering and drawing instruments, physical apparatus, embodying the newest forms for illustration and research, together with diagrams and models for the illustration of metallurgic processes and engineering constructions. The laboratories for analyses and assaying have been increased in working capacity, and are amply furnished with apparatus and reagents necessary for practical instruction, and for any line of chemical and metallurgical research. The library has been selected with special reference to supplementing the labors of the class and lecture rooms, and consists, therefore, largely of standard reference works on the physical sciences, mathematics and technology.

The class and other rooms of the building are comfortably furnished, well lighted and well ventilated. The first floor is occupied by the analytical laboratory, the chemical lecture room and the room of the professor of geology. On the second floor are the public hall, library and engineering rooms; and in the third story are the rooms of the professor of mathematics, and rooms with ample accommodations for the Preparatory Department. The basement contains the assay furnaces and other appliances for metallurgical work. The laboratory is supplied with gas for the heat required in chemical analysis.

## CALENDAR.

#### 1885.

June 11th, Thursday, 10 A. M	Annual Commencement.
September 21st, Monday	First Term begins.
September 21st and 22d	Entrance Examinations.
December 18th, Friday	Close for Christmas Holidays.
1886.	·

January 5th, Tuesday, 9 A. M	Exercises resumed.
January 25th, Monday	Examinations begin.
January 30th, Saturday	Examinations close.
February 2d, Tuesday, 9 A. M	Second Term begins.
May 31st, Monday, 10 A. M	Yearly examinations begin.
June 10th, Thursday, 10 A.M	Annual Commencement.

## XVII. SCHOOL. OF ENGINEERING.

## FACULTY.

Samuel S. Laws, LL. D., President, Professor of Logic and Ethics.

THOMAS J. LOWRY, S. M., C. E., DEAN, Professor of Civil and Topographical Engineering.

Joseph Ficklin, Ph. D., Professor of Mathematics and Astronomy.

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

LIEUTENANT JOHN J. HADEN, (Detailed from the Regular Army.) Professor of Military Science and Tactics.

CONRAD DIEHL,
Professor of Drawing.

P. Bliss, LL. D.,
Professor of Law of Contracts.

S. M. TRACY, M. S., Professor of Economic Botany.

J. W. SPENCER, B. A. Sc., Ph. D., F. G. S., Professor of Geology and Mineralogy.

Benjamin Franklin Thomas, Ph. D., Professor of Physics.

# VISITING LECTURERS ON ENGINEERING: JAMES B. EADS, C. E., LL. D.

MAJOR CHARLES R. SUTER, Corps of Engineers of U. S. A.

LIEUTENANT SMITH S. LEACH, Corps of Engineers of U. S. A.

PROFESSOR GEORGE C. PRATT, Railroad Commissioner, State of Missouri, Visiting Lecturer on Railroad Engineering.

Note.—These important announcements are made by permission,

## 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.

Besides the application of the higher analysis to engineering investigation, the professional preparation of the students comprises the following subjects: The location and construction of roads, railroads, canals and water-works; the surveys and improvements of coasts, harbors, rivers and lakes; the determination of astronomical and geographical co-ordinates on land and at sea; the design and construction of roofs and trusses, girders and suspension bridges; drawing and constructing the various kinds of arches; the design, application and construction of wind and hydraulic motors, air and steam engines; blow pipe analyses of minerals, and economic geology, mineralogy, chemistry, elementary and applied; the art of war; the preparation of the various kinds of projections and drawings used by the military, topographical, civil and mine engineer, and the selection, tests and application of materials used in constructions, and papers and essays on professional subjects.

The sphere of the engineer is so broad and deversified that it is impossible for any one 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 fourth year of the course in science, three parallel courses have been arranged, so as to allow of option and diversity of special studies. In addition to the studies laid down in the engineering synchronistic table on next page, the engineering students will be required to take the following studies belonging to the first four years of the course in science: All the Mathematics and Physics, three semesters of drawing, and either three semesters of French, or three semesters of German, one semester of chemistry and one-half semester of chemical laboratory. 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-Topographical Engineering.

III—Military Engineering.

The great subdivisions of engineering, which are embodied in these courses, are road and railroad engineering, hydraulic engineering, bridge architecture and construction, topographical engineering, and, as prerequisite to the auxiliaries of these, engineering geodesy and practical astronomy.

The course in civil engineering, is designed for those who wish to make either road and railroad engineering, bridge construction, or river improvement, a specialty.

The course in topographical engineering is arranged for those students who find distasteful the application of the higher mechanics to civil constructions, and who may show, instead, special aptitude for geodetic work, and hydraulic engineering, viz.: Trigonometrical, topographical and geological surveying, practical astronomy

on land, and the surveys and improvements of rivers, lakes, bays and coasts. Since the U. S. Government began the geodetic, topographical and geological surveys of her territories, and gave fresh impetus, by liberal appropriations, to the surveys of her coasts, and the chain of great lakes on her north, there has been an incessant demand for men specially fitted for the important duties of the explorer, astronomer, topographer and geographical engineer. And now, that the attention of the nation is turned to surveying and improving the great rivers of the Mississippi basin, a broad field, inviting the labor of topographers, hydrographers and hydraulic engineers, is open at our doors. To provide for these and similar demands, the course in topographical engineering was instituted, and is now in full operation. The facilities for instruction in this course are very complete. Students taking the course in topographical engineering will have an opportunity, and be required to perform work as accurately as is done in the actual details of the U.S. Coast Survey, the geodetic surveys of our lakes and territories, and the surveys and improvements of our rivers, lakes, bays, harbors and coasts by the U. S. A. Engineer Corps. The course in Military engineering is essentially that of the U.S. Military Academy at West Point.

We especially ask the attention of those young men who desire to fit themselves for the duties 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 thirty-eight weeks; and the degree of surveyor (with its diploma) will be conferred upon those who complete this course.

The Professor of Engineering is the sworn deputy of the county surveyor of Boone for the corporate limits of the city of Columbia, and hence the surveys he here makes are legal—they are accurately made, carefully computed and plotted, and properly recorded on the records of the county. The fees received for this work are regulated by statute (see General Statutes of Missouri).

These surveys not only serve as means of instruction for the Surveying and Engineering classes, but they are also a source of financial aid to the students. The students assisting in these surveys will receive the fees provided by law for such work.

The methods of instruction embrace the use of text-books, which are changed from time to time, lectures (illustrated by diagrams of the great engineering and surveying operations and results of the present age) and actual field and observatory practice. And recognizing the truth of what Dr. Laws so well expresses, that "the primary aim of the academic schools of science and language is culture; that of the professional schools is practice; that self is the end of culture, but self is the instrument of 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 observatory, serve both to elucidate the principles and formula, and insure their ready and accurate application in professional life.

In addition to the field, class room, observatory and chart room work, the engimeering students have access from 8 A. M. to 6 P. M., each day, except Sunday, to the University Library, and also to the private library of the Professor of Engineering, which together contain nearly all the standard works on surveying, engineering geodesy and astronomy. These they are expected to make constant use of, and thus enlarge, by careful reference and judicious reading, their acquaintance with the subjects presented in the text-books and lectures.

We desire to call special attention to the increased facilities which this University now enjoys for teaching astronomy. It offers facilities for instruction in theoretical and practical observatory and sextant astronomy, equal to any in the United States. The most refined astronomical methods of the U.S. Engineer Corps and the U.S. Coast Survey, are taught by the head of the mathematical department, assisted by those who have had years of instruction and training at West Point and on the Coast Survey. With these facilities, young men can prepare themselves for efficient service on the astronomical parties of the great geodetic surveys of our states and nation; and can also acquire the nautical astronomy required in navigating a ship.

The attention of those interested in engineering and astronomy, is especially asked to the reports of Professors Schweitzer and Ficklin (see pages 48 and 55).

Our present professional force, and the increased facilities in apparatus and room furnished the department of Chemistry, Physics, Geology, Mathematics, Astronomy and Engineering, by the enlightened liberality of the Thirty-second and Thirty-third General Assemblies, are such that we can now offer a complete theoretical and practical treatment of the above great subdivisions of Engineering, Surveying and Astronomy.

During the summer of 1881 we visited the U. S. Military Academy, the Rensallear Polytechnic Institute, School of Mines Columbia College, Stevens Institute of Technology, Mass. Institute of Technology, Lawrence Scientific School, West Point, Troy, Sheffield Scientific School, Johns Hopkins University, the U. S. Naval Academy, and Washington University, almost all of the first-class Engineering Schools in the United States; and had the pleasure of gaining an insight into the internal workings of these schools, i. e., as to what they were doing, and how. And after a careful survey of the field of American Engineering, and a critical consideration of the work of our co-laborers in these schools, we found reason for few and very alight changes, indeed, in our course.

Report.—The following is the report of the Engineering Department for the Jear ending June 4, 1885:

Senior class	Regulars	10
Sophomore class	{ Regulars.   Irregulars.   Irregulars and Regulars.	10 18
Total		41

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 observations 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 fits it for an observer in the exact arts.

The engineering classes of 1877-78-80, laid an accurate base line and completed a trigonometrical survey of the University campus, horticultural grounds, and a part of the agricultural farm. In this trigonometrical frame work they filled the detail topography with the plane-table—plotting in the five-feet contour lines with the greatest accuracy. This system of triangulation of plane-table topography, thus begun, has this year been extended over the agricultural farm; and after this, it is hoped, will be gradually expanded till it eventually covers the entire State of Missouri.

With the money appropriated by the 32d General Assembly, this Department has purchased 1 plane-table, 1 level, 1 steel tape, (from Buff & Beyer); 1 patent telescope compass, (T. F. Randolph); 1 planimeter, 1 three-arm protractor, (Fauth & Co.), 1 pantagraph.

Members of the Senior Class have made surveys, horizontal and vertical, of the streets bounding the University campus, and have made plan and profile drawings of these streets, established a grade line and made an estimate of the cost of grading and graveling said streets.

I have instructed the class in descriptive geometry during the entire session. Of this class I make the following report:

For instruction in Descriptive Geometry, "Church's Descriptive Geometry" has been used as a text. Each member of the class has been required to construct graphically, all problems relating to Orthographic and Spherical Projections, and Shades and Shadows and Linear Perspective, given or suggested in the text. Besides, a number of practical problems like the following: In Spherical Projections each student was required to construct an outline map of the State of Missouri; in Linear Perspective, to construct the perspective of the Scientific building of the University, etc. I have endeavored to make the work very thorough and to see that each member of the class understood the principles involved and their practical application to the construction of projections in engineering work, to map drawing, perspective, etc.

During this session my colleague, Prof. J. W. Spencer, who is a graduate of the Engineering Department of his University, has delivered to the Senior Engineering Class an admirable course of lectures on Economic Geology and Geological Surveying.

Drawing has been made a more prominent feature of the course; and Warren's entire series of engineering drawing books is now used as the text. MacCord on Mechanical Drawing, and Smith on Topographical Drawing, are also used as texts-

The course in Topographical Engineering has been strengthened by giving greater prominence to the subjects of Hydrographic Surveying and Hydraulic Engineering.

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, 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 demands engineering and chemical skill, has already increased, and promises to further increase the number of students in this department.

THOMAS J. LOWRY,

## XVIII. SCHOOL OF MILITARY SCIENCE AND TACTICS.

#### PROFESSOR HADEN.

The conditions attached to entrance in this department, are continuance in the department during the scholastic year, attendance to be regulated as in the other departments, and finally the purchase of a uniform and a copy of Upton's Infantry Tactics.

The course of instruction includes recitation in the school of the soldier in Infantry Tactics, with practical instruction in the schools of the soldier and company, skirmish drill and target practice; artillery drill in the service of foot batteries.

In appointing Cadet officers, other things being equal, preference will be given those who take the course in Military Engineering.

Instruction will also be given by lectures on the Operations of War.

The total number of Cadets for the past year has been forty-seven (47). The progress made by them has been satisfactory.

There is open to students of the University a course in Military Engineering, which is included in the Curricula of the School of Engineering.

JOHN J. HADEN, First Lieutenant 8th U. S. Infantry, Prof. of Military Science and Tactics.

## XIX. SCHOOL OF ART.

#### PROFESSOR DIEHL.

#### FIRST YEAR.

1.—Recognition, naming and representation of all surface-forms by which regular solids are bounded. 2.—Laying out the superficies of solids (development), and folding of the same. 3.—Carving of solids out of soft substance. 4.—The four free curves of ornamentation. 5.—The drawing of these through fixed points. 6.—Color sensation produced by the mixture of pigments. 7.—Projected shadows of objects. 8.—Action of light upon solids. 9.—Pictorial representation by the students of objects at home—one each week

### SECOND YEAR.

1.—Representation of all the measures of solids by plan drawing. 2.—Plane cuts through them (sections). 3.—The most important problems of geometric construction. 4.—Representation of projecting and inverted surfaces by gradations of

light, in light, shade and shadows. 5.—The finishing forms of architecture. 6.—Surface decoration. 7.—Manifestations of the law of symmetry. 8.—The laws of the beautiful. 9.—Pictorial representation of objects at home—one each week.

#### THIRD YEAR.

1.—The vanishing points and lines of perspective. 2.—The various means employed for reproducing or multiplying a unit of ornament. 3.—Application of design. 4.—Style in ornament. 5.—Orders of Greek architecture. 6.—Gothic tracery. 7.—Anomalous vagaries harmonized by art. 8.—The line, considered as the only means for the portrayal of motion and emotion. 9.—Pictorial representation of objects at home—one cach week.

The expenses incident to this study are:

	zace outpource moracine to this study ure.		
1.	Drawing-book	10 ce	ents.
	Package practice paper, per 20 sheets		
3.	No. 4 pencil (Anchor 5 cents, Faber 10 cents)	5 ce	ents.
4.	Three cakes of water-colors	60 ce	ents.
5.	One box of instruments	50 ce	ents.
6.	Three brushes	15 ce	ents.
7.	Manual, Linear drawing No. 11	75 ce	nts.
	Total\$	2 25	

The book and paper will, when properly used, last one year; the water-colors from two to three years.

Report.—With the better accommodations in the new additions to the main building, the students of the Art Department will enjoy the advantages of drawing from real objects in the class rooms, especially, as the appointments of these rooms are much the same as are those of professional Art Schools.

The following important points cannot be too seriously urged on the attention and consideration of students—whatever be their aim or chosen vocation.

- 1. Geometry is the foundation of all the Sciences, of the Industries and of the Fine Arts. The Art Department deals with Constructive Geometry, which is a practical independent subject that is complete in itself, and without which Analytical Geometry were not. Constructive Geometry is not only the soundest preparation for the study of Mathematics, but it is the complement of the higher branches thereof.
- 2. Orthographic Projections (plan or working drawings) and Linear Perspective are based on Constructive Geometry.
- 3. The training of the eye to a correct observation of shapes of relative light or dark, and the exercise of the hand to make correct notations of such, constitute the sum total of free-hand perspective drawing. Of all organs the eye is the most essential in practical life—as it is the most useful. One well trained eye can direct many skilful hands. Among those that are destitute of one sense, the blind are the most helpless—and must be cared for—either by their relatives or by the State. In the Academic Course it is the highest aim to educate the sense of sight. Correct observation, alone, leads to correct imitation, and conversely, correct imitation develops the powers of observation—of understanding—of knowledge.
- 4. A correct judgment of visual forms and phenomena is impossible without a cultivated sense of color, and hence, special attention is given to this subject.

Mary D. Livermore says, "To-day an educated sense of color has a commercial value."

- 5. Of Art forms only such are presented in the Academic Course, as embody general principles that are active in nature. The most abstract Art conception will be utterly void unless it be clothed with the garb of nature to render it intelligible.
- 6. Form is the language of the Industries. All the sciences are pressed into the service of the Industries. The Industries are the chiefest source of a Nation's wealth—and amongst them Art Industry is the most lucrative, hence, the most important. That which distinguishes Art Industry from the Industries in general, is Art proper, which enters into it as a necessary ingredient, and therefore it is to be hoped that in the near feature the most liberal advantages may be afforded by the university of the people of Missouri to the gifted youth of the State for the pursuit of professional Art Study; i. e., Art as a subject for developing the feelings for "the True, the Good and the Beautiful," to a full consciousness in the minds of individual students—and not to serve as a means for imparting mere mechanical drill in the practice of processes, at the expense of Art Culture and relinement, and to the utter suffocation of the understanding and of creative growth—and this, not from any ideal, sentimental or visionary notions, but from the practical, hard-headed standpoint of dollars and cents.

Every student that is qualified to enter upon the University course—whether he bring to the work of the Art Department a conscious predilection (natural talent) or not—will make a progress in the study of Form and Art, that is fully commensurate with his efforts. The most faithful student in this, as in any branch of study, will ever achieve the best results.

CONRAD DIEHL,
Professor of Art.

## XX. COMMERCIAL SCHOOL.

#### BOOK-KEEPING.

#### J. P. ROYALL, Instructor.

This department has been in successful operation during the past five years in charge of J. P. Royall, a practical accountant and an experienced teacher of book-keeping.

An arrangement has now been effected by which the academic students of the University are instructed during the first three-fifths of the second semester without any charge. This course will cover fifty-four lessons, and embrace single-entry and double-entry book-keeping adapted to an ordinary wholesale and retail mercantile business, the opening and closing of books, partnership settlements and mercantile forms, including drafts, notes, accounts-current, etc. Those students who desire to pursue this branch further than is provided for without charge, and, who stand well in their other studies, will be permitted to continue this subject during the two-fifths remainder of the semester by paying a fee of five dollars.

Those who choose to pursue the more elaborate course, or who may study it as a profession, besides being practiced in the before-mentioned work, will be instructed in the shorter methods, and the most modern and approved forms of books in their adaptation to the various kinds of business.

The student is not permitted to copy his work from a text-book, nor is he required to study an elaborate treatise on the subject. The teacher has prepared for the student a small manual containing the fundamental rules, definitions and principles, and memoranda embracing a concise history of a series of business transactions, such as occur in a mercantile house, simple at first and gradually becoming more intricate, so that the student is placed in the actual work of keeping books; and, after a few weeks of class work, each is required to keep books as if he were alone and the only one doing the work, so that his time is employed in learning the art of keeping books rather than in studying the science of book-keeping.

The student is not assisted in work that he can accomplish without aid. Thus his efforts are not superseded by the work of the teacher, but he is encouraged and stimulated to habits of self-reliance, and, when these are attained, he readily becomes a competent book-keeper. The actual work of the counting house being thus introduced into the school-room.

An opportunity is here offered the students, both ladies and gentlemen, while pursuing their other studies, to acquire, incidentally as it were, a thorough knowledge of this important branch of a practical business education. By diligence the average student may accomplish this work in one semester.

Persons who desire to do so, may enter as *special students* in this department without joining other classes in the University, and, by devoting their whole attention to the subject, may acquire, in a very short time, a thorough knowledge of book-keeping.

#### EXPENSES TO STUDENTS WHO PAY.

#### Tuition Payable in Advance.

For Students of University, first semester\$10.00
For Persons not connected with the University, one semester or full
course
For academic Students, two-fifths of second semester 5.00
All students must provide themselves with Book of Instruction, Blank Books,
Stationery, etc., which will cost about two dollars.
Report.—The following is the report for the Department of Book-keeping for
the year ending June 4, 1885:
Students were enrolled as follows:
First Semester
Second Semester. 132:
Total
Less number enrolled both semesters
Whole number of individual names enrolled
Whole number enrolled last year without duplication
Increase

The following list comprises the names of students, who, having completed the prescribed course, and having obtained a grade of eighty-five, have been awarded certificates as competent Book-keepers:

Clary, J. M.

C'Rear, Jas. I.

Edwards, N. W.

Ewing, J. C.

Haynes, T. N.

Houston, H. M.

McElvaine, J. L.

McGregor, Jos.

O'Rear, Jas. I.

Rowden, R. L.

Strop, Chas. F.

Taylor, W. P.

Walker, Robt.

Wilcox, Frank E.

The larger number of those who pursued the partial, academic course, during the first three months of the second semester, is entitled to a passing grade.

The following is a list of students pursuing the more extended course, and who will be entitled to certificates at the close of the current year:

Doss, Thos. Lillard, Sissie Emberson, R. H. McCausland, R. L. Glasscock, E. H. Murrill, W. B. Haley, J. L. Royall, W. M. Hansman, C. A. Spotts, E. R. Harris, Thos. B. Sutton, R. E. Hockenberry, H. O. Turner, O. H. B. Humburg, A. P. Wilkinson, J. W.

J. P. ROYALL, Principal.

## UNIVERSITY LIBRARY.

## ACCESSIONS FOR 1884-5.

Source.	Book.	Pam.	Source.	Book.	Pam.
Agent	1		Poore, Benj. P		2
Amherst College		1	Pratt, G. C	1	
Astor Library		1	Pratt, G. C	204	
Boston University		2	Putnam Sons		
Cathel, Dr	1		Ragan, —		
Civil Service Commissioners		2	Rowell, Geo. P		1
Cockrell, F. M		1	Rollins, Jas. S	327	
Coleman, W. E		_	Royal Society of Canada	. 1	
Columbia College		2	Rutgers College		4
Cornell University		ī	Schweitzer, Paul	2	
Drury College		$\tilde{2}$	Saratoga Summer School		1
Gambier College		ĩ	Smithsonian Institute		ī
Georgia Dep't Agriculture		-	State Ag'l College of Kas		3
Ginn, Heath & Co			Tiedeman, C. G		
Gregory, John M		i	Trinity College		i
Hanover College			Tufts College		î
		3	University of Edinburg		•
Harvard College		3	" "Michigan		2
Homan, Geo., M. D		i	" Minnesota		2
Howard University			" New York		ī
Illinois—State Department		• • • • •	"North Carolina		î
Illinois Wesleyan University			" Rochester		2
Iowa Agricultural College			Trochester		ī
Jasper, Jno	• • • •	2	The South		i
Johns Hopkins University		Z	1 ennessee		i
Lathrop. —	1		I Ukia, gapan		ī
Lovell & Co. (N. Y.)	1		vermont		i
Mass. Agricultural College			Viiginia		i
Mass. Institute of Technology.			W ISCOUSIII		i
Med. Dep't University Cal			conego roronto		43
Medical Society California	• • • •	1	United States Government		1
Medical College of Virginia		2	Wahash College		1
Mercantile Library Ass'n N. Y.		1	Walker, John		
Mo. State Normal-Warrensb'g		1	Washington and Jefferson Col.		1
Missouri-State Dep'ts	3		Williams College		1
New York State Library			William Jewell College		1
Oberlin College			Winchell, N. H		
Ohio State University		1	Womans Med. Col. of Penn		1
Ontario School of Agriculture.	1		Wright, Daniel, M. D		1
Peasley, John B		1	Yale College		1
Pennsylvania—State Dep't					110
Pennsylvania State College		2	Totals	727	119

#### PERIODICALS FOR THE CURRENT YEAR.

Agricultural Gazette. (London).

Albany Law Journal.

\*American Baptist Flag.

\*American Journal of Education.

\*American Free Trader.

American Journal of Science.

Law Journal.

٤. Law Register.

.. Law Review.

44 Naturalist.

" Chemical Journal-The.

Analytische Chemie.

Annalen der. Phys. and Ch.

Atlantic Monthly.

Astronomische Nachrichten.

Blackwoods.

\*Boone County Sentinel.

British Quarterly.

\*Carrollton Democrat.

\*Central Baptist.

Central Law Journal.

Century Magazine.

Chemical News.

\*Christian Register.

\*Columbia Herald.

Comptus Rendus.

Electrician-The.

Edinburg Review.

\*El Comercio del Valle.

Engineering, (London).

Engineering News, (New York).

Frank Leslie's Illustrated Newspaper.

Fresenius Zeitschrift.

Garden-The.

\*Germania, (German).

Geological Magazine.

Harper's Bazar.

66 Monthly.

66 Weekly.

\*Independence Sentinel.

\*Industrialist—The.

\*Jefferson City Tribune.

Journal of Anthropological Institute of

Great Britain and Ireland.

\*Journal-Democrat-The.

Journal of Education, New England.

Journal of Mental Science.

Journal fur Praktische Chemie. Journal of Science, (London).

\*Justice.

\*Kansas City Daily Journal.

\*Kentucky Live Stock Record.

Knowledge-R. A. Proctor.

La Lumiere Electrique.

\*Lexington Register.

Library Journal.

Littell's Living Age.

London Quarterly.

\*Manifesto-The.

\*Mexico Intelligencer.

Mind.

\*Mining Journal.

Missouri Republican.

\*Missouri Statesman.

\*Missouri School Journal.

\*Moberly Headlight.

\*Musical Herald-The.

\*Musical Record-The.

\*National American-The.

Nature.

\*New York Medical Journal.

North American Review.

Observatory, (England).

Official Gazette of U.S. Patent Office.

Philosophical Magazine and Journal of Science.

Popular Science Monthly.

\*Ray-The.

Review of Science and Industry, K. C.

Revue des Deux Mondes.

Royal Geographical Society—Proceedings

\*Saline County Democrat-The.

Sanitarian.

Sanitary Engineer.

Science.

Speculative Philosophy.

St. Louis Globe-Democrat.

Post-Dispatch.

\*The Teacher.

\*Warrenton Volksfreund, (German).

Westminster Review.

\*Westliche Post.

Zeitschrift fur Die Morg.

<sup>(\*</sup>Presented by publishers.)

#### LIBRARY MATTER.

	Books.	Pamp.
University Library.	12,049	13,409
University Library. University Library, accessions 1884–5. Athenæan Society Library.	$\frac{727}{351}$	119
Union Literary Society Library	348 809	
Total in General Library	14,284	13,528

The library room, recently finished, covers the entire third floor of the east wing, the inside dimensions being 106x71 ft. and height of story 24 ft. The room is accessible by two stairways leading directly from the chapel, which is immediately below, and it also has a side entrance from the corridors which connect with the main entrances of the building. The room is by side lights and sky lights well lighted, and by flues in the walls well ventilated. It is heated by steam and in every way admirably suited to the purpose. Books are very heavy and some idea can be formed of the strength of the floor from the fact that it rests on Howe trusses five feet in depth with a span between iron columns of only 42 feet and resting on outside walls 3 feet in thickness. This magnificent room has no columns in it, the roof being self supported. Its capacity and capability as a library and study hall are exceptionally good.

In addition to the comfort and conveniences provided for in the new quarters, the library at the opening of the next year will be richer than when last open, by the accession of nearly two thousand volumes, most of which have been selected with great care from the recent publications.

There have been some few donations in the way of portraits, resolutions, etc., which have been given places on the walls of the library room. In view of the fact that the new library room will accommodate a much larger collection than that now in our possession, may we not expect to see it greatly increased in the near future, both by purchase and donation?

The list of periodicals for the past year is larger and embraces better matter than that of any previous year. It is the intention to continue the subscription list from year to year, and to preserve all old files for reference.

The following are the rules in regard to the drawing of books:

Members of the Faculty, students of the University and members of the Columbia Library Association are allowed to draw books for use in the room from any of the collections.

Members of the Faculty alone are allowed to draw books and periodicals from the University Library collection for use outside of the room—each member being entitled to six books for two weeks.

Members of the Columbia Library Association alone, including those who pay a monthly fee (to students, 20c.) or an annual fee (\$3.00), are allowed to draw bookly from this collection for use outside of the room.

Only the active members of the societies are allowed to draw from their respective collections, for use outside of the room.

Each member is entitled to two volumes at one time and no more.

Books must be returned within two weeks from their withdrawal.

A fine of five cents will be charged on each volume for each day after it is due. Fines shall be paid to the Librarian before other books can be drawn.

Marking, turning down leaves, tearing, soiling or otherwise injuring any book is in violation of Library rules, and the borrower will be held responsible.

The Reading Room is open every day of the year, Sundays and legal holidays excepted, from 8 a.m. to 6 p.m. It is not closed during vacations. Students, when not engaged in recitations, or in study at their own rooms, are required to be in the Library during the hours from 9 to 1 and 2 to 4. A strict observance of the rules of the room is enforced at all times, and idlers are not permitted to make the room a resort. The Librarian or his assistant is always present, and renders assistance to any who may desire help in looking up library matter.

Certain books of reference are kept on tables set apart for this purpose, to afford the greatest convenience in consultation.

The Law Library, consisting of 745 volumes, forms a part of the General Library, but is in a separate room, adjacent to the Law Lecture room. Members of the Law classes have free access to the books in this library during library hours.

J. H. DRUMMOND, Librarian.

H. W. ELLIOTT, Assistant Librarian.

## UNIVERSITY ANNOUNCEMENTS.

#### SYNCHRONISTIC TABLE.

This is a time-table and programme of the class room work for both Students and Faculty.

- I. It exhibits to the eye four Academic courses of study, taught simultaneously, each of which is crowned with a degree and attested by a diploma.
- II. It does not embrace the Law, Medical, Agricultural, Normal, Engineering and Mining School courses, as each of these has its independent curriculum; each also awards its appropriate degree, attested by a diploma. For information respecting these schools, see the respective portions of this catalogue.
  - III. The four Academic courses and degrees are:
- 1. The course in Arts; degree A. B.,  $Artium\ Baccalaureus-a$ , Bachelor of Arts. This is the old fashioned college or classical course, only slightly modified. Latin and Greek complete.
- 2. The course in Science; degree S. B., Scientiae Baccalaureus-a, Bachelor in Science, or Scientific Bachelor. This course gives modern languages the place of the classics, and makes the sciences more prominent. The mathematical course is here complete.
- 3. The course in *Literature*; degree L. B., *Litterarum Baccalaureus-a*, Bachelor of Letters. This course is such that the sciences yield the pre-eminence to the languages, as the languages yield to the sciences in the S. B. course. English course entire.
- 4. The course in Literature and Domestic Arts for young ladies; degree A. D. B., Artium Domesticarum Baccalaurea. Only young ladies will be graduated with this

## TABLE OF ACADEMIC

PRESCRIBED CURRICULA

	Semester	Hour	1. COURSE IN ARTS. Artium Baccalaureus-a. A. B.	Hour	2. COURSE IN SCIENCE. Scientiae Baccalaureus-a. S. B.
Sixth Year.	XII.	I. II.	Ethics and Philosophy. Geology and Pale-intology G'logical Museum & F'd W'k 1-2. Physical Laboratory 1-2. Special work in classics.	I. II.	Ethics and Philosophy. Geology and Paleontology. Geological Muleum and Field Work. Special Work in Science with Theses.
	XI.	II IV VI	Psychology and Logic. Mi.eralogy and Lithology. Anglo-S-xon and General Review of English Course 1-2. Semitic Lan & Anc. History 1-2 Germa. and Medieval History	I III III or IV	Phychology and Logic. Mineralogy and Lithology. Projection and Perspective to Scale and Surveying. Quantitative Chemical Analysis.
Year.	x.	II. IV. V.		III. III. IV.	Political Economy. Chemistry and Laboratory. Scherical and Physical Astronomy. Botanical Laboratory 1-2. Physical Laboratory 1-2.
Fifth Year.	I. Zeology 3-4, Entomology 1-4. II. English Literature. IX. III. Chemistry IV. Latin 1-2, Greek 1-2.		II. III. *	Zoology 3-4. Entomology 1-4. Least Squares 1-2. hemistry. Physical Laboratory. Botanical Laboratory 1-2.	
Year.	VIII.				Briany-Systematic and Economic. Physics. Calculus.
Fourth Year.	VII.	I II. III IV.	Analytical Geometry. Physics. English History. Latin 1-2, Greek 1-2.	IIII.	Analytical Geometry. Physics. English History. French.
ear.	VI.	II.	Spherical Trigonometry and Spherical Astronomy. Greek. Latin U. S. History & Amer. Literature.	V. VI. IV.	Spherical Trigonometry & Spherical Astronomy. French and Modern History. Drawing 1-2, Chemical Laboratory 1-2. U. S. History and American Literature.
Third Year.	v.	III. VI.	Greek. Latin. {Physiology and Hrgiene 3-5. {Physical Geography 2-5. Drawing 1-2 Chemical Laboratory 1-2.	I. IV. III. VI.	German. Higher Algebra. {Physiology and Hygiene 3-5. {Phy-ical Geography 2-5. Drawing 1-2 Chemical Laboratory 1-2.
Year. Second Year.	IV.	II III IV.	L. tin. Chemistry. Greek. Flane Trig. & Solid Geometry.	I. II. VI. IV.	Form Study. Chemistry. German. Plane Trigonometry & Solid Geometry.
	ш.	II. Vi III.	Greek.	III	English Composition and Rhetoric. Algebra and Plane Geometry German and Mediæval History. Physics.
	II.	I or IV. II. III.	Latin 1-2, Botany 1-2. Greek	II. IV. III.	Latin 1-2, Botany 1-2. English Composition and Rhetoric.
First Year	I.	II III IV VI	Zoology 3-5, Drawing 2-5.	III. IV. VI.	Latin Arithmetic. Zoology 3-5, Drawing 2-5. English Composition.

<sup>\*2-5</sup> p. m. Wednesday, Thursday and Saturday.

## COURSES OF STUDY.

AND THEIR DEGREES.

Hour	COURSE IN LE TERS.  Litterarum Baccalaureus-a.  LIT. B.	Hour	GIRLS COURSE IN ARTS.  Artium Domesticarum B. ccalaurea.  A. D B.
I. II.	Ethics and Philosophy, Geology and Pale-miology Geological Mus-um and Field Work. Special Work in English & Latin Classics.	I.	Ethics and Philosophy. Geology and Paleontolory. Geological Museum 1-2. Horticulture & Landscape Gardening 1-2. Special work in English and Esthetics.
II IV.	Psychology and Logic. Mineralogy and Lithology. (Anglo-Saxon and General Review of English course 1-2. Semitic Lunguage & Ancient History 1-2. Quan itative Chemical Analysis.	II. IV.	Psychology and Logic. Mineralogy and Lithology. (Anclo-Saxon and General-Review of Eng lish Course 1-2. Semitic Linguige & Ancient History 1- Quantitative Chemical Analysis.
II. III. IV. VI.	Chemistry and Laboratory. Latin 1-2 Spanish and Italian. Literary Criticism & Solect Readings 1-2.	II. III I. VI.	Political Economy. Chemistry and Laboratory. Italian 1-2, Art 1-2. Literary Criticism and Select Readings.
II. III. IV.	English Literature.	I. II II: V.	Zoology 3-4, Ento rology 1-4. English Literature. Chemistry. Literary Criticism and Select Readings.
II. III. IV.	Physics	III.	Botany—Systematic and Economic. Physics. Political Science.
II. III. V. IV.	Analytical Geometry	VI. II. III. V.	Art 4-5, Greek Lite 1-5. Physics. English History. French.
V. III. IV.	Spherical Trigonometry and Spherical Astronomy. French and Modern History. Latin. U. S. History and American Literature.	I. V III. IV.	Spherical Trignonometry and Spherica Astronomy. French and Modern History. Domestic Chemist y and Laboratory. U. S. History and American Literature.
II. III. VI.	German. Latin. (Physiology and Hygiene 3-5. (Physical Geography 2-5. Drawing 1-2. Chemical Laboratory 1-2.	III. VI.	German Calisthenics, {Physiology and Hygiene 3-5, {Physical Geography 2-5, \rt 1-2 Chemical Laberatory 1-2.
II. VI. IV.	Latin. Chemistry. German. Plane Trigonometry & Solid Geometry.	l. II VI. IV.	Latin or English. Chemistry. German. Plane Trigonometry and Solid Geometry
II. VI. III.	Latin Algebra and Plane Geometry. German and Mediæval History. Pnysics.	I. II VI III.	English Composition & Rhetoric or Latin. Algebra and Plane Geometry. German and Mediaval History. Physics.
III.	Algebra. Latin 1-2, Boty 1y 1-2. Eng ish Composition and Rhetoric. Drawing 2-5. Book-keeping 3-5.	II. IV. IV.	Algebra. Latin 1-2, Botany 1-2. English Composition and Rhetoric. Drawing 2-5. Book-keeping 3-5.
II. III. IV. VI.	Latin. Arithmetic. Zoology 3-5, Drawing 2-5. Emglish Composition.	II. 111. 1V. VI.	Latin. Arithmetic. Zoology 3-5, Drawing 2-5, English Composition.

degree. The course embraces Form-study (drawing), Anatomy, Physiology and Hygiene, Music, Italian, Laboratory Work, and Domestic Economy distinctively. Into certain of its classes only young ladies are admitted. This course is intended to avoid the fallacy of confounding co-education with identical education, by giving the young ladies a more elegant and useful culture for their allotted spheres than is provided in either of the other courses.

The course in instrumental music, embraced by the degree A. D. B., is optional, but ample provision is made for it by giving up a corresponding amount of time from other subjects to the extent of a single semester each, and in the following order, viz: (1.) Chemistry. (2.) Modern Languages (German and French). (3.) Latin. (4.) Mathematics.

It should be observed that the English word Bachelor, as a degree word, like the word author or poet, has no reference to sex. Hence, in the Latin of the heading of the first three curricula both genders of the adjective are given, as girls may take any of those degrees; but the degree of the fourth course (A. D. B.) is reserved to them alone. The degree itself points to home life as the destined sphere of woman as distinguished from the public, professional and business life of man. In this course, whose distinctive and valuable features the diverse resources of our Faculty enable us fully to realize, the general and liberal culture equals that of the other courses, and the special culture, with reference to the practical aims of a true education of woman, excels them.

- IV. The Academic Bachelor degrees, (A. B., S. B., L. B., A. D. B.,) are not compliments or favors, but acquisitions. They are conferred by the Curators as an award for having successfully completed a given line of work. The recommendation on which the awards are made is that of the Faculty. The diploma is delivered as a sufficient and documentary evidence of such award. Hence the propriety of the professors who teach, and endorse the work of the student by recommending for graduation, signing the diploma, and also the propriety of the diploma bearing the seal of the corporation. The value of these degrees and diplomas will correspond with the standing of the University.
- V. These four Academic courses and degrees severally embrace the same time and amount of work, and are equivalent in culture and equal in honor, but have distinctive adaptations to diverse aims in life.
- VI. No student will be allowed to graduate in any one of the four Academic courses, who shall deviate from the prescribed work as laid down in the Synchronistic time-table, except by permission of the faculty, obtained prior to making the contemplated change.
- VII. Elective courses are permitted to all the students, but subject to certain necessary regulations, such as that—
- a. Studies cannot be taken without proper preparation to enter the classes pursuing them.
- b. This choice must conform to the Synchronistic table; students cannot "get up" classes, except upon this programme of work as laid down.
- c. Each student, unless by permission of the faculty, must have 45 hours of work for each week, and at least 15 of these hours must be occupied in class room. It is assumed that each student will have four recitations a day, of an hour each, for five days in the week, and that the average student will require about one hour and a half to prepare each recitation. Six hours of preparation, and four hours of recitation, will be ten hours work a day. Monday is given to the societies, and Sabbath to the churches.
  - d. When studies have once been selected and arranged for any student, and

his name has been entered by the Professors upon class rolls, such student will not be permitted to make any change by discontinuance of studies or by taking other or additional studies, except by the knowledge and approval of the Faculty. A disregard of this rule would turn everything into confusion. It must, therefore, be strictly observed.

VIII. It is left to the head of each department to arrange the special cases arising in his department, with former students, on account of changes in courses of study made in 1884.

IX. In the professional schools, it will be noted that the medical course has been graded, and an entrance examination is required. The Normal course is reshaped and graded with three distinct and fitting degrees and diplomas. The degree of Pe. M. (Master of Pedagogics) is the highest and most scholarly degree of the University. Professors of colleges and general scholars may reasonably be expected to aspire to its difficult attainment. The Agricultural course is recast, and the engineering Department is complete.

- X. a. The synchronistic curricula (pp. 156-7), are the settled Academic courses for recommendation for the Academic degrees.
- b. The English and the Latin are fixtures in the course in letters, and are not open to substitution.
- c. The privilege of a student to withdraw from a department at the close of a semester without permission from the Faculty, is restricted to cases where the subject is completed.

The modification of the course in 1884, as given in the above table, had in view the realization of one main idea, to wit: That of giving greater prominence than hitherto to the physical sciences in the Academic work of the University. This is accomplished in two ways: 1st. By bringing the sciences to the front, in the early Part of the course, and associating them with language work for elementary disciplinary purposes. 2d. By organizing the science work, in the successive stages of the courses, so as to provide for progressive advancement to higher attainments therein than is otherwise practicable. An intelligent glance at the present programme will readily detect the improvements in both of these respects.

The fallacy that has vitiated much of the discussion respecting the educational value of language or of science has been that of attempting to prove too much for the one or for the other. The conflict is virtually over, and it is a drawn battle. Both parties are in possession of the field. Neither can vindicate its claim to exclusive occupation. The work of the present and of the future is that of harmoniously and symmetrically adjusting and balancing these two factors in our organized school work. The completeness with which the mathematical and the language work has been for ages organized into successive and progressive stages must command the admiration of every intelligent educator. It is believed that physical science work admits of and claims similar organization, as the great desideratum of the present, and this revised tabulation is a contribution of the Faculty of the Missouri University towards its attainment.

There is another feature of this programme of work which has been on trial and is also of the nature of a method and on which it is desired to fix attention. The old style was for students to have three hours of recitation daily, each recitation implying two hours of work outside of class room. This was a total of nine hours. By our present method, the students have four hours a day with the Faculty, each hour implying one hour and a half for preparation, making a total of ten hours a day. But it will be noticed that this extra hour is one of intercourse and contact with the living teacher and fellow pupils. With the same time in individual labor,

by this increased aid of accomplished specialists, and of class stimulation, students are enabled to attain a higher plane in the great variety of subjects which make up the school work of the present. This personal feature of our work is especially adapted to our situation in Missouri.

The great burden of expense in the work of education in this age is connected with the physical sciences. More than one-fourth of the improvements now in progress is specially devoted to their interest. The museums, hot-houses, apparatus and other advantages provided for pursuing these sciences at the University and the competence of the present Faculty fully warrant all the prominence that is here given to them.

The principle on which school teachers have acted in all ages seems to have been the same. They have always taught what they knew, or what they supposed that they knew. When they knew nothing about the physical sciences, they taught nothing about them. Now that we know a good deal about them, naturally enough we undertake to teach a good deal about them. This is a legitimate demand of this practical and industrial age, and the needed helps and accommodations to fully meet it will doubtless be provided by the State, that her University may proudly stand in the front rank.

#### THE UNIVERSITY TOWN.

The University is situated near the centre of the State, in Columbia, Boone county, in a beautiful and picturesque limestone region, on elevated rolling table land, a few miles back from the north side of the Missouri river. Were the selection of the site to be made anew (p. 12,) perhaps no spot in the State could be found combining so many desirable elements as the seat of the State University. The town contains four thousand inhabitants, and the county is the fifth of the State in population; and in its healthfulness and scenery, and especially in those social, moral and religious influences which tend to preserve the character of youth, and promote among them gentlemanly and lady-like concuct, good order and studious habits, it can hardly anywhere be surpassed.

There are located here two highly popular colleges for female education—Christian College and Stephens College—so that Columbia is peculiarly an educational centre, and for fifty years schools have been encouraged at this place.

#### DIRECTIONS FOR NEW STUDENTS.

- 1. Reach Columbia, if possible, as early as the Friday preceding the opening of the session.
- 2. If assistance is desired in obtaining board, report to the Proctor or to any member of the Faculty, at the University buildings.
- 3. Before entering the University, \$15.00 must be paid to Mr. R. B. Price, Treasurer, at the Boone County National Bank, and his receipt obtained. The law student pays \$40.00; the medical student \$40.00, and \$10.00 for Demonstrator's ticket.
- 4. The Treasurer's receipt should be at once presented to the Proctor at the University, when the name of the student will be entered upon the University roll. In case of continued delinquency to enroll, and of loitering about the town, the person so delinquent will not be received as a member of the University. No one can be enrolled until the receipt of the Treasurer, as above specified, be presented. No student can enter a class with any Professor, until he shall have been matriculated or regularly enrolled by the Proctor.

- 5. The professional student 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. The Academic student must present the Proctor's card to the Secretary of the Faculty, who must issue a matriculation ticket, admitting new students to their examinations, and former students to the advanced classes, for which, according to the Faculty record book, they have been examined. Students cannot enter classes without having borne an examination therefor.
- 7. Young people coming to Columbia, intending to enter the University, are cautioned against delaying their entrance without good reason, as such delay not only injures the work of the entire session, but leads to unfavorable inferences concerning the character and intentions of the student.
- 8. Report to the Professor of English to obtain a certificate of competent knowledge of English before having cards signed by any other professor.

When an applicant for admission into the University has been connected with any other institution, he or she must present satisfactory evidence to the Faculty of an honorable standing in the institution from which he or she comes. The applicant must be of good character and qualified to enter organized classes.

Classes are retained in their class rooms by the Professors until the tap of the bell; five minutes are allowed for transitions of classes after the tap of the bell. This rule applies also to the Library as a study room.

## REQUIRED OF STUDENTS.

- 1. To have four, and only four hours of recitation daily, unless otherwise prescribed by the course or allowed by the Faculty for good reasons; and to take such part as may be assigned in all class room or general exercises of the University. When class cards are filled by the Professors with the prescribed work, they must not be changed without the knowledge and approval of the Faculty.
- 2. To be present at daily worship in the University Chapel, and at all recitations and other exercises that may be assigned, and to make due preparation therefor. Absolute promptness and punctuality are required. When the students convene for worship they are required not to loiter about the building, but to go at once to their numbers and there to be seated, observing the same order as would be expected in a church.
- 3. Faithfully to observe "study" hours, and not to be found in the streets, in shops, stores and other places of business, except on business. During recitation hours, that is to say, from 9 A. M to 1 P. M., and from 2 P. M. to 4 P. M., students, unoccupied in class room, are not allowed to be on the campus, nor about the buildings, at any season of the year, but they are required to withdraw to their homes, or to go to the fibrary room for study, subject to its rules.
- 4. It is expected and enjoined that students, on Sunday, attend the church of their choice, or that of their parents, and observe the day as good and orderly citizens of a Christian community.
- 5. In general terms, it is required of students to be quiet, orderly and industrious; to observe the rules of the recitation room by abstaining from whispering or other communication; from spitting on the floor of the class rooms, library and chapel, under penalty of five demerits for each offense; from all unseemly postures, and, at all times, to observe the conduct and deportment of well-bred youth. The students are expected to deport themselves as ladies and gentlemen, and to be re-

spectful and courteous in their bearing toward each other and toward the members of the Faculty.

- 6. It must be distinctly understood that the University is for the good and virtuous young people of the State, and not for the idle and disorderly, the vile or vicious.
- 7. Professional students are required to comply with the regulations of the University upon the same conditions and penalties as academic students.
- 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, will prevent a professional as well as an academic student from obtaining a degree.

The following resolutions were recently adopted by the Faculty:

- (1) Resolved, That any student who shall write, dictate, have printed, circulate or lend his influence to bring into existence what is known as a "Bogus" shall be publicly expelled.
- (2) Resolved, That any student who shall, by any means whatsoever, be guilty of entering any part of the University buildings secretly, or without specific permission, or any class room or cases or furniture or private office connected with the University, shall suffer immediate expulsion; and, farther, that the taking or moving from any of the rooms of the Institution by any student the property of any member of the Faculty or of the Institution without permission, shall be deemed a like offense and so be visited with expulsion.

These offenses are too near akin to the crimes of burglary and theft to require any explanation.

#### SECRET SOCIETIES.

Whereas, The interest of the Literary Societies of the Missouri University are by the Faculty felt to be of great importance to our students, and the influence of College Secret Societies, so-called, is believed to be prejudicial to them, and harmful to the institution; and,

Whereas, It is deemed of vital consequence that only such societies should be allowed to claim the attention of the students as are recognized and approved by the Faculty; therefore, be it

Resolved, That all our students are hereby discouraged from joining such secret societies.

#### COLLEGE GOVERNMENT.

The fourth thing which I wish now to mention, is this: By law, the government and control of this University are lodged in the Board of Curators. The Curators have lodged the exercise of government and discipline in the Faculty. In my acceptance, it is made a condition, and by the explicit acquiescence therein by the Board, it has become an agreement, that there is to be no appeal by the students from any action of government or discipline on the part of the Faculty to the Curators. If the Faculty, as a body, is incompetent for the work assigned to it, of government and discipline as well as teaching, then clear the decks and man the vessel with a crew that understands, and can be trusted to perform its duties. This is the accepted and existing state of things. I am pleased that this is so. The Curators are thereby wisely exempted from a needless and incompetent responsibility, and nothing unreasonable is developed or demanded of the Faculty.

This point lifts to view the whole subject of college government, which is conceded to be one of great delicacy and difficulty. It is not meant to go into that subject at this time, farther than simply to enunciate the general principle which seems to underlie and to pervade it, and by a proper appreciation of which, we probably how one of the best proper appreciation of which, we probably how one of the best proper appreciation of which, we probably how one of the best proper appreciation of which, we probably how one of the best proper appreciation of which, we probably how one of the best proper appreciation of which, we probably how one of the best proper appreciation of which we probably how one of the best proper appreciation of which we probably how one of the best proper appreciation of which we probably how one of the best proper appreciation of which we probably how one of the best proper appreciation of which we probably how one of the proper appreciation of which we probably how one of the best proper appreciation of which we probably how one of the best proper appreciation of which we probably how one of the best proper appreciation of which we probably how one of the best proper appreciation of which we probably how one of the best proper appreciation of which we probably how one of the best proper appreciation of which we probably how one of the best proper appreciation of which we probably how one of the best proper appreciation of which we probably how one of the best proper appreciation of which we probably how one of the best proper appreciation of which we probably how one of the best proper appreciation of which we probably how one of the best proper appreciation of which we proper appreciation of which we probably how one of the best proper appreciation of which we probably how one of the best proper appreciation of which we probably how one of the best proper appreciation of which we probably the proper appreciation of which we probably the proper appreciation of which we probably the pro

ably have one of the best guarantees of efficiency and harmony.

This matter of college government is esteemed the opprobrium of our higher institutions of learning, and yet there does not appear to be any good reason why, if the students and authorities of a college understand themselves clearly, there should be any trouble. It is conceived that there is a principle which presides over this subject, and that it is obvious on enunciation and all comprehensive in its application. That principle is simply this: The authority of government in a school is not derived from the pupils, nor is it dependent on them, in any sense whatever. This holds true, whether it be a private school or a public school, an academy, a college, or a university. In no case is the authority of the schoolmaster derived from his pupils. In the private school, it is an extension of parental authority; in public schools of all grades, including the university, it is an extension of the authority of the State. But in no case is the authority of the school house derived from the scholars. It is not from below; it is from above. Scholars, then, do not come to a school to govern it, nor to take any part in the government. They come to obey and be governed, by submitting to the rules and regulations which they find in force. A proper understanding of this very simple and comprehensive principle of action, takes all the windy conceit and swollen importance out of the self-constituted leaders of college broils and rebellions. The only alternative to a pupil in school, is to obey or leave, willingly or by constraint.

Any other theory works its own inevitable destruction. Take the popular, but utterly fallacious and pernicious alternative, that young gentlemen, in an institution of learning, are to be thrown upon and guided by a sense of honor. The question at once arises, whose sense of honor? Is each to be a law to himself? Hardly any two, in many cases, can be expected to agree. Most flagrant misbehavior, not infrequently, has the sanction of the guilty party's sense of honor. By the operation of this principle, every one would do that which was right in his own eyes, which is a natural description of a state of barbarous anarchy. Between the loyal and orderly subordination of the pupils to the constituted authorities of the school house, and the lawless and disgraceful subordination of a Faculty to their own scholars, no sound, well-informed and unprejudiced judgment can hesitate, in its choice, for a moment. Whatever the college or the school house laws, they are entitled to vindication by enforcement, till altered or repealed by the proper authorities in a proper way. The school in its organization and operation, is not a democracy, nor a republic, any more than is the family. The authority in the family does not come from the children. To recognize the children as the source of power, or the governing authority in the family, would destroy the household. Any other view tends to breed anarchy and lawlessness; and that, too, not only in school days, but in the after life of pupils as citizens. "The heir, as long as he is a child, differeth nothing from a servant, though he be lord of all; but is under tutors and governors until the time appointed by the father."

In its measure, this enunciation holds good of the professional schools, just the same as of the under-graduate schools. Underneath all their freedom of personal action and exemption from surveillance, there are certain established rules which are not established nor changed at their bidding and to which the professional or proper University students must conform, as a condition of pupilage and recognition. It may be truly said of them, as of the contestants in the Grecian games—"If a man also strive for masteries, yet he is not crowned, except he strive lawfully." A student is not entitled to the benefits nor to any of the honors of an institution of learning, except upon the condition of loyal compliance with its requirements—

From the Inaugural Address of President Laws.

#### THINGS FORBIDDEN TO STUDENTS.

- 1. To enter a billiard or drinking saloon, upon any pretext whatever; to carry concealed weapons, or to use profane or indecent language, or to use intoxicating drinks of any kind. The sending or the receiving of a challenge will operate a dismissal. The property and peace of the citizens are in no way to be disturbed.
- 2. Noisy and disorderly conduct about the University buildings, assembling about the doors, whistling, sitting in the windows, shouting or calling aloud from the windows, or assembling in the halls, before or after recitation or other exercises. The classes are required to make their transition from one recitation room to another, promptly, at the proper signal, and five minutes are allowed for the change.

- 3. To smoke in the building or on the campus. Betting and gambling, in every form, are prohibited. "Idleness persisted in is to be treated as wantonness and rebellion."
- 4. In any way to injure or mar the University buildings or furniture by whittling, cutting, marking, or in any way defacing the same. All University property is to be guarded and preserved as a sacred trust, and to be used without abuse; and in every case, if a student injure or deface benches, tables or other furniture, he shall be required to pay the full cost of the articles injured or defaced, and in other cases to pay for all the damage done. Each student is assigned a number on the seats in the chapel, and is not allowed to change without permission, and is responsible for the condition in which it is kept—note being taken of marking, or of any damage. Willful damage to property may subject one to removal from the Institution.
- 5. To leave town without the permission of the President, obtained beforehand, or to change a recitation which has been assigned, without the permission of the Faculty. Such excuse by the President, is reported at Faculty meeting, and operates an excuse from the several rolls. With this exception, each Professor alone excuses absences from his roll call. The President alone excuses from chapel.
- 6. No student will receive an honorable dismission who is under a charge, or who has failed to pay all University dues, or who has not returned all library books.
- 7. All those things are forbidden which tend to deteriorate moral character, to prevent intellectual and moral advancement—in short, all those irregular, wicked and immoral practices and habits which would be forbidden in good and cultivated families, and which tend to prevent preparation and training for good citizenship.
- 8. Profanity, quarreling, fighting and obscenity of language or conduct on pain of dismission.

The attention of students is especially called to the foregoing rules, and they will not be permitted to plead ignorance of them, when called to account for delinquency. A willful violation of any regulation is a just and sufficient ground for sending the offender from the Institution. It must be borne in mind that these rules of order apply as rigidly to professional as to academic students as all are associated in the same University community. No fees are returned to any one removed by discipline, as offenders forfeit their rights and privileges of citizenship and good standing in the University.

#### DISCIPLINE.

The discipline of the University is intended to be mild and suasive, as far as circumstances will permit. If, however, students manifest such moral obliquities, or such idleness, as render them unworthy members of the body collegiate, they are returned to their friends without exposure, when it is practicable so to do; and it is only in cardinal offenses that the Faculty resort to public and exemplary punishment.

When a student enters the University, the discipline of the Institution allows him a credit of one hundred merit marks; and he is charged on the record with such demerit marks as arise from misconduct and neglect of college duties. When it is ascertained that his demerits reach fifty, a letter of notification is sent to his parent or guardian; and when the number reaches one hundred, he is excluded from the Institution by the operation of law, which is rendered effective by an announcement of the fact by the President, or by an official communication by the Secretary of the Faculty to the individual, and to the parent or guardian.

#### RULES OF CONDUCT.

These are few, and are designed to promote the good order and welfare of the University community, and the best interests of the individual student. Their rigid enforcement must be expected.

#### SOME BOARD REGULATIONS.

#### [1872.]

#### THE PRESIDENT.

- "The president shall be the chief executive officer of the University; he shall preside in the meetings of the general Faculty, and when present in those of special faculties, also at the Commencement and on other public occasions of the University.
- "It shall be his duty to be present at the meetings of the Board of Curators when required.
- "He shall see that the laws and regulations of the University, and the plans in relation thereto as adopted by the Board of Curators are faithfully executed; and that all rules or orders of the Board for the general government of the University or any of its departments shall be fully carried into effect.
- "He shall, at each annual meeting of the Board of Curators, make a report, presenting the progress, condition and wants of the University, and recommend such measures as in his judgment will promote its interests.
- "He shall at the other meetings of the Board, as may be required, or as he may deem expedient, make report touching the interests of the University, or any special matter pertaining thereto.
- "It shall be the duty of the president to superintend and direct the care and management of the Institution and its grounds.
- "He shall have power to grant leave of absence to students, or with the assent of the Faculty, to excuse from any particular class, and to transfer to a different class."
- "He shall keep himself duly informed in regard to all departments of the University, its property and workings, and shall have the right to make such examinations and inquiries as may be necessary to furnish him full information.
- "He shall be present at daily prayers, or when necessarily absent, shall inform the oldest professor in commission, who shall in that case preside in the chapel.
- "He is in general terms charged with the superintendence of the interests of the University, with its good order and the maintenance of its reputation at home and abroad, and also with the general oversight of its property.

#### PROFESSORS.

- "The University Faculty shall consist of the professors in the several departments of the University, and of assistant professors representing complete departments.
- "The assistant professors and instructors shall attend the Faculty meetings, shall participate in the consultations of the Faculty and give their opinions, but not vote.

- "All professors, assistant professors and instructors shall be members of the Faculties of the departments to which they respectively belong, and they may be members of as many different Faculties as the departments in which they may be giving instruction.
- "The University Faculty shall meet each week; other Faculties when called together by their dean, or by the president of the University, for consultation in regard to their special departments.
  - "A majority in all cases shall constitute a quorum.
- "It is the duty of the professors and instructors to use their best efforts to carry into complete effect the laws of the Institution and the plan of management and organization, as adopted by the Board or Legislature." They are constituted officers both of discipline and instruction. They are, in the recitation room and out of it, to use their influence and authority to preserve order and good conduct among the students, to bear a just proportion of such systems of visitation and moral influence as may be adopted in the Faculty for the benefit of students, and by all the means in their power to promote the reputation and welfare of the University.
- "The business of the Faculty at their meetings shall be, to consider the order and condition of the University, the conduct and progress of the students, to review the rolls, to administer discipline in cases which may be deemed worthy of Faculty notice, to make rules for the government of the students not inconsistent with those of the board, to consult in regard to advancing the interests of the University, to discuss questions of educational policy, or to hear and debate papers which may be presented by any of the instructional corps as may be agreed upon and thought best.
- "Professors are required to be punctually present at the daily convocation for worship in the chapel, and so far as in their power to give their aid in rendering the religious services appropriate and solemn.
- "The Faculty shall appoint a secretary who shall be a professor or teacher in the University, and who shall keep a faithful record of the members of the Faculty present and of the proceedings of each meeting of the Faculty, and enter the same in a permanent book, which shall be laid before the Board for examination at each stated meeting, and he shall do such other business as properly pertains to his office.
- "The special or professional Faculties shall first pass upon all degrees, certificates or honors to be conferred in the respective departments, and report the same for the consideration and action of the University Faculty.

#### STUDENTS.

- "It is the duty of students to obey the laws and rules which may be made by the Board of Curators or by the Faculty, for the government of the University.
- "Whenever the Faculty are satisfied that a student is not fulfilling, or likely to fulfill, the purposes of his residence at the University, or is for any cause an unfit member thereof, his parents or guardians shall be notified, that they may have opportunity to withdraw him, and if not withdrawn within a reasonable time, he shall be peremptorily dismissed. This rule is not intended to prevent instant dismission for those graver offenses which may require it.
- "Students must comply with the rules of the Library and the rules relating to the Chemical Laboratory, on penalty of being debarred their use.
- "The presenting of petitions or other papers to the Board of Curators in regard to the government of the University, or to the appointment or dismissal of pro-

fessors or officers, or the holding of meetings to criticise the government of the University, is regarded as improper and disorderly, and any student engaging in such practices may be dismissed by the Faculty.

"Presents to officers of the University from the students or any class of them are prohibited, and officers are required to decline their acceptance, if tendered.

"Meetings of the students, or of a class or section of students, are not to be called without the knowledge and consent of the President.

"No society or association, or club is permitted to meet after night in the University building except under such rules as may be adopted by the Faculty for the safety of the building snd property, and in such manner that due accountability shall be secured. The President is particularly enjoined to see that rules are made and enforced for the safety and preservation of the University property, and if this cannot be done without the exclusion of the regular society meetings, or other minor associations, or if the societies manifest an unwillingness to comply with these rules or do not observe them, night meetings must be wholly prohibited, and the Faculty is authorized and required to issue an order to that effect and enforce it.

"In case of injury, accidental or otherwise, done to the University property, the damage shall be paid for by the student who has done it, or by the occupants of the room in which the injury occurs, or if done to a building by the occupants of the building. All rooms are rented upon this express condition.

"The business agent is required to assess the damages and immediately to cause the injury to be repaired.

"If a student is expelled from a boarding club by the action of the club, he is immediately to leave his room in the club house, and no part of his rent will be remitted.

"In general terms students are held responsible for good order and the diligent use of their time. The University is no place for idlers, for the disorderly, or those who do not propose to give their whole time to the work allotted them by the Faculty. The loss of a single recitation not only injures the student but all connected with him.

"Leave of absence will not be granted but in cases of absolute necessity, and the student should not apply for it, nor the parents or guardian in his behalf, except in such cases.

"Students and Faculty are assembled daily for prayers fifteen minutes before the hour for morning recitations. At this time all public announcements are made, and the President also gives directions and instruction in regard to all their general duties as members of the University.

"No candidate for any of the degrees of this University shall be permitted in any public exercise, to deliver an address or oration which is either sectarian or partisan in character; and a violation of this rule shall debar the offender from any honor of this institution.

"All students, unless sick or absent, are earnestly requested to attend public worship at least once on the Sabbath, at such places as they, their parents or guardians may designate, and all practices inconsistent with the due observance of the Lord's day are expressly prohibited.

"The diploma fee shall be five dollars, to be paid to the Treasurer of the University, whose receipt shall be presented before delivery of the diploma, which shall be prepared by the Faculty.

"Certificates of proficiency shall be conferred in the same manner, and the fee shall be one dollar, to be paid in the same manner. If the student shall have attained extraordinary excellence in a particular branch, that excellence shall be noted in his certificate as the Faculty may determine.

"The proficients as well as graduates shall, when required, perform public exercises on commencement day under such rules as may be made by the Faculty."

ACT OF THE LEGISLATURE RESPECTING THE TOWN OF COLUMBIA.

Sec. 6. No by-law or ordinance of the corporate authorities of said town and no police regulations of said authorities shall be passed, and no powers of the officers of the said corporation shall be exercised so as to interfere with any by-law or regulation of the Curators or the Faculty of the University of Missouri.

#### LEAVE OF ABSENCE.

When a student wishes to leave the University, either temporarily or permanently, he should confer with the president, in order that charges of absence may not accumulate against him on the record of demerit. But it is hoped that absences from the Institution for the purpose of visiting friends, etc., will be discouraged by parents and guardians, because such absences interrupt a student's progress, and greatly diminish the pleasure and profit of his literary pursuits.

In case of withdrawal, written authority from the parent or guardian may be required. Parents and guardians are again urged not to encourage withdrawals, nor permit them, save for controlling reasons.

The Faculty would add emphasis to this statement by the declaration that they consider the evil of withdrawing before examination, and prior to the close of the session, to be so injurious, both to the individual student and to the good order of the University, that they cannot advise students, having such intentions, to enter the University at all. It should be understood that the student, by withdrawal, not only loses the benefit of the closing exercises in his studies—the most important of them all in fixing them in his mind—but escapes the responsibility of final examinations, and loses the incentives which the contests and aspirations of a public institution present.

#### ABSENCE MARKS.

- 1. There are three kinds of absence marks—those from chapel, from town and from class room.
- 2. The absence from chapel, indicated by the unoccupied numbers on the seats shall be noted every morning by monitors, appointed by the Faculty, and the slips used for this marking shall be handed to the secretary of the Faculty immediately after chapel every Saturday morning.
- 3. The presiding officer alone shall excuse absences from chapel and from town.
- 4. The several professors shall excuse from their class room exercises, with the exception that an excuse for absence from town shall operate as an excuse from chapel, and from all class rooms, during the time for which it is granted.
  - 5. The absence marks on class rolls are of three kinds:
  - a: Those canceled.
- b. Those uncanceled, after an excuse has been called for, and no satisfactory excuse has been given.
- c. Those uncanceled, for which no excuse has yet been demanded, and for which no sufficient reason is known.

Class room absences of the first kind (a), i. e.. when canceled, shall be reported as excused absences, and recorded with the reason for cancellation; absences of the second kind (b), shall be reported as unexcused absences, and entered on the roll of demerit; and all undetermined absence marks shall be determined, i. e., converted into either excused or unexcused absences, before they are reported to the secretary of the Faculty.

- 6. All excused and unexcused absence marks shall be reported to the secretary of the Faculty, at every regular Faculty meeting. At the end of the semester all undetermined absence marks are reported as unexcused.
- 7. Careful note shall be taken of all absences before entering upon class room exercises.
- 8. All class room excuses shall be called for, and given in the presence of the entire class, except in extraordinary cases.
- 9. Every student, against whose name there is entered upon his class roll an absence mark, shall be called on for the reason of absence, upon first appearing in class room after its entry.
- 10. When, upon the calling of the roll, it shall appear that a student is absent for a reason unknown to the Professor, due diligence shall be exercised to learn the probable reason, by inquiry of the class, whether the absence be due to sickness or other cause, that proper attention may be directed to each case as it arises.
- 11. Students must account for their absences from chapel every Tuesday morning. The reason of absence from chapel must be given, and it is delivered to the Secretary of the Faculty in the lists signed by the President.
- 12. In making their reports to the Secretary of the Faculty, the Professors shall use a prescribed blank.
  - 13. Unexcused absences, once reported, can only be excused by Faculty action.
- 14. 'Every unexcused absence from chapel or from class rooms, counts two demerit marks.

#### RULES FOR GRADING STUDENTS.

A system of marking proficiency and conduct of students for classification and future reference being a matter of necessity, it is resolved:

- 1. The grades given by Professors for class-room work, examinations or other exercises, shall be embodied in a semi-annual report, and handed to the Secretary of the Faculty for safe keeping and record, on the scale of 100, i. e., the knowledge of the student in any particular subject shall be expressed in per cent. of the knowledge that may be justly demanded of the class, measured not by the amount of subject matter within the scope of such subject, but by the amount of it actually gone over and taught in the class-room.
- 2. The grades inus made out shall be filed and recorded by the Secretary for the purpose of enabling him to make out the annual reports for undergraduates and to obtain the average full course grade of the candidates for graduation.
- 3. The Secretary shall make out and mail to all undergraduates or their legal representatives, at the close of each college year, an annual report of the work done by them during the year, which report shall be worded as follows, to wit: A standing or grade in any subject of less than 60 to be designated by the words, not passed; a standing or grade of 70 and up to under 90 by the words, second rank; a standing of 90 and over by the words, first rank; and those of first rank having 96 or over to be designated first rank with distinction.
  - 4. No other grade than that of rank without numerical standing as here pro-

vided shall be communicated or given to any student or patron of the University by either a Professor or the Secretary of the Faculty.

- 5. All students, who have finished the work in 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.
- 6. The average full course grade of the academic graduates shall be made out by the Secretary of the Faculty from the records of the Professors' reports on file, counting as equivalent each hour's work per day with the Faculty in any study, and the detailed report, shall be examined by two additional Professors, appointed by the Faculty, who shall testify to its correctness by their signature.

In counting the grades given to students in fractional studies, such grades shall have corresponding fractional values in making out the general averages.

- 7. The pass-grade for ordinary class-room work shall continue to be 60 as heretofore, an average full course grade of 70 shall, however, be the prerequisite for graduation.
- 8. Recognition to be given to graduates in the following manner on the Diploma and on the Commencement programme, to wit: All students graduating with a full course average of 70 to under 90 to receive the ordinary Diploma here-tofore given; those graduating with a full course average of 90 to under 96 to have inserted in their Diplomas the words, first rank; those graduating with a full course average of 96 and over to have inserted in their Diplomas the words, first rank with distinction: provided, however, that college discipline incurred for misconduct, or a grade for same of 90 or under, or demerits beyond the number of 25 for unexcused absences, given in the Senior or any other year, shall forfeit the right of any student to such distinction, and to recognition in any rank except by special dispensation.

On the Commencement programme the names of the graduates shall appear in the order of gradation, with the above mentioned proviso, distinguishing in the manner indicated the ranks of the graduates, and note shall be made of previous honorable mention in the catalogue.

9. Only those Seniors who shall have attained the grade of first rank with distinction shall be voted for by the class for the honor of valedictorian at commencement. If there are not two or more Seniors thus eligible, the Senior who has the highest grade in the Academic course shall be ipso facto the valedictorian of his class, i. e., without election by the class, and the person to be so designated shall be determined by the Secretary of the Faculty on comparison of the relative grades made by the first of May in each year.

Adopted by the Faculty April 22, 1884.

Students admitted to standing in any of the classes, shall be graded in the several subjects of study, according to the system of marking proficiency, on the scale of 100 adopted in this University, and said standing shall be placed on the record.

No evidence of proficiency in any study, pursued outside of this University, shall be accepted by any professor, in lieu of his own examination.

All professional students who enter regular academic classes, shall be dealt with in those classes as other academic students, in grading and in marking absences, and in deportment.

The standing of all students shall be reported by the Professor to the Secretary of the Faculty, at the end of each semester, indicating whether it is given after examination, or is merely class standing, and for how long a time; in the latter case it shall not entitle the student to a claim involving future graduation.

Students who fail to reach a respectable standing in their studies:

- 1. If the failure arises from the fact that the student has too much work, he shall be excused by the Faculty from part of it.
- 2. If the failure arises in any department, or departments, from a want of application, the case shall be promptly reported to the Faculty by the head of the department, and the Faculty may either drop the student or send him home.
- 3. If from bad health, the Faculty may either excuse him from the study or send him home.
- 4. If the failure in any class arises from want of capacity, or from the fact that the student is classed too high, the head of the department must assign him to a lower class within his department, if there be one for which he is fitted; if there be no such class, the fact shall be reported to the Faculty at their next regular meeting, and the Faculty may excuse the student and assign some other study, or studies, in which he can work to advantage.

#### NOTICE TO PATRONS OF THE UNIVERSITY.

The patrons of the University will please note the following explanations and suggestions:

- 1. It is not found practicable to send out reports oftener than at the close of each collegiate year in June. But the Professors in charge of the students keep, carefully, a daily record, and the Secretary of the Faculty keeps a personal account with each student, from all of which the semester reports are made up. At any time, if friends specially request it, the standing of any particular student will be promptly furnished by the Secretary of the Faculty. In European universities only post-graduates are admitted to the classes, and hence, the absence of the marking and reporting system there affords no criterion of our American universities where we have an academic department and under-graduate students.
- 2. In marking and grading, a scale of ten (or one hundred) is used for simplicity and convenience by the entire Faculty, and when the figures are translated into ranks, they have about the following meaning: 60-70 no rank: 70-90 second rank; 90-95 first rank; 96-100 first rank with distinction; 60 barely passable; below 60 means that a student is so deficient or imperfect as to be put back, or as not to be allowed to go ahead to more advanced studies. Conduct is also graded on the scale of 100, every student is, on entering, credited with 100 as perfect, and all deductions from this ideal standard are by demerits. Each unexcused absence from University duty counts two demerits, and misconduct is demerited according to its aggravation.
- 3. Students are graded on deportment by the scale of figures and adjectives given in the preceding paragraph.
- 4. It is deemed very important for parents and guardians to understand that, not including clothing nor railroad fares, the entire expense of a student here for the two semesters, or entire college year, should fall within two hundred dollars. If a student spends more than that amount, he should be called strictly to account, as the probability is that his associations or habits are not what they should be. The fact is, it would be for the interest of the University and of the State, that students who propose to spend more than the above amount should go elsewhere. On page 175 of this catalogue, a student, who has had several years' experience, gives the expense of living in one of the clubs, and makes in that connection this statement: "We know the expense to each of several of our most studious members to have been no more than one hundred and fifty dollars for the last year, in-

cluding all expenses, excepting neither clothing nor railroad fare. There are many cases where students succeed on less, but economy itself would dictate the above amount." The clubs are as genteel and comfortable as any plain private families. There is probably no institution in our country where equal advantages can be enjoyed at less cost. Unnecessary expenditure does not add to the respectability of any student, and it certainly does imperil his character and scholarship. There is nothing more pernicious to our youth than habits or indulgence of extravagance.

#### EXAMINATIONS AND GRADUATION.

There are three examinations in the University:

1. An examination of the new students is held at the beginning of the session, for the purpose of ascertaining their scholarship, and of assigning them to the classes for which they may be qualified.

In order to meet the requirements in English, it has been resolved-

- a. That before any student (coming to the University for the first time,) shall be admitted to any of the academic classes, he shall be examined by the Professor of English, and obtain from him a pass card, certifying that he possesses a competent knowledge of English—the word competent being understood to mean such a degree of knowledge as will qualify the pupil to labor profitably and creditably in the class he proposes to enter, it being referred to the several heads of departments to arrange with the head of the English Department the cards of examination which shall pass the pupils to their several classes.
- b. That all the students in the academic classes shall undergo, at the close of each year, an examination on the fundamental branches of English, viz.: English Composition, Arithmetic and Geography; and every student must receive a grade of at least six in each of these subjects according to general rule, before being admitted to examination for the next higher class or for graduation.
- c. That the Secretary of the Faculty direct the students to report to the Professor of English, before having their cards signed by any Professor.

On the occasion of entrance examinations, the Faculty generally recommend a full course of study to students whose age and means render such a course advisable.

Special students, in any department, may be admitted without previous examination, but no students are accounted special students unless recognized and entered as such by the Faculty.

- 2. An intermediate examination of all the classes, partly oral and partly in writing, is held at the close of the first semester. There is no suspension of class room exercises, except for intermediate examinations, for the holidays, Thanksgiving Day and Washingston's Birthday.
- 3. A general examination of all the classes is held during the ten days preceding commencement, for the purpose of ascertaining the year's progress of the students, and of deciding what students shall graduate or be promoted to higher classes.

### REVIEW AND RE-EXAMINATION.

1. A student may, either by or without entrance into a class, review any subject in which he has a passing grade, and by permission of the Faculty previously obtained, be re-examined on such subject at the time of the regular class examination. The grade thus obtained shall be substituted for the first.

- 2. The regular times for class examinations are the only occasions on which a student having a passing grade may present himself for re-examination, except in cases where it is clearly impossible for him to be present. In such cases the Faculty may set some other time for his examination.
- 3. The re-examination provided for by the two preceding rules shall be limited to subjects pursued or passed on by the *student* during the *scholastic year immediately preceding* the proposed examination, but this re-examination shall not be allowed more than once.
- 4. All private examinations granted under the rule (2), i. e., those which are asked for after the public examinations have taken place and at which a student failed to be present, shall be conducted in writing.

Students cannot be examined privately otherwise than as above provided, but must pass the public examination of their classes, or lose their class standing.

No student who has been absent from his class for more than a third of the time devoted to the particular subject, shall be admitted to the regular class examination for the purpose of obtaining his final grade; such student may, however, on petition to the Faculty, be granted a special written examination, to cover the whole subject gone over, and the secretary shall keep and preserve the examination paper, graded and signed by the professor in charge.

The mathematical department was exempted from the operation of this rule.

Each candidate, as a condition of enrollment by the Faculty for recommendation to the Board of curators for graduation, is required to prepare a thesis, oration or essay, which may be given in public or not, at the discretion of the Faculty, and the same, on thesis paper, must be filed with the University Librarian, to be kept in the archives.

Students in the course in science are required to present, not an oration but a thesis or essay upon a scientific topic, for graduation.

#### CHEATING.

Whereas, Cheating in recitation or in examination, by using helps of any kind forbidden, or not allowed in common to all the members of a class, results in gaining dishonorable advantage over class-mates, and in deceiving instructors and is ruinous to the character and scholarship of such as resort to such reprehensible practices, and hence, should not be tolerated in any institution of learning; therefore, in order to guard the students of this University against this grave evil, the following rule is hereby enacted:

PART I.—For the first offense of cheating it is hereby ordered:

- 1. That the recitation or examination thus vitiated shall be marked zero.
- 2. That no special or private examination shall be allowed for the relief of the offender.
  - 3. The fact of such cheating shall be stated in the conduct column.
  - 4. That 25 demerits shall be at once entered against the offender.

The penalty for the first offense of cheating is not understood, of itself, to debar a student from continued work in the department where it occurs, nor to place the student at any disadvantage other than may arise out of his scholarship or general standing.

PART II.—For the second offense of cheating it is hereby ordered:

That the fact of any student thus cheating in any recitation or examination shall operate as a dismissal from the University, and as a barrier to the re-admission of the guilty party to the University.

Part III.—The written statement of the fact of cheating aforesaid, giving the name of the guilty student, the subject, recitation or examination, the time and place of the same, and the names of at least two who are cognizant of the same, one of whom may be the guilty party, presented to the Faculty at any regular meeting by the head, or Professor in charge of the department in which the offense occurred, shall, with the approval of the Faculty, be entered on the minutes, and have the effect of adjudging the penalties as defined under parts I. and II. of this rule; and a copy of the minute shall be sent to the parent or guardian, and a duplicate may be given to the offender.

#### DEGREES.

Degrees are conferred by the Curators, on the recommendation of the University Faculty. The regular Academic degrees are: Bachelor of Arts, Bachelor of Science, Bachelor of Letters, and Bachelor of Domestic Arts, according to the particular course of study which the student has pursued. Each of these courses, entire, occupies six years, and is intended to be of equal honor and educational value. The professional degrees correspond to the several courses pursued.

The degree of master is conferred three years or more after graduation, upon such Bachelors as pursue a professional or literary career.

The Curators may, of course, in addition to these, confer any of the usual honorary degrees and titles.

#### CERTIFICATES AND DIPLOMAS.

If students desire certificates to show their attainments, it has been decided that instead of individual members of the Faculty giving testimonials—

- 1. A graduate be referred to his diploma.
- 2. An under-graduate have a certified copy of his card from the Secretary of the Faculty.

#### FEES 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. These charges are so low as properly to be considered merely nominal.

Law, medical and engineering students are charged \$40 for the year, to be paid upon entrance. This includes the incidental fee. Demonstrator's ticket \$10, payable by the medical student upon matriculation.

The fee for diplomas is \$5. This must be paid 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.

#### BOARDING.

Beard in private families, with lodging, washing and fuel, may be obtained for from three to four and a half dollars a week. By entering clubs, this amount may be reduced to two dollars and a quarter.

The allowance for clothing, books and pocket money, will vary with the character of the student. It is hoped that parents will bear in mind that too liberal an

allowance of money exposes a youth to temptation, interferes with his habits of study, and adds nothing to his happiness or respectability. No student should spend over two hundred dollars a year, including everthing, except clothing and traveling expenses to and from Columbia. In every case where a student exceeds this amount, it may be set down that there is something wrong, which compromises both usefulness and respectability.

Young men working on the College farm, or in the gardens, will be allowed compensation, according to their skill, fidelity and industry, to be determined by the Dean of the Agricultural College.

The University does not provide boarding for students, nor oblige them to adopt any particular plan; but to insure cheap boarding, and prevent any sudden or excessive rise in the price of boarding in private families, the University has erected two groups of cottages, or club buildings, with dining halls, about a third of a mile apart, sufficient to accommodate two clubs of forty each.

The students who board themselves in the cottages, form themselves into clubs, appoint their own commissaries and other officers, establish and keep up their own police, punish members by fine and expulsion, and, on each Monday, meet to hear reports, and consider the welfare of the clubs, and generally to attend to their business affairs. The weekly expense of board, including a small admission fee tokeep up the furniture, also rent payable to the University, has not exceeded \$2.25 per week.

#### LIVING IN THE CLUBS.

There are two club organizations in which are enjoyed all the accommodations of a plain private family at the actual cost of living. A genteel white woman has charge of each, who is paid an agreed-on sum of money, and is allowed the board of her children and of a certain number of servants, for the following service, viz: To clean up the rooms daily, wash the sheets, pillow slips and towels; wash clothing; cook and serve the food provided. Under this management the clubs are like private families. The members of the club have their own organization—captain, commissary and secretary. They assess themselves, collect the same, and buy their own provisions, so that if insufficient or not of the right sort, they can only blame themselves. The matron is only responsible for the cooking and serving. The husband in each case pays his board the same as one of the students. Formerly the clubs were a nuisance, but this plan works admirably, and below is presented a perfectly reliable statement from one of the students, prepared by request:

UNIVERSITY OF THE STATE OF MISSOURI, COLUMBIA, Boone County, Mo., June 25, 1879.

DR. S. S. LAWS, President:

DEAR SIR:—At the request of parties interested in the boarding clubs of the University, I hereby hand you, for the benefit of those seeking such information, an estimate of all necessary expenses of a student availing himself of the advantages of the present club system. This estimate will perhaps possess no additional value to similar ones, other than that it is based on several years actual experience, and consequently, is more reliable ad satisfactory than a mere approximation.

The following is for the benefit of those desiring an itemized account:

Room rent (payable to the University), two Semesters, \$7.50 each \$15	00
Furniture for room:	

a difficult for foom.		
Bedstead \$2 25		
Mattress 3 00		
Stand-table 1 75		
Wash-stand 2 00		
Chairs, 2 1 00		
Lamp, etc., etc		
Total	\$6	00
Fuel and light	5	00
Initiation fee of club (life membership)	4	00
Board and washing per week \$1.50 (forty weeks)	60	00
Total expenses for school year	\$90	00

The maximum price of furniture is given, the cost of which is borne equally by two persons, the rooms being sufficiently large for their accommodation. The only item of cost omitted, worthy of mention, is that of bed-clothing, which may be brought from home. As to other items of expense not connected with the club, such as tuition, incidental fees, etc., etc., they may be found in the University catalogue. It would, perhaps, be more satisfactory to state that we know the expense, to each of several of our most studious members, to have been no more than \$150.00 for the last year, including all expenses, excepting neither clothing nor railroad fare. There are many cases where students succeed on less, but economy itself would dictate the above amount.

Although the club buildings are under the immediate control of the University management, as is also the appointment of the matron, the entire business of the club is conducted by the members themselves, they being formed for the purpose into an organization which has, in addition to a commissary, all the officers necessary to a deliberative body.

The present system, as perfected in the last two years, has solved the question of cheap boarding, and at the same time has given the club the advantages which were formerly found only in private families.

#### J. H. DRUMMOND.

Each student furnishes his own room, which may be done at cheap rates. If convenient, he may bring furniture, at least in part, from home. All may bring bed-clothing, and had better do so.

Very young students ought not to enter the boarding clubs. While the president and professors frequently visit the rooms of the clubs the police duty devolves mainly upon the young men themselves, and is more effectively carried out than it could be by the Faculty. The rules are strict, and students of known shiftless ways or noisy habits are not admitted; or, if admitted, are soon cut off. Good behavior and quiet habits are indispensable, and none other than those possessing these characteristics can enter or continue members of the clubs.

It ought to be remarked that the health of the members of the clubs has been the average of the students of the University.

In many cases, it is best that boarding should be obtained in good private families.

#### RENTING ROOMS.

Students, in order to rent rooms at the cottages, or any other building belonging to the University, must apply to the proctor, and receive them upon the following conditions, viz.:

- 1. To keep the rooms in a proper and cleanly manner; in no way to injure or deface them, and to open them to the proper officers for inspection.
  - 2. To avoid boisterous and improper conduct.
- 3. To observe the rules of the house or club, and be subject to removal for non-payment of assessments, fines or charges, or a violation of said rules.
- 4. No student occupying a University room can exchange it with another student, or under-rent it, except by permission of the proctor.
  - 5. Rent is to be paid in advance, and before occupying the room.

The proctor shall in all cases, be the judge of the violation of these rules, and have full power to remove a student therefor; and in case of such removal, there shall be no re-payment of rent.

#### 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, and 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,

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. Dailey, 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 courts 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 equal 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, further, that three-fourths of the interest thus annually accruing shall be set apart, or so much thereof as may be necessary, to pay the 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.

the Columbia Female Academy or the State University, under the provisions nereinafter 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.

#### NOTE THAT

This fund is held by the county court of Boone county and invested in Boone county 8 per cent. bonds. About sixteen hundred dollars a year are available for aiding students.

As the Columbia Female Academy is defunct, 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 "both male and 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 is aggravated by being a beneficiary, and any part of an apportionment not paid may, on that account, be recalled at any time.
- 4. Other things being equal, "in selecting boys as above, preference may be given to such as evince an inclination to preach the gospel." (Item 10.)
- 5. 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.

6. 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, embracing the points presented above, and when filled, it will be considered and placed on file, for open inspection and preservation. Should any mistake or misrepresentation, of consequence, be brought to light, at any time, proper steps will be promptly taken. The applicants must appear in person at the opening of the first semester, September 8, as no reservations will be made.

It is very desirable that those who receive aid from this fund, according to the provisions of the will, should not feel themselves humiliated nor compromised in any respect. The money belongs to the worthy beneficiaries, and they are morally and legally entitled to it, just as if so much of the estate, out of which it has arisen, had been set apart and left to them by name in the will. It is the desire that none,

except those entitled to it shall, by mistake or otherwise, appropriate any of it; and, also that the lawful beneficiaries shall themselves receive, severally, only their just apportionments.

Dr. Anthony W. Rollins, who founded this aid fund, was the father of the Hon. James S. Rollins, who is President of the Board of Curators, and who, when a young man (1839), actively participated in the efforts which secured the location of the Missouri University to Boone county, as set forth on page 12 of this catalogue.

#### 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 students, in the Practical, Literary 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.]

By an act of the Board of Curators, June, 1874, it is provided:

- 1. That the graduates of certain institutions, named and designated in said act, shall be admitted to all departments of the University, except those of Medicine, Law and Engineering, "to receive instruction in the same manner as other students," without the payment of tuition fees; but on payment of \$5.00 per semester incidental fees.
- 2. That said resident graduates shall have the privileges of the library, on such terms and under such rules as the Executive Committee may determine.
- 3. That preliminary to admission, each entrant shall exhibit his or her diploma, in evidence of such graduation, to the President of the University, or at Rolla, to the Director. (This third point is made in the volume of Laws, published by order of the Board.) Therefore,

Resolved—First, That this memorandum of the aforesaid state of fact be spread on the minutes of the Faculty for convenience of reference; and,

Second, That 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.

#### COUNTY COURT APPOINTMENTS ABOLISHED.

The statute by which the county courts were entitled to appoint students, equal to the number of representatives from the county, to be free from tuition fees, was abolished by the Legislature, 1874-5.

#### LITERARY SOCIETIES.

There are two societies of young men connected with the University, viz.: The "Athenæan," and the "Union Literary." These societies have spacious and well

furnished halls in the University edifice, and hold weekly meetings for improvement in debate, declamations, oratory and composition.

These societies are in a flourishing condition, and form a most important means of culture, especially in speaking and writing.

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

On October 21, 1878, these societies petitioned for night meetings, and the Faculty granted permission on the following conditions, viz.:

- 1. That gas be introduced into the halls, and no separate lamps or lights be used therein.
  - 2. That the University janitors be entrusted with the fires; and,
  - 3. That there be no disorders consequent on said night meetings.

The Philalethean Society is the literary society of the young women. (See Ladies Department.)

#### PUBLIC SPEAKING.

WHEREAS, The Faculty of this University is entrusted with the guardianship and care of the students; and,

WHEREAS, The public holds them responsible for the intelligence and general worthiness of all speakers on public occasions; and,

WHEREAS, The exercise of power corresponding to this responsibility, is thereby rendered a duty, to be discharged in the interest of the authorities and patrons of this institution and of the public, whose educational interest it represents; therefore.

Resolved, That no person shall appear on any public occasion before the societies or students of this University, to deliver an address, oration, or in any other literary performance, without the previous approval of the Faculty.

The said approval may be of a list of names before choice, or all choices of persons not thus previously approved, shall be subject to said approval.

All students appointed to appear in any public entertainment, shall present their orations, declamations, or other exercises to the Professor of English, at least ten days before the appointed day of such public appearance.

If a student has incurred twenty-five demerits, or fails to submit his exercise to previous supervision, he is not permitted to appear and take part in any public exercise in the University, on penalty of expulsion from the Institution for so doing and forfeiture of all claims to any honors or prizes; and the same penalty of expulsion and forfeiture shall attach to taking part in the publication of any college paper without compliance with the regulation of the Faculty respecting a like previous supervision of the final proof sheets of the same.

RESOLUTIONS REGARDING THE ENROLLMENT OF CANDIDATES FOR GRADUATION.

Resolved—1. Every student proposing to graduate in any of the four academic courses is required to notify the Secretary of the Faculty before the close of the junior year, i. e., before the close of the 10th semester's work, of the degree or degrees, which he expects to take.

2. Every student having, in the manner indicated, given notification of his expected graduation, shall receive from the Secretary of the Faculty, besides the usual report of the work done by him during the previous year, an additional statement of any deficiencies, which appear against him on his requisition card, and

these he must make good, before his name can be enrolled as a candidate for graduation.

- 3. Every student who, at the end of the eleventh semester, shall have made good all such deficiencies and shall in addition have passed on the studies of the 11th semester, shall be enrolled by the Secretary of the Faculty as a candidate for graduation.
- 4. The names of all candidates for graduation thus enrolled shall be reported by the Secretary of the Faculty at the second regular meeting of that body after the opening of the second semester, for approval; and all candidates thus approved shall be entitled to the privileges of the senior class.
- 5. If a candidate for graduation, after having passed through the formalities before described, shall at the beginning of the 12th semester be found deficient in one class only, measured by one hour's daily work during one semester, his name, with the facts in the case, shall be reported by the Secretary at the time fixed in resolution 4, when the Faculty may by special vote enroll such student provisionally as a candidate for graduation, without, however, granting him any of the privileges of the senior class.
- 6. There shall be no other time or method for enrolling and approving candidates for graduation from the list of students attending this University; and recommendations to the Board of Curators for academic degrees shall be made only from the lists of such enrolled and approved students.

Adopted by Faculty June 4, 1884.

#### VALEDICTORIAN.

The academic class, and each professional class, chooses its own valedictorian. Rules for election of academic valedictorian, and class representation:

- 1. That the vale dictorian shall be elective.
- 2. That only those seniors who take one or more of the following degrees, viz: A. B., S. B., L. B., A. D. B., and shall have attained the grade of first rank with distinction shall be voted for by the class for the honor of valedictorian at commencement. If there are not two or more Seniors so eligible, the Senior who has the highest grade in the Academic course shall be ipso facto the valedictorian of his class, i. e., without election by the class, and the person to be so designated shall be determined by the Secretary of the Faculty on comparison of the relative grades made by the first of May in each year.
- 3. That the right to vote for valedictorian be accorded to those only recognized by the Faculty as candidates for graduation with one or more of the above named degrees.
- 4. That an essay or thesis be required as representing each of the classes graduating from the Normal, Agricultural and Engineering schools; the manner of selecting said essay or thesis being left to the heads of the several departments.

#### PRONUNCIATION.

WHEREAS, Uniformity of pronunciation is extremely necessary among the coworkers in an educational institution; and,

WHEREAS, This uniformity can be secured only by the adoption of some standard authority and strict adherence to its teachings; therefore,

Resolved, That the standard of pronunciation in the University of Missouri shall be Webster's Unabridged Dictionary of any edition not earlier than that of 1864.

#### PRIZES.

IN ORATORY-Founded by Hon. James L. Stephens, a retired merchant of Columbia, and annually awarded for the best oration of Senior Class.

A book in defense of the Christian religion and a Gold Medal, for the purchase of which the annual interest on \$500 is available.

The following resolutions in regard to Stephens Medal were passed by the Faculty January 15, 1884:

Resolved, 1. That contestants for the Stephens Medal shall, prior to the last Saturday of March, furnish to the Faculty satisfactory evidence of fulfilling all the requirements for graduation at the coming commencement.

- 2. That their subjects shall be submitted to the Professor of English for approval on, or before, the last Saturday in February; and their finished orations on, or before, the last Saturday in March.
  - 3. That the judges for the contest shall be selected by the Faculty.
- 4. That in case of the failure of the successful contestant to graduate, the medal for that year shall not be given.

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.

IN DECLAMATION.—The Literary Societies, to best speakers in declamation contest.

In Physics.—S10 in money, by Charles Dachsel, engineer, Jefferson City, Mo., for best Thesis on Steam Engine.

Subject for "English Medal," 1885-6, "Carlyle as a Husband."

For the Appleton prize for competition in the Sophomore and Junior classes and the Medal for the Senior Class, see Latin Department.

The heads of the several departments dispense prizes and distinctions in their discretion.

#### PROMPT ATTENTION TO FACULTY NOTICE

Students for whom special appointments, assignments or requirements are made by the Faculty, shall be notified of the same by notice upon the University bulletin board, on the morning following the meeting at which such minutes are made. All students failing to meet the requirements by noon of the succeeding Thursday, shall suffer a penalty of 19 demerits fer each day of such failure.

#### CO-EDUCATION.

Since 1868, girls have been admitted to the classes of the Missouri University. This experience is favorable.

The theory of the case may be enunciated thus:

Conceding that the work of education is a legitimate function of the State, and also, that the right of the girls to an education is as valid as that of the boys—then, either the State should provide for the girls the means of a separate education, relatively equal or equivalent to that provided for the boys, or else, admit them, on equal footing, to the same advantages. No question can be successfully raised over the competence of the State as an educator; nor, over the rights of the young women to educational provisions in their behalf, comporting with those made for the young men; and hence, it becomes the plain practical question:—Whether the State is likely to provide such advantages separately? As there is no likelihood of

this being done, we are shut up to the alternative of co-education in our State institutions, unless experience be adverse to the policy of it. However, as a matter of fact, experience favors it—16 years of experience here, in the Missouri University, favor it; not to speak of a like favorable experience on the part of others.

It is urged on parents, in placing their children at the University, sons and daughters, to come with them and to arrange with private families for a suitable domestic oversight and care. It is believed to be a great misfortune for youth of either sex to be isolated from proper domestic supervision, whilst in a course of education. May not reliance be placed on private families to provide accommodation for the students, equal to the growing demands of the University? The whole community thereby become the University community, and all prosper together. (For further information, see Ladies Department, page 69).

#### FACULTY MEETINGS.

The Academic Faculty meets regularly every Tuesday, at 4 P. M. The special Faculties meet upon the call of the president or of the respective deans.

#### FACULTY TO PRESENT THE CLAIMS OF THE UNIVERSITY.

A committee from the Board of Curators called upon the Faculty June 4, 1879, and stated that it is the desire of the Board that the Faculty, during vacations, present to the people of Missouri the claims of the University; and that some systematic plan should be adopted to effect any good, it was then,

Resolved by the Faculty, That we have heard with pleasure the remarks of the Committee of the Board of Curators, in reference to making known the claims of the University among the people of the State, and promise hearty co-operation in the common effort to build up and make known the State University—some systematic plan to be decided on before the Faculty leave for the summer.

In pursuance of this idea, the congressional districts of the State are, by lot, distributed among the members of the Faculty as follows:

1st	district.	***************************************	Prof. Blackwell.
2d	"	•••••	Prof. Lowry.
3d			
4th			Prof. Black.
5th			
6th	6.6		Prof. Fleet.
7th	"	.,	Prof. Tracy.
8th	"	· · · · · · · · · · · · · · · · · · ·	Prof. Thomas.
9th			
10th	"		Prof. Spencer.
11th	"		Prof. Ficklin.
12th	"		Prof. Cauthorn.
13th			Prof. Fisher.
14th			

Those educators wishing the co-operation of the Faculty, will best accomplish their purpose, by communicating with the individual professor to whom is allotted their particular district.

#### 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, the interest of which, only, is used. It is hoped that all graduates of the University, whether academic or professional, will become members of the Association. The Librarian solicits aid in securing facts for the next triennial, and will be thankful for published notices of, or books, or pamphlets and articles, published by officers and graduates.

Information is also asked for, touching all who have held offices in the University, especially those who are deceased. Before the issue of the next triennial, it is hoped information will be collected for a biographical sketch of each of the deceased officers and graduates,

The officers of the Association are: Gen. Odin Guitar, Columbia, Pres.; J. V. C. Karnes, Kansas City, 1st V. P.; Jno. H. Overall, St. Louis, 2d V. P.; C. B. Rollins, Columbia, Sec., and J. S. Clarkson, Columbia, Treas. Orator, Hon. S. B. Elkins, New York.

#### ALUMNI REUNION.

In the progress of events, and in obedience to the voice of the people, the Missouri University has been established upon a broader and firner basis than ever before, and is fast coming up to the full idea of an American University. Her every department now bristles with life and living science. She now furnishes, through her academic and associated professional schools, the kinds of education which correspond at once to the spirit of our Republic and the wants of the people at large. These merits of our University were shown, and her aims and wants made known to the 32d General Assembly, and that able body responded with an enlightened liberality, an open-handed generosity at once encouraging and phenomenal. The members, in largely controlling numbers, rising above all adverse prejudices and distracting partisan influences, vied with each other in helping the University on her prosperous way, by voting a generous sum for enlargements and the 33d General Assembly supplemented it.

The productive endowment funds of the University—including the Agricultural College—have, within the last few years, by the sale of Agricultural College lands, been more than doubled, and now amount to over five hundred thousand dollars. Four-fifths of the whole of this productive endowment fund is from the United States. The whole property of the University may be set down at nearly one million dollars, of which the plant or campus and buildings (enlarged as provided for by the 32d and 33d General Assemblies), the farm of over six hundred acres and its improvements, may be put at two hundred and fifty thousand dollars, and the un-

sold lands at one hundred thousand dollars.

Here are indications of a growth most vigorous and healthy. A broad and firm foundation is laid, and a good beginning is made. The perpetuity of the University is guaranteed; and the kind of a University that the State desires and will have, is settled; and the great concern at the present time is to provide for the continued growth of the University and to avert the calamity of an arrest of her development. So that now the only question is how long shall we be in building up our ALMA MATER till she becomes to this great empire State of the Mississippi Valley what Ann Arbor is to Michigan, or Virginia University to the Old Dominion? and the answer to this question depends largely upon the united exertions of the ALUMNI. We ALUMNI now number 1,000, dispersed throughout the West. Almost every county in Missouri has in it one or more representatives. And these graduates, from their

influence and positions, are the moulders of public thought on higher education yes, gentlemen, to-day you have to a large extent the future of this University in

your own hands.

We are aware that heretofore the Alumni, upon going out into the world, have too often maintained a masterly inactivity and profound silence in regard to the University. Now let us arouse from our lethargy, and co-operate. Co-operation is the charm-word—United we are strong. Graduates of the University! Come one, come all, to the reunion of the Alumni, June 4, 1884. Come on, a thousand strong, meet your old class-mates and friends of college days, renew your fealty to your Alma Mater, inform yourselves thoroughly as to what the University IS, and what she should be. Then, upon your return home, keep before the people the merits, the aims and the wants of your Alma Mater, and you will soon see her still more deeply rooted in the confidence and affections of the people, swept along on the wave of a swelling population and growing wealth, till her sun is full high in the heavens—till she be indeed the great throbbing heart of our State educational system, sending the life-blood of learning, virtue and patriotism coursing through all its arteries and veins—till she becomes the pride and the glory of the Mississippi Valley.

# CALENDAR.

#### 1885.

September 8, Tuesday	. All Academic and Prof. Schools open.
November 7, Saturday	.Athenæan Society open session.
November 21, Saturday	.Union Literary Society open session.
December 23, Wednesday	. Close for Holidays.

#### 1886.

January 4, Monday	.Reopen.
January 11 to January 16	.Examination at the close of 1st Semester.
January 19, Tuesday	
January 30, Saturday	.Junior Medal Contest.
February 13, Saturday	Exhibition of Young Ladies Society.
February 20, Saturday	. Societies appoint prize Declaimers.
March 6, Saturday	.Inter-Society Contest.
March 25, Thursday	
April 17, Saturday	Prize Declamation Contest.
April 24, Saturday	. Contest for Stephens Medal.
May 1, Saturday	.Exhibition of Union Literary Society.
May 15, Saturday	.Exhibition of Athenæan Society.
May 30, Sunday	.Baccalaureate Discourse.
June 1, Tuesday	
June 1, Tuesday	. Address before Societies.
June 2, Wednesday	.Oration before Alumni.
June 3, Thursday	Commencement.

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# APPENDIX.

### ENDOWMENT OF THE UNIVERSITY.

[The difficulty with persons inclined to make donations heretofore, was, that they knew not how to make them perfectly safe. The following law remedies this difficulty. It is drawn precisely in accordance with Sec. 6, Art. XI. of the Constitution of the State of Missouri, and any persons desiring to make provision for the benefit of any district school connected with the public school system of the State, or to establish scholarships or additional professorships, or departments, or permanent prizes in connection with the State University, to stimulate and encourage ambitious and meritorious youths, male and female, can do so by granting, giving or devising any money or property of whatever kind, which they may desire to dedicate to such objects, by turning over and delivering the same to the Treasurer of the State, according to the terms of the law.

The State of Missouri is constituted the custodian and trustee of all such funds, and pledges herself for the safe-keeping, investment and due application of the same in carrying out the purposes and wishes of such grantor, donor, devisor or testator, according to the instrument of writing making such grant, gift, devise or bequest. The fact that the University has over half a million productive Endowment gives

assurance of its permanency.]

An ACT to encourage and increase the public school fund of the State by grant, gift or divise, as provided for in section six (6), article eleven (XI.), of the Constitution of Missouri, and to provide for its safe and permanent investment.

Be it enacted by the General Assembly of the State of Missouri, as follows:

Section 1. It shall hereafter be lawful for any person to grant, give or devise to the Public School Fund of the State, any money, property, real or personal, choses in action of every kind and description, the same to be turned over and delivered to the Treasurer of the State, and to be disposed of by him in the manner hereinafter provided for.

- SEC. 2. For any money, property or choses in action delivered to the Treasurer, under this act, he shall give duplicate receipts, one of which shall be filed in the office of Auditor of State, who shall charge the Treasurer therewith.
- SEC. 3. A certified copy of the instrument of writing, evidencing such grant, gift or devise, shall also be delivered to the State Auditor, and duly recorded by him, in his office, in a book to be kept specially for that purpose, and the original shall be recorded in the recorder's office of the county where said grantor, donor or devisor lives, or resided at the time of his death.
- Sec. 4. Said Treasurer shall, as early as practicable, dispose of the property granted, given or devised, according to the terms specified in the written instrument, granting or giving to the same the Public School Fund, and if the same be in money, or after the property is converted into money, it thall be securely invested and sacredly preserved as a part of the "Public School Fund," as provided for by the Constitution of this State, whether the same be given for the free public schools or for the benefit of the State University, and the annual income of which fund shall be invested, re-invested, appropriated and disbursed, and paid over according to the terms of the writing making such grant, gift or devise, and for no other uses or purposes whatsoever.

- SEC. 5. For all property or money received under this act by the State Treasurer, he and his securities shall be responsible for the safe keeping, investment, reinvestment and disbursement of the same on his official bond.
- Sec. 6. In all cases where any such grant, gift, devise or bequest has been made by any person for educational purposes, in aid of or connected with the free public school system, or of the State University, and from any cause the terms of such grant, gift, devise or bequest cannot be executed or carried out according to the terms and conditions of the same, it shall be lawful for the person or persons having the charge thereof, or holding the same in trust, or any person interested therein, to file a petition in the circuit court of the county where such grantor, donor, or testator died, setting forth all the facts connected therewith, and in the discretion of the court in which said petition may be filed, an order may be made directing that the amount of such grant, gift, devise or bequest shall be turned over to the Treasurer of the State, as a part of the Public School Fund, according to the terms and conditions of this act, and securely invested, re-invested and sacredly preserved; the annual income on which fund shall be faithfully appropriated, as near as may be, in meeting and carrying out the purposes and wishes of such grantor, donor, devisor or testator, according to the instrument of writing making such grant, gift, devise or bequest.
- SEC. 7. The State of Missouri is hereby constituted the custodian and trustee, under this act, of all such funds, and pledges itself for the safe keeping, investment and due application of all funds, with the interest thereon, which may be deposited in the Treasury, in pursuance of this act.
- SEC. 8. The Auditor and Treasurer shall, in the reports required by law to be made by them to the General Assembly, from time to time, make a full report of all sums that may be made to the Public School Fund under this act, by whom made, and the precise expenditure of the annual income and growth of said fund.

Approved March 16, 1881.

#### PERMANENT INVESTMENT OF EDUCATIONAL FUNDS.

[A correct copy of the law.]

AN ACT to provide for the permanent investment of any moneys remaining in the State Treasury and belonging to either the "Public School Fund" or "Seminary Fund," (which is the University Fund,) of the State, or that may hereafter be paid into the State Treasury, to be added to either of said funds, and to provide for cancelling any Missouri State bonds now held by any educational institution under the control of the State by issuing therefor certificates of indebtedness of the State bearing five per centum interest per annum, payable semi-annually.

Be it enacted by the General Assembly of the State of Missouri, as follows:

Section 1. The Board of Fund Commissioners of the State shall, upon the passage of this act, issue a certificate of indebtedness of the State of Missouri, payable twenty years after date and bearing interest at the rate of five per cent. per annum, payable semi-annually on the first days of January and July of each year, for all bonds of the State of Missouri now in the hands of the Treasurer of the Board of Curators of the State University, except such bonds as may have been called for redemption by the State, and purchased with moneys derived from the sale of agricultural college lands, estimating said bonds at their par value, and hereafter whenever any of the remaining agricultural college land shall be sold, amount-

ing to five thousand dollars, and the proceeds of the sale thereof paid into the State Treasury, a similar certificate of indebtedness shall be issued bearing interest at the rate of five per cent. per annum, payable semi-annually and held in trust by the State as part of the "Seminary Fund."

- SEC. 2. Said certificate of indebtedness shall be signed by the Governor, countersigned by the Secretary of State and sealed with the great seal of the State; shall be non-negotiable and shall be sacredly held and preserved in the State Treasury as part of the permanent Seminary Fund of the State.
- SEC. 3. Hereafter, when any moneys shall be paid into the State Treasury, from whatever source derived, whether by grant, gift, devise, or from any other source, to be added to either the "Public School Fund" or the "Seminary Fund" of the State, and when the same shall amount to one thousand dollars, the said Board of Fund Commissioners shall issue a certificate of indebtedness of the State of Missouri like that provided for in sections one and two of this act, and in accordance with the terms of the gift, grant or devise, making additions to the public school fund or seminary fund of the State, except in cases where moneys are required, by special gift or devise, a separate certificate shall be issued for each gift or devise, and for the amount of such gift or devise, said certificates to be made payable twenty years after date, the interest thereon to be paid semi-annually, to be forever used and appropriated in accordance with law, and the gift, grant or devise providing said fund for public educational purposes, under article XI. of the Constitution of this State and an act approved March 16, 1881, entitled "An act to encourage and increase the public school fund of this State by grant, gift or devise as provided for in section six (6), article eleven (11) of the Constitution of Missouri, and to provide for its safe and permanent investment."
- Sec. 4. The certificate of indebtedness authorized to be issued under this act to the permanent public school or seminary fund of the State shall specify the purposes to which said funds are dedicated, the source from which derived, and the disposition of the interest to be paid on the same; they shall be printed on good parchment paper, and shall be and remain sacred, irrevocable obligations of the State, unconvertible and untransferable, for the purposes of their issue as so much of the permanent "Public School Fund" or "Seminary Fund," the interest thereon to be appropriated regularly in accordance with the terms of said certificates, and to commence running from the date of the delivery of said Missouri State bonds or the payment of the money into the Treasury of the State.
- SEC. 5. All interest due upon the bonds herein referred to down to the date of their surrender or delivery shall be paid over to the Treasurer of the Board of Curators of the University of the State of Missouri, and one-fourth of the interest thus collected shall be paid by him to the Treasurer of the School of Mines, at Rolla. according to law.
- SEC. 6. All bonds of the State of Missouri, referred to in this act, shall be delivered to the State Auditor, and as soon as the certificates contemplated to be issued in lieu thereof shall be delived to the State Treasurer, the State Auditor shall proceed, in the presence of the Board of Fund Commissioners, to cancel the same and all interest coupons thereto attached, by punching, and he shall preserve the same in the scrap-book bond register kept in his office.
- SEC. 7. The State of Missouri is hereby constituted the custodian and is made the trustee of all moneys which may be paid into the State Treasury under this act, and of the certificates of indebtedness which may be issued under the same, and the honor and good faith of the State is hereby pledged for the faithful performance of the trust herein created.

[Extract from the address of Hon. H. T. Kent to the Graduating Class of the Law Department, March 27, 1884.]

In conclusion, I trust you will pardon me in leaving the subject of this address to express my gratification in this, my first visit to this Institution. It has not been a stranger to me though, in the knowledge of its influence or the greatness of its work, and I am more than ever confirmed in the wisdom of an interest manifested officially in its advancement. As I gaze upon your structure now assuming magnificent shape, it is not its broad and deep foundation, its massive columns, architrave or dome, that excite my enthusiasm so much, as that I see in its rise a meaning that all lovers of education will welcome as the harbinger of a new era in your existence.

You who have been associated in its management and control, are to be congratulated, nay, the people of Missouri are to be congratulated that henceforth there will be no longer the cry of local school, but it will be seen and known of all men as a University commensurate with the greatness and wealth of this imperial State. Will you further indulge me in saying that in this presence and amidst these surroundings I revive many memories of my own Alma Mater. [The Virginia University.] Standing to-day by the simple granite tombstone, worn and marred by age, so soon to be placed with appropriate ceremonies—it carried me back to the spot where I used to look upon it in my college days, marking, as it did for so many decades, the last resting place of the immortal Jefferson. It was a happy thought that, in giving place to one of grander proportions raised by a Nation's gratitude, it should be transported beyond the great river to the bosom of a State whose territory was acquired by his wise foresight and statesmanship, to stand for all time upon the grounds of an institution modeled after that University which was the crowning act of his eventful life. How fortunate, young gentlemen, that your footsteps have led you to these quiet retreats and to the enjoyment of these splendid opportunities. Remember, though, that the greater the advantage, the graver the rssponsibility. Within the narrow space, the circumscribing shores of which mark the beginning and the ending of our lives, there are duties to be performed—there are works to be accomplished, if we would make this life of ours a highway of honor, that almost appall us with their magnitude. How wise in the economy of nature that the buoyancy and hope of youth obscure the obstacles of our pathway and give us nerve and strength in the preparation to conquer them. You may not grow into greatness as sounded by the trump of fame, or measured by the standard of wealth, the golden calf of the present day and generation, but surely it is within the compass of all to make the world brighter, and happier, and better for having lived and acted well your part within it.

Is not this a noble ambition? worthy the loftiest nature—worthy your best endeavor and self-sacrifice to so live that your eulogist may say of you, when gone, that you have but

"Joined the choir invisible
Of those immortal dead who live again
In minds made better by their presence, live
In pulses stirred to generosity—
In deeds of daring rectitude, in scorn
For miserable aims that end with self;
In thoughts sublime that pierce the night like stars
And with their mild persistence urge man's search
To vaster issues."

# MEMORIAL

OF THE

# BOARD OF CURATORS.

# RESOLUTION.

At the annual meeting of the Board of Curators of the University of the State of Missouri, held at Columbia, June 4, 1884, on motion of Hon. Norman J. Colman, the following resolution was unanimously adopted:

"Resolved, That the President of this Board be requested to prepare a memorial to be presented to the next General Assembly of the State, stating in a clear, explicit manner the relation which the University and its different departments bear to the State; the obligation resting upon the State, under the Constitution to maintain the Institution and its Departments, and to provide for its ample endowment sufficient to meet the higher educational wants of all the youth of the State; and thus to relieve the institution from all suspense, and uncertainty in respect to the question of its annual, and necessary income for the support of its various departments, and that in such Memorial such facts and considerations be clearly stated as have a bearing upon this important subject, and which will authorize and justify the General Assembly to enact such laws as will effect this end."

JEFFERSON CITY, Mo., January 30, 1885.

Ordered by the Senate that 3,000 copies of the memorial of the Board of Curators of the University of the State of Missouri be printed, 1,000 copies for the appendix, 1,000 copies for the use of the Senate and 1,000 copies for the use of the House.

F. C. NESBIT, Secretary Senate.

# MEMORIAL.

In accordance with the foregoing Resolution the following Memorial of the Board of Curators of the State University, is presented:

To the Senate and House of Representatives of the General Assembly of the State of Missouri:

THE CONSTITUTIONAL RELATION WHICH THE UNIVERSITY, AND ITS VARIOUS DEPARTMENTS BEAR TO THE STATE.

The foundation of the free government under which we live must forever rest upon the intelligence, the virtue, and the patriotism of the people. Prior to the adoption of the Federal Constitution, in the ordinance of 1787, under which Virginia ceded to the United States all that country lying northwest of the Ohio river, and out of which there has since been carved the great States of Ohio, Indiana, Illinois, Michigan and Wisconsin, we find the following provisions:

"And for extending the fundamental principles of civil and religious liberty, which form the basis whereon these republics, their laws and constitutions are

"It is hereby enacted and declared, by the authority aforesaid, (i. e., of the United States in Congress assembled) that the following articles shall be considered as articles of compact between the original States and the people in the said Territory (northwest of the river Ohio), and forever remain unalterable, unless by common consent, to wit:

"ARTICLE 3. Religion, morality and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged."

This great ordinance was penned by Thomas Jefferson, and in it we find the key-note upon the subject of education, which has been sounded through all the history of the republic down to the present time.

The above article of the ordinance of 1787 was re-enacted in the act of Congress of 1812 organizing the Territory of Missouri, substantially in the following language:

"Religion, morality and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall be encouraged and provided for from the public lands of the United States in said Territory, in such manner as Congress may deem expedient."

The same thing was repeated in the Act of Congress, approved March 6, 1820, to authorize the people of Missouri Territory to form a constitution and State government. The convention which met in pursuance of this Act, and formed our first State constitution, followed the precedents above referred to, as will be found in chapter 2, subject, Education, sections I. and II. of said instrument:

# [From the State Constitution of 1820.]

SECTION 1. Schools and the means of Education shall forever be encouraged in this State; and the General Assembly shall take measures to preserve from waste or damage such lands as have been, or hereafter may be granted by the United

States for the use of schools within each township in this State, and shall apply the funds which may arise from such lands in strict conformity to the object of the grant; one school or more shall be established in each township as soon as

practicable and necessary, where the poor shall be taught gratis.

SEC. 2. The General Assembly shall take measures for the improvement of such lands as have been, or may hereafter be granted by the United States to this such lands as have been, or may hereatter be granted by the United States to this State for the support of a seminary of learning; and the funds accruing from such lands by rent or lease, or any other manner, or which may be obtained from any other source for the purposes aforesaid, shall be and remain a permanent fund to support a university for the promotion of literature and of the arts and sciences; and it shall be the duty of the General Assembly, as soon as may be, to provide effectual means for the improvement of such lands and for the improvement and permanent security of the funds and endowments of such institution.

This was never properly done.

And also in the Constitution of 1865, with some change in phraseology, we see the same policy adhered to in the following:

[From the State Constitution of 1865.]

Section 1. A general diffusion of knowledge and intelligence being essential to the preservation of the rights and liberties of the people, the General Assembly shall establish and maintain free schools for the gratuitous instruction of all persons in this State between the ages of five and twenty-one years.

SEC. 4. The General Assembly shall also establish and maintain a State University, with departments for instruction in teaching, in agriculture and in

natural science, as soon as the public school fund will permit.

SEC. 5. The proceeds of all lands that have been, or hereafter may be grafted by the United States, to this State, and not otherwise appropriated by this State or the United States; also, all moneys, stocks, bonds, lands and other property now belonging to any fund for purposes of education; also, the net proceeds of all sales of lands and other property and effects that may accrue to the State by escheat, or from sales of estrays, or from unclaimed dividends, or distributive shares of the estates of deceased persons, or from fines, penalties and forfeitures; also, any proceeds of the sales of public lands which may have been or hereafter may be paid over to this State, (if Congress will consent to such appropriation); also, all other grants, gifts or devises, that have been or hereafter may be made to this State, and not otherwise appropriated by the terms of the grant, gift or devise, shall be securely invested and sacredly preserved as a public school fund, the annual income of which fund, together with so much of the ordinary revenue of the State as may be necessary, shall be faithfully appropriated for establishing and maintaining the free schools and the University in this article provided for, and for no other uses or purposes whatsoever.

And thus again in the Constitution of 1875, almost the identical language is preserved as follows:

SEC. V, ART. XI. "The General Assembly shall, whenever the Public School Fund will permit and the actual necessity of the same may require, aid and maintain the State University now established with its present departments.'

It is in these laws, and in the provisions of the different Constitutions of Missouri above quoted, that the foundation of the Free Public School System of Missouri was laid. It runs through a period of almost a century. In all the changes and vicissitudes that have occurred in our country in this long time, both the purpose and obligation of the Governments, General and State, have been steadily maintained that the people should be educated. And when we remember the fact that nearly one-fifth of the voting population of the United States to whom is entrusted the destinies of the country, can neither read nor write it must be apparent to every intelligent, thoughtful citizen that the necessity of the hour is the better and higher education of the masses in all the States.

Missouri has undertaken, under her organic laws, adopted at different times, as above shown, to perform her part of this important work, which is to provide a system of Free Public Schools, and to "aid and maintain the State University now established, with its present departments," in a manner commensurate with the wants of the people and the advanced state of literature and science in our own, and other civilized countries.

This system of education so wisely planted in all our Constitutions by those who framed them, and to the liberal support of which the present generation is solemnly pledged by every incentive of honor and patriotism, has been enlarged by statutory provisions, creating a system of Normal Schools for the education and supply of teachers for the Common Schools of the State, which compose a part of our Public School System, and which have equal claims for support upon the representatives of the people. The above are the general views and opinions entertained by this Board, and the reasons succintly given on which their views are founded.

The Curators chosen under the Constitution from different parts of the State; appointed by the Governor, by and with the advice and consent of the Senate; having no interest to subserve, but the common good of all the people of the State, it is their province under the law to make such recommendations to the General Assembly, as their best judgment will justify in regard to the wants and the provision which should be made for the State University, standing as it does at the head of the Public School System. In the Catalogues of the Institution, which are annually published, and in the Report of the Committee authorized by law to visit the Public Institutions, and also in the report of the Treasurer of the Institution with a statement of the receipts and expenditures, together with the estimates contained therein of the needed biennial appropriations to meet the current wants of the University and its various departments, and with the facts stated in this Memorial your honorable bodies will be better prepared to pass those laws dictated by a liberal and wise policy. It must not be forgotten that thus far in the history of the Institution, established forty-five years ago, far the greater portion of its means has been derived from the General Government and the county in which it is located. This fact of itself will suggest the idea to every liberal-minded legislator that the State should at least provide an equivalent sum to that derived from other sources, and for which not a dollar of tax has been levied upon the people of the State, and especially so when it is further remembered that this is a State institution belonging to all the people alike; the title to its property being in the State and being as much a part of the State as its Judicial, Legislative and Executive Departments, or of the very Capitol in which you sit, and the laws are made. The Legislature could not, if it would, separate itself from one of the most interesting and important institutions belonging to the State no more than it could ignore itself, or the Executive, or Judicial Departments of the commonwealth. They are inseparably welded, and the good of each is always to be provided for in order to promote the welfare and good of the whole.

THE NECESSITY OF THE STATE PROVIDING A SYSTEM OF EDUCATION TO MEET THE WANTS OF ALL THE YOUTH OF THE STATE.

Prior to the adoption of the Federal Constitution the education of the masses of the people had been mainly entrusted to the Church, both in our own and many, of the enlightened countries of Europe. In our experiment of Free Government a different sentiment took possession of the public mind. It was this: That whatever private individuals or the Church might do in the encouragement of education, it was the imperative and sacred duty both of the General and State Governments to provide a system of education that would reach every child in the humblest log-cabin in the land. Hence the large grants of land made from time to

time by the Federal Government to the different States to aid in this grand scheme of enlightenment; as well as the ample provision, and large endowments made by many of the States for their Colleges and Universities; it became an axiom in the political thought of the entire country, that in order to preserve and perpetuate the blessings of liberty to themselves, and their posterity, the State must provide the means for the education of all its inhabitants, and this to-day is the true American sentiment, and it will remain so, as long as our Free Institutions last.

# WHAT MANY OF THE STATES HAVE DONE FOR HIGHER EDUCATION.

Upon this subject some States are greatly in advance of others, but as a larger intelligence prevails, this sentiment is becoming stronger in the minds of the people, and it is well to remark that just in proportion as the people of the different States have advanced upon this subject, in the same proportion have they become more enlightened, freer, happier, and exercise a wider influence in directing our great governmental policies; and not until the people of Missouri can say, as has been said of other States, when intelligent strangers visit us, "we point you first to our Free System of Public Schools, then to our Colleges and Universities, then to our Practical, Industrial and Art Schools," can we say these are the evidences of our civilization, and these are policies which in the end will make ours the freest and proudest commonwealth on the American continent. Missouri ought to aspire to nothing short of this.

In regard to this important subject, and among the Southern States, Virginia, under the guidance of Thomas Jefferson, the great apostle of religious freedom and human liberty, after being President of the United States for eight years, and serving his country abroad as Foreign Minister, studying whilst there the systems of education in vogue among the most enlightened nations of Europe, he was better prepared to instruct his fellow-citizens as to what system would suit them best; and after he had thrown off the cares of office, and retired to private life, he conceived the idea of giving to his native State, Virginia, a system of education adapted to the wants of her people, and the character of the Free Government which he had aided so largely in establishing. In this system he embraced both the lower and higher education, the free common schools, and the University. In an able report written and signed by Mr. Jefferson and Ex-President Madison, and other eminent Virginia statesmen of that day to the Legislature of the State, dated August 4, 1818, after recommending the system of common schools favored by them, Mr. Jefferson states in a few words some reasons for establishing a University under control of the State and in the same able report sets forth the studies which should be pursued therein. This was the beginning of the foundation of the University, of Virginia, at this time the leading scientific and literary institution in the Southern States. The following is the language of Mr. Jefferson, at that early day, upon this subject. After presenting the argument in favor of a system of common schools. he adds:

"To form the statesmen, legislators and judges, on whom public prosperity,

and individual happiness, are so much to depend.

<sup>&</sup>quot;And this brings us to the point at which are to commence the higher branches of education, of which the Legislature require the delopment; those for example which are:

<sup>&</sup>quot;To expound the principles, and structure of government, the laws which regulate the intercourse of nations, those formed municipally, for our own government and a sound spirit of legislation which banishing all arbitrary and unnecessary restraint on individual action, shall leave us free to do whatever does not violate the equal rights of another.

"To harmonize and promote the interests of agriculture, manufacturers and

commerce, and by well informed views of political economy to give a free scope to the public industry.

"To develop the reasoning faculties of our youth, enlarge their minds, cultivate their morals, and instill into them the precepts of virtue and order; to enlighten them with mathematical and physical sciences, which advance the arts, and

administer to the health, the subsistence, and comforts of human life.

"And generally to form them to habits of reflection and correct action rendering them examples of virtue to others, and of happiness within themselves. These are the objects of that higher grade of education, the benefits and blessings of which the Legislature now propose to provide for the good and ornament of their country, the gratification and happiness of their fellow-citizens, of the parent especially and his progeny, on which all his affections are concentrated.

The University of Virginia to-day is the pride and glory of that grand old commonwealth. In sustaining it she has set a noble example for immitation for her sister States. Since its establishment, not more than sixty years ago, Virginia has appropriated upwards of two millions from her treasury for the purchase of grounds, procuring an outfit in the way of a library and apparatus, erecting of necessary buildings and for the support of the institution, and is to-day appropriating \$30,000 annually for its maintenance.

In thus maintaining her University, and according to an estimate made some years since, by the chairman of the Faculty, no less than \$14,476,800 has been brought into and retained in the State by offering all the advantages of education to her own and to the youth of other States.

In addition to the above Virginia has appropriated for endowment, for support, and building purposes to her Agricultural and Mechanical College, a separate and distinct institution from her University, and of recent establishment, the sum of \$471,000. These facts I mention by way of encouragement to your Honorable bodies, to legislate liberally in behalf of your own University, the only similar institution recognized in our constitution belonging to and under control and government of the State. Missouri though much younger is more populus, and a far wealthier State than Virginia; and with the facts stated above should not hesitate to appropriate for the benefit of her University, and Agricultural and Mechanical College located at the same place, at least one half of that amount, for endowment, building purposes, for educational appliances, and for the permanent support of these institutions, including the School of Mines at Rolla.

It might be well for legislators in discussing this question to look beyond our own borders and see what other States have done and are doing for higher education-the comparison might not be altogether favorable to Missouri. Let us see what some of the other States have done for their Universities and Agricultural Colleges, none of them possessing the wealth of Missouri.

The fact must not be overlooked that in disposing of the Agricultural College Land Grant, donated by the General Government under act of Congress of July 2, 1862, Missouri made her Agricultural College a Department of her University, thus, blending two Institutions in one; and at the same time saving the vast expense of supporting two Colleges instead of one; for if the Agricultural College had been located elsewhere, it would have necessitated a duplication of buildings, professorships, libraries, laboratories and all the paraphernalia required to carry on a respectable institution.

Other States pursued a different policy, and separated their Agricultural Colleges from their Universities.

The University of Michigan is located at Ann Arbor, whilst her Agricultural College is at Lansing in a different part of the State, and yet Michigan, a smaller, less wealthy and less populous State, admitted into the Union in 1837, seventeen Years after Missouri, has appropriated for her University proper for buildings and permanent improvements, \$344,000. For permanent endowment fund, \$480,000, on which the State pays 7 per cent. interest. The standing annual appropriation for the University is in addition, \$46,500. And at every session of the legislature extra appropriations are made for current expenses. For the support of her Agricultural College for land, erection of buildings, fixtures, and permanent improvements, the State has appropriated the sum of \$581,756. The endowment fund amounts to several hundred thousand dollars, on which the State pays 7 per cent. interest quarterly. Thus giving to the two institutions, an annual income of more than \$150,000.

California, admitted into the Union in 1850, thirty years after Missouri, has appropriated for her University proper, for buildings and equipments, the sum of \$440,710. State permanent endowment fund \$870,000, on which she pays 6 per cent. interest annually; for the support of the institution, \$52,200.

In California the Agricultural and Mechanical College is made a part of the University, the same as ours. For buildings and for the support of this department, the State has appropriated \$276,897.

It may be well to mention a few other instances:-

Georgia has appropriated for the benefit of her State University, \$328,000.

Illinois for her Industrial University, located at Champaign, \$384,000.

Iowa for her University and Agricultural College, the one at Iowa City and the other at Ames, upwards of \$1,000,000.

Kansas for her University and Agricultural College more than \$600,000.

Minnesota for her University and Agricultural College, located together at Minneapolis, \$629,000.

Mississippi has appropriated for her University proper, \$759,000; and for her two Agricultural Colleges—one white and the other colored—\$510,000.

Wisconsin for her State University and Agricultural College, which are united and located at Madison, has appropriated \$686,000, and has an annual income of between \$80,000 and \$90,000. This Institution by the burning of its Scientific building with its contents, recently, sustained a loss of \$250,000.

The permanent fund of the University of Texas is 2,000,000 acres of land, worthnow \$5,000,000, and 30,000 acres of land additional, valued at \$300,000.

Besides the landed fund above spoken of, she has invested in interest-bearing bonds \$568,618, bearing interest at about 7 per cent. She has erected one wing of her University, located at Austin, large enough to accommodate 500 or 600 students. Her chemical apparatus is valued at \$30,000. She will hold her lands as a permanent investment fund, and will be rented for grazing purposes, bringing now annually \$100,000, with a prospective value in a short time of \$10,000,000.

These facts are communicated by Hon. A. W. Terrell, a distinguished lawyer and State Senator of Texas. See appendix A to this Memorial.

Besides the University proper, the Agricultural College is located at Bryan, on a farm of 2,400 acres, with a large permanent land fund besides, and with a present income of \$40,000 or \$50,000 annually.

And so this last might be continued, and also with the remark, that besides the appropriations above referred to, in most instances an annual appropriation in some form is made for support and maintenance. And it must be again remembered that Missouri in point of population and wealth claims to be the fifth State in the Union, with great cities springing up, on her eastern and western borders, with 4,500 miles of railroads completed within her territory, and with every prospect in less than five years, that every county in the State will be accommodated with railroad facilities! With such a realization and with prospects ahead asbright as any other State in the Union, what is it, that her Legislature should not

do, to place her in the front rank of educational States? Superadded to these facts, and stimulated by what other States have done, we see private individuals of large means coming forward, and pouring out their wealth like water in the sacred cause of education; founding colleges and universities for the benefit of the people. Witness Cornell University of New York, with its \$7,000,000 of endowment, Johns Hopkins University of Baltimore, wearing the name of its founder with an endowment of \$700,000; Vanderbilt University in Tennessee; the proposed gift of \$1,-000,000 by Mr. Dupau, of Indiana, upon condition of uniting two colleges in that State; the numerous gifts by the Crows, the Bridges, and other public spirited men to Washington University, located in St. Louis, and destined to be one of the great literary, scientific, practical and professional institutions in the Mississippi Valley. Let the General Assembly display a corresponding liberality to her own University and thus follow the example of other States mentioned above; let the State become the custodian and trustee of all such funds granted or given to the State, thus insuring their safe investment, and with a guarantee that the interest on all such funds shall be forever dedicated to the purposes for which they were given.

This has been the wise policy which has been pursued in other States, and notably in Virginia, California, Michigan, Illinois, Pennsylvania, Mississippi, Texas, Wisconsin. Kansas and Iowa.

CONSIDERATIONS IN FAVOR OF THE PERMANENT ENDOWMENT OF THE UNIVERSITY, THE AGRICULTURAL COLLEGE, AND THE OTHER DEPARTMENTS OF THE INSTITUTION.

In his recent Message Gov. Crittenden has brought this subject to the notice of the General Assembly in a very lucid manner. At page 43 of his printed Message, he says:

"I am more and more convinced of the wisdom of placing the State University upon a more solid foundation by providing an ample and permanent endowment for it. This can readily be done by setting apart an interest bearing certificate of endowment.

In a former message I used the following language in reference to this subject: "The annual interest on the certificate could stand in lieu of the appropriations asked for at each meeting of the General Assembly. This policy would not increase the expenses of the State, while it would secure certainty and uniformity of income, upon which the authorities of the University and associate institutions could always depend." Indeed it is plain that such a course would be a saving to the State, for the certificate would predetermine the formulation of the University item in the biennial appropriation bills, and do away with the wasting of time and money in discussing the same subject over and over again, and avoiding the oft-recurring scene of president, professors and other gentlemen lobbying in favor of a meagre appropriation in behalf of the State University, and by anticipating in a definite business way the income available, it would be used more efficiently and profitably to the State. If asked to suggest the amount of the certificate to be added to the present endowment, I should say, not less than one million dollars, and that bearing 6 per cent. per annum interest. Certificates already issued by the State to the various school systems should have that uniform rate of interest. This certificate would not increase the debt nor the taxes of the State one dollar; would in fact be a part of its wealth and its honor, giving it strength at home and reputation abroad. Missouri is in the centre of an educational circle of states, which are rapidly assuming an advanced position on this bulwark of strength and greatness. Texas, Kansas, Iowa, Wisconsin and Illinois are challenging admiration in this "broad field of battle," and Missouri must gird up its loins for greater exertions, else it

will pass to the rear and no longer be a "hero in the strife." This should not be. Population and wealth follow progress and intelligence. There is strength in well directed liberality; there is weakness in inconsiderate parsimony. In the words of the wise man: "There is that scattereth, and yet increaseth; and there is that withholdeth more than is meet, but it tendeth to poverty." The University should be placed on as firm a basis, and rendered as independent as the common school system of the State. Endowments beget endowments, and largely endowed colleges ever receive the largest foreign as well as domestic patronage.

But there are other reasons besides those so aptly presented in the extract above quoted, in favor of a permanent endowment. It would place the institution at once upon a settled and permanent basis; it would relieve the General Assembly for all time of a vast amount of labor, and to this extent reduce the expense of legislation; and yet the State by its visiting committees of intelligent gentlemen, as well as through its Board of Curators would keep a vigilant eye upon the institution and upon all disbursements made by those officially connected with it.

It is idle to attempt to build up a first class University and Agricultural College with their various departments, without an annual income approximating or even going beyond \$100,000, as we have abundantly shown by reference to the institutions above.

By the act of the Legislature, approved February 24th, 1870, locating the Agricultural and Mechanical College at Columbia, in connection with the State University, the county of Boone and town of Columbia, were required to give as a bonus for the location, the sum of \$30,000 in cash, and 640 acres of land convenient to the present University grounds as the Agricultural College Farm. These conditions were promptly complied with, and at a cost to the county of \$90,000. The farm was promptly purchased, the title carefully examined and deeds of general warranty executed to the State for the property, and it is eminently proper, for the benefit of the younger and new members of the General Assembly to state the character of the farm thus donated.

The commissioners appointed to examine said farm and the title thereto, in the report to the General Assembly used the following explicit language:

"Having examined the said tract of land we found the same handsomely improved with valuable buildings, deversified with a variety of soil, well watered and timbered and admirably adapted for the uses and purposes of the Agricultural and Mechanical College; and we further say that in extent and character of this part of their donation, with the amount of money they have expended to secure it, Boone county has fully and honorably met every reasonable expectation, and satisfactorily complied with the obligations incurred to the State in the matter of the location of the Agricultural College."

It has now been 15 years since this donation was made, and there has never been a dollar appropriated by the State for the improvement of said farm in the way of fencing, shrubbing, removing stumps, building roads to make all parts accessible, for erecting necessary buildings for the uses of the farm, preservation of grain, and stock, for collecting an Agricultural Museum; a Farm or College Library for the benefit of the students attending the same; for carrying on extensive experiments intended for the good of the farming community of the State; for experiments in improving the various breeds of stock; and for conducting similar experiments in growing trees, the cultivation of fruits, large and small, the planting, pruning and trimming of vines, and all other investigations and experiments necessary to be understood and learned in the Horticultural and Botanical departments. Not a dollar has ever been appropriated by the State for any of these important objects. The result is that ample appropriations are now badly needed for

the above purposes as well as for the improvement of the campus, the erection of an iron rail fence around it in order to preserve the property of the State, and for the purpose of making the improvements above referred to, to make the Farm worthy of the institution, and of the great agricultural interests of the State it is intended to represent. Some one may say that the money arising from the sales of the lands donated by Congress might be appropriated for the above objects, but let it be said once for all, that under the law of Congress of July 2, 1862, it was expressly provided, and made a condition, "that no portion of said fund, nor the interest thereon, shall ever be applied directly or indirectly under any pretense whatever to the purchase, erection, preservation or repair of any building or buildings." We quote the very language of the law, and be it further remembered that this grant was accepted by the General Assembly of the State of Missouri with all the limitations and conditions therein contained, as will appear by the following resolution:

"Resolved, By the General Assembly of the State of Missouri, that the said act of Congress of the United States is assented to and accepted by the State of Missouri, with all the conditions, restrictions and limitations therein contained, and the faith of the State of Missouri is hereby pledged to the faithful performance of the trust hereby created."

The facts thus stated clearly demonstrate the policy of passing a law making a permanent endowment of the institution, and placing at the command of the Board of Curators ample means to meet the obligations assumed by the State in accepting this Congressional Land Grant.

But this is not all, the gentlemen composing the Senate and House of Representatives will not forget that the University of the State of Missouri, with all its departments, (except those purely professional) is substantially a free institution. Its doors are thrown wide open. Every son and daughter of the State is invited to enjoy all the advantages of the institution in acquiring a solid education, under the direction of an able corps of enlightened Professors; having free access to well selected libraries, literary societies, and interesting lectures by able men.

Twenty dollars a year covers the entire charge. Go to any of the older and more renowned institutions of the country and the annual tuition is from \$50 to \$150, for the same advantages enjoyed here, thus saving to the young men and women of the State \$60 each, allowing \$80 for the average and on the basis of an annual attendance of 500 students, there is thus a saving annually of \$30,000 to the young men and women of the State.

A steady income from a permanent endowment as recommended by the Governor, would enable an intelligent Board of Curators to provide in a few years a neat, substantial building, to be appropriated as a Woman's College Home, especially for those young ladies who might come here to be educated from different parts of the State, and the boarding clubs now provided would be greatly improved for the comfort of the young men who choose to occupy them, and especially those of small means.

A number of the Colleges and Universities of the different States have made the amplest provision for the accommodation of the youth, male and female. For instances—Cornell University, The Michigan Agricultural College, The California University, including its Agricultural College. Only a few years ago the Legislature of Wisconsin appropriated \$50,000 for the erection of a Woman's College Home, where young ladies are well provided for and enjoy all the advantages of a pleasant well-ordered home, whilst prosecuting their studies in the various departments of that fine institution. Why can not Missouri furnish like advantages to the sons and daughters of our farmers, mechanics, merchants and professional men? This is

a much older, more populous and wealthy State than Wisconsin. Why shall we not offer the same advantages that are enjoyed there?

Suppose a permanent certificate of endowment of \$1,000,000 is authorized by law to be set apart as above specified, is the State any poorer? Does not the money remain here? Is not the interest appropriated for those institutions that belong to it and are a part of the State? Is not this interest annually expended for the noblest of all objects, the improvement and elevation of the mind of the State? What at last constitutes the chief pride and glory of a free commonwealth? It is not its cultivated intellect, the broad intelligence of its population? Do not these constitute the brightest jewels in the treasury of your State?

But some one will say that 6 per cent. interest is to be annually paid upon this certificate of endowment. What does this amount to in a great State like Missouri with its \$720,000,000, according to the Auditor's Report, the increase of the wealth of the State having amounted to \$120,000,000 during the last two years, and by actual computation, according to the estimate as applied in the Auditor's office, the real wealth of the State amounting to at least \$1,200,000,000.

The Board of Curators claim to be an economical body. They are opposed to waste, and extravagance in every form, and they are sincerely of the opinion that the plan of endowment suggested by the Governor is in the line of the strictest economy, taking a series of years together.

Another matter worthy to be noted is, that the University, and its departments, being the only State institution of the kind contemplated by the Constitution and established in accordance with it, and intended indeed to furnish the largest advantages for literary, scientific and practical instruction, and with the great wealth of the State, the presumption is a fair one that advanced students, graduates of other institutions, or persons of any age desiring to prosecute their studies further will have larger and better opportunities in the University than elsewhere. This is not in any sense underrating the great value of other educational institutions, private and denominational; for this Board fully recognizes the necessity of their existence in carrying forward the scheme of Universal Calture, at which we, as a free people, aim. The leading idea of this Board has been, and is, the most friendly co-operation on the part of the State University and every other educational agency of whatever kind. They are all aiming at the same noble end-the higher culture of all the youth of the State upon whom the responsibilities of government must in a short time rest. Taking this view of the subject, more than ten years ago the Curators passed a resolution inviting all graduates of other colleges in this State, authorized to confer degrees and grant diplomas, to enter all the departments of the University including the Mining School 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. The same privilege is granted to young ministers of every denomination who may choose to avail themselves of the advantages of further culture, except in the departments purely professional. (See Appendix, letter B.)

# SALE OF UNIVERSITY LANDS IN 1831.

The resolution passed by the Board, requiring this Memorial, provided that such facts and considerations bearing upon the question under discussion should be stated; and in this connection the Board deem it their duty to refer to a matter which it seems to the members thereof should be fairly considered by the General Assembly.

It is known to your Honorable Bodies that the University of the State of Missouri, and all similar State institutions in other western States, are founded upon grants of land made by the Congress of the United States, in trust, for their permanent endowment and maintenance. Under this general and wise policy there was granted to Missouri two townships of land for the support of a seminary of learning, containing 46,080 acres. Of these 33,000 acres were located in Jackson county, as will be seen in the Auditor's report made to the 32d General Assembly on pp. 33 and and 34. The title to these lands vested in the State of Missouri; they were granted for a specific purpose. The State was made the Trustee for the faithful management of these lands. They were improvidently sold under an act of the Legislature on the 14th day of December, 1831, and whereby the institution, not yet in being, sustained a great loss. These lands in Jackson county, as fine as any in the State, equal to any in the Missouri Valley, only brought at the sale a little more than sixty thousand dollars.

The sale itself, speaking in the mildest terms, was an unfair one. A league of men formed for the purpose, interfered at said sale and prevented persons from a distance who were there for the purpose of buying these lands, even from bidding on them.

Mr. Garland Webb and his brother, Dr. Webb, of Kentucky, men of means, at the commencement of the sale, bid for a tract of land, when they were immediately seized by a body of men and forcibly carried off and imprisoned and so detained for several days, until the sale was finished. This violent interference, and the threats made against all persons not members of the league, and residing at a distance, intimidated other bidders, and the whole pretended sale, in the language of General A. W. Doniphan was a "burlesque and a fraud." The Hon. John F. Ryland, for many years Circuit Judge of Jackson county, and subsequently an able Judge of the Jupreme Court of this State, a short time prior to his death made the same statement to the author of this Memorial as to the violence and threats preventing persons bidding at the above mentioned sale. He regarded the sale as an infamous fraud. Mr. Garland Webb instituted suit against ninety or one hundred of these The lawyers employed in the case were Judge Wm. trespassers upon his rights. T. Wood and Judge Russell Hicks, both of them able lawyers and each having served with distinction upon the Circuit Court bench in the western part of the State. Judge Hicks is dead, but Judge Wood lives still at Lexington, Mo., greatly honored and respected for his high character for intelligence and integrity by all who know him. In the suit instituted by himself and Judge Hicks against these trespassers the following is a copy of the first count in the declaration:

"The defendants on the 14th day of December, 1831, made an assault on the plaintiff (Garland Webb) and seized and laid hold of the plaintiff and with great force and violence, threw him upon the ground, and pulled, hauled and dragged him about, and forced and compelled the plaintiff to go from the public street, into a certain dwelling house and imprisoned said plaintiff and kept and detained him in prison without reasonable or probable cause for a long period of time, to wit, forty-eight hours."

In the appendix to this Memorial, letter C, will be found a letter from Judge Wood, dated Lexington, Mo., Dec. 17, 1884, and addressed to Hon. James S. Rollins and Dr. S. S. Laws, in which he states his recollection of the facts as communicated to him by credible and respectable witnesses present at this pretended sale of lands. In the appendix will also be found a letter marked D, dated Richmond, Mo., January 5, 1885, from Gen. A. W. Doniphan, the eminent lawyer, statesman and soldier, who was engaged by the defendants in the suits instituted against them, addressed to Hon. James S. Rollins, in which he corroborates substantially the statements made by Judge Wood, and in which letter he states as follows:

"It is not necessary to give any opinion as to the manner in which this munificent gift of the General Government was disposed of. It was simply a burlesque, and a fraud. I have always thought," he continues, "that the State should aid in a liberal manner to fulfill the purposes of the General Government in making the donation."

(See his entire letter in appendix, letter D.)

In these suits the plaintiffs having failed to obtain a change of venue from Jackson county, where there was no possibility of obtaining a fair trial, they were accordingly dismissed, and thus the matter ended. It will be remembered that these lands were held by the State of Missouri, in trust, for the benefit of a prospective Institution of Learning. The trust was not carried out in good faith; the lands were prematurely and improvidently sold at an insufficient price, and thus the University was deprived of a large endowment fund. At that early day there was no one to interfere in behalf of the institution; there was no Board of Trustees, or Curators authorized to intercede; the University was not incorporated until nine years after, when it was too late to recover the losses it had sustained.

The Constitution of Missouri in 1820, chapter 2, section 2, provides "that the General Assembly shall take measures for the improvement of such lands as have been or may hereafter be granted by the United States to this State, for a Seminary (or University) of Learning." This was not done, but as stated above these lands in Jackson county were sacrificed. We venture the opinion that if these lands had been held in trust for ten years and until after the incorporation of the University by legislative act, and then sold, they would have commanded at least from \$10 to \$20 per acre, for they were the richest lands in the State, and were judiciously located in one of her finest counties, now only second in wealth and population.

Many of them were located in and adjoining Kansas City, destined in the future to be the great city of the Missouri valley. Many of them were located around Independence, the county seat of Jackson county, one of the most beautiful and thriving inland towns in the Western country, and some of them were located about Westport, another fine village on the western border of the State. Indeed a part of Kansas City and of Independence is located on a part of these lands. These facts are not exaggerated, and in order to give every one who may read this Memorial a clear conception of the location of these lands a small map has been lithographed, marked E, and will be found in the appendix with the University lands colored, and which will show their relation to the Missouri river and the towns and cities above mentioned.

These lands which were sacrificed are placed upon the assessment roll to-day at a valuation of \$3,000,000, and as every man knows, that landed property in the State is not assessed at more than two-thirds of its actual value, they are worth at this time \$4,500,000.

What then are the legitimate and fair conclusions from the above facts? They are that the State, being the trustee, and having sold these lands prematurely and improvidently, should make up to some extent the great loss which the Institution to which they belonged has sustained. There is no legal remedy. The State in this matter is the sovereign. She can do as she pleases; and let it be further understood that there is no disposition on the part of the Board of Curators, even were it in their power, to disturb vested rights, which have become settled, and fixed, but governed by a sense of duty, with these facts coming to their knowledge at a late period, they do appeal to the high sense of honor and that deep sense of moral obligation, which abides in the bosoms of the representatives of every State to do that which is honorable, fair and just to this Institution, which is the fair daughter of the State, belonging to the State, imparting social culture, refinement and solid

practical education to every son and daughter who may choose "without money and without price," to enjoy the great advantages offered within its classic halls.

Who, we ask, has profited by the enhanced value of these lands? The State, of course. She is collecting her annual revenues from property valued at \$3,000,000, which only realized when sold a little more than \$60,000. Following the recommendation of Gov. Crittenden, the Curators ask that a certificate of endowment of not less than \$1,000,000, bearing six per cent. interest, payable semi-annually, for the support of the University, the Agricultural and Mechanical College, and all other Departments of the Institution. Let this certificate after two years stand in lieu of the biennial appropriations which have been, and will continue to be asked for. Certainly Missouri will be no poorer on account of this act of beneficence. It would be the best investment the State could make. It would strengthen the characterof the State at home, and would be to her a crown of honor and respectability amongst her sister States. It would be a full answer to all misrepresentations made in regard to our State. It would be a pleasing invitation to the intelligent, enterprising citizens of other States, North and South, to come and abide with us, and enjoy the advantages and blessings which a kind Providence has showered upon us, as the great Central State of the Mississippi Valley, and the American Union.

WHAT THE STATE HAS DONE FOR OTHER PUBLIC INSTITUTIONS UNDER HER CONTROL.

The State has not been remiss in making appropriations for other Public Institutions under her control and management. In looking over the Auditor's Report we observe that since the establishment of the Penitentiary there has been expended for the benefit of this institution no less than \$2,381,052.72; and for taking care of the insane of the State in the two Asylums established for the purpose there has been expended \$2,071,273.21, and for the Deaf and Dumb Asylum at Fulton, governed by the State, there has been expended \$1,044,901.37; and for the Missouri School for the Blind at St. Louis there has been expended \$661,592.51, And we also find that the whole amount of appropriations made to the State University by the State from Oct. 1, 1841 to Dec. 31, 1882, a period of more than forty years, has been \$534,393, which includes the \$100,000 appropriated by the last General Assembly for enlarging the old University Edifice.

Whilst it is not intended to criticise in an unfriendly way, or to disparage the action of the State in making liberal appropriations for the maintenance of an institution established for the punishment of vice and crime, or for taking care of those upon whom the hand of affliction has fallen; the insane, the deaf and dumb, and the blind, those who must forever be a heavy burden, and a charge upon the body politic, it may well be asked, why the same care and maintenance should not be extended to that other and older institution belonging to the State, established for the purpose of fostering and developing the intellect of the rising generation and giving the best advantages of culture, education and refinement to all her sons and daughters? Is not the University better calculated to give character and dignity to the commonwealth than the Penitentiary? And is not the duty as imperative upon the State to expend a portion of her revenues in the education and development of those upon whom in the future must rest all the responsibilities of society and government?

It occurs to this Board that it is not asking too much of the State to make at least equal appropriations for the benefit of the oldest institution in the State, constituting a part of the State itself, recognized in the Constitution from the founda-

tion of the State Government; with a continuous pledge running through her whole history to aid and maintain it with its various departments; an institution established for the benefit of every class of its citizens, the farmer, the mechanic, the miner, the engineer, the chemist, the purely literary and scientific man, the teacher of youth, male and female, the author, the orator, the statesman, the physician, the lawyer, the divine; an institution founded to lift society up and not calculated to drag it down, to give character, strength, intelligence and happiness to all the people of the State, certainly is entitled to as much consideration, and to receive as ample support as any other institution that could be founded. It is not to be presumed for a moment that this Board or any member of it stands in opposition to appropriations to other and kindred institutions. On the contrary, they acknowledge that they should be provided for to the fullest extent, but for the sake of society and good government, we should also provide for the full and perfect development of those who have mind and intellect to be cultivated and improved. This Board adopts the admirable axiom contained in Gov. Crittenden's Inaugural Address, "That parsimony to education is liberality to crime, and that there is no cheaper defense to a free commonwealth than the highest education of the masses of the people."

It is proper to state, and important that the members of the General Assembly should know the fact, that in 1839, when the University of Missouri was located, the people of Boone county subscribed in land and money, the sum of \$117,900 to obtain it, and every dollar of this sum was paid in erecting and outfitting the necessary buildings now belonging to the State.

This Board regards it, that to take care of the unfortunate children of the State, which has been done, as a wise and humane policy; one that cannot be disregarded, and only discharging a duty imposed upon us by the laws of our common humani-This Board trusts that this policy may be continued, thus adding to the good character and respectability of the commonwealth; and being the custodians of a kindred Institution belonging to the State, and with imperative constitutional obligations resting upon the State to maintain it, they cannot understand why the same liberal enlightened policy should not prevail in regard to the State University which has been followed in regard to the other eleemosynary and penal institutions. The University was located in 1839; the people of the county have subscribed, including individual gifts, a sum equal to \$250,000, every dollar of which has been paid. The number of students attending the institution to date is 12,093, and the entire appropriation to maintain it and all its departments at Columbia, down to the present time, a period of forty-five years, made by the State, amounts only to \$534,-393.82, an average of about \$45 advanced by the State to each of the students who have enjoyed the advantages offered by the institution, and of this large number there have been 1,231 graduates who are to be found all over the State, and the West, filling positions of honor, and so far as this Board is advised, enjoying the confidence of their respective communities as honorable, enterprising and respectable citizens, thus adding to the moral and intellectual wealth of the States where they reside.

In this memorial we have endeavored to show that it is a matter of economy on the part of the General Assembly to pass a law authorizing at once a Certificate of Endowment for \$1,000,000, bearing six per cent. interest, payable semi-annually, in lieu of the appropriations which will otherwise continue to be asked for after the expiration of every two years. Let it be particularly noted that this would not take a dollar out of the State Treasury nor would it be a loan to the State from outside parties resulting in a debt as contemplated by the Constitution, but only, as in

the case of the school and seminary fund certificates, the mere establishment of a fixed rule for the annual division and distribution by the State of her own moneys for the regular support of one of the established institutions of the State. Indeed. this would be a wise policy in regard to all the State institutions. Certainly when the above facts are fairly considered and when we all consider the liberal policies being pursued in the States all around us, this cannot in any sense be regarded as an extravagant appropriation. The \$60,000 of interest paid upon the certificate, together with the income from tuition fees, and interest on investments already made, would not bring the University and its Bepartments, including the School of Mines and Metallurgy at Rolla, to anything near equal to the annual income of many of the institutions referred to above, most of them founded and located many years after our own; some of them twenty or thirty years later. The only argument that can be urged against the policy contended for in this memorial would be the cost of the interest upon the certificate amounting to \$60,000 per annum, and let us for a moment see what this would be. The population of Missouri is 2,500,000, and to raise the \$60,000 the heavy tax of two and two-fifths cents must be imposed on each; but let us try it by another rule; suppose we confine the payment of this tax to the voters of the State, now 450,000, and what would each have to pay? By careful computation the enormous sum of thirteen and one-third cents each, annually. Is there a freeman in Missouri who would object to this? We The passage of such a law would do more to elevate Missouri in the eye of the country, and we may say in the estimation of the civilized world, than any law that can be passed. It would, in fact, signalize the State, and add greatly to her respectability both at home and abroad.

The fact may not be generally known to the members of the General Assembly that every body of intelligent citizens who have visited the University have commended it to the fostering care and liberality of the people. Only a few years ago the entire Press Association of the State met in this place and passed unanimously the following most liberal resolution, urging upon the Legislature the generous support of the Institution and its various departments:

Resolved, By the Missouri Press Association, now assembled in Columbia, that we have been most favorably impressed with the advancement made here in pressing forward our educational interests; commending as we do, any institution in the State devoted to the sacred cause of education, whether public, private or denominational, we only discharge a duty devolving upon us in expressing the just pride which we feel in sustaining the University of the State of Missouri, at this time in a most prosperous condition; and we commend it most cordially to the liberal patronage of the people of all the counties of the State, and urge upon the General Assembly the necessity of providing for a larger endowment of the Institution and all its departments, blending it more intimately with the common schools of the State, and all other institutions forming a part of our State system of education under the constitution and laws, in order that the sons and daughters of Missouri may enjoy, at least, equal advantages of practical education and enlarged liberal culture of those enjoyed by the youth of any other State in the Union.

And only a few weeks since the Teachers Association of Northeast Missouri met in the University Chapel, representing one-fourth of the teachers of the State, and expressing the sentiments of all the teachers of the State, and passed the following resolution:

#### STATE UNIVERSITY ENDOWMENT.

Resolved, That the N. E. Mo. Teachers' Association in session at the State University would express a high appreciation of the valuable modifications and improvements of the main University building and a hope that the support of the University should be such as to enable its authorities to conduct with steady and growing strength the work in hand in such a way as to come into favorable comparison with the creditable universities of our country, and these universities count

their property by millions and their income by hundreds of thousands, and we would urgently commend the University to the General Assembly of the State for a permanent and liberal endowment as its great success is the best guarantee of the corresponding success of all the public and private schools and colleges of our State.

2. That the Secretary furnish the Board of Curators of the University a copy of this resolution with the request that they cause the same to be presented to the Senate and House of Representatives of the next General Assembly.

Again, the following resolution was unanimously adopted by the Missouri Association of County Surveyors and Civil Engineers, in convention assembled, at their regular annual meeting. June 5th, 1884.

Resolved. That it is with pleasure and pride that we recognize the fact that this University is being established upon a broader and firmer basis than ever before, and is fast coming up to the full idea of an American University. Her every department now bristles with life and living Science. She now furnishes, through her Academic department and associated Professional schools, the kinds of education which correspond at once to the spirit of our Republic, and the wants of the people at large, and therefore it is the sense of this Association, that it is the duty, and should be the pleasure, of the State to extend such aid and encouragement to this her University as may render it at least the equal, in any and all respects, to the best universities of any of the sister States, till she becomes to this great Empire State of the Mississippi Valley, what Ann Arbor is to Michigan, or Virginia University to the old Dominion.

The Missouri Association of County Surveyors and Civil Engineers, are entitled by action of the Board of Curators to all the privileges of the University without fee or charge.

(See further appendix F, as to what the most illustrious men of the republic have said in regard to the importance of the better education of the masses of the people.)

The Board of Curators, serving without compensation, being the guardians of the University, having no greater interest in it than the same number of gentlemen, members of the General Assembly, familiar as they are with the history and wants of the institution, and realizing keenly that it is the bounden constitutional duty of the Legislature to strengthen it by liberal appropriations, which they have been for years impressing upon the Senate and House of Representatives, again come before you, and for the sake of the educational cause of the State, and in behalf of the more than 500 young men and women, now students in the various departments of the University, representing eighty or ninety counties of the State, as well as the thousands of youth, looking with earnest anxiety when they will be able to enjoy the advantages and privileges of a great institution of learning, founded and supported by the State, the common mother of us all, thus preparing them for all the duties of intelligent citizenship.

This Memorial is extended beyond the usual length. The Curators feel that all questions calculated to produce irritation and violent conflict of feeling between the different sections of the country having been settled; now that sentiments of fraternal good feeling and harmony are prevailing in the land; now that the continent is traversed by four great national railways thus at last uniting the two oceans, changing the currents of commerce and by which there has been reclaimed a vast territory hitherto inhabited by the coyote, the buffalo and the Indian, and which is now being rapidly subdued, and brought into practical use by the arts of civilization, affording quiet, peaceful homes to the hardy pioneers of our own and other lands, where they may "worship God under their own vine and fig tree;" in this land of universal freedom, this Board feels that our great country is approaching an era of physical, moral, social and mental development, hitherto unknown amongst the nations of earth, and that in this honorable contest for primacy they have some pride that Missouri shall not be second in the race.

Let her then foster those institutions best calculated to bring her to the front; among these let her University, standing at the head of our admirable public school system, the oldest institution in the State, founded by those who laid the foundations of civil society and government upon the west bank of the father of waters, be liberally provided for in order to attain these great ends.

The two wings now being added to the old edifice are approaching completion, and are admirably adapted to their uses, and which will afford comfortable accommodation to 1,000 or 1,200 students. Following these enlargements, the excellent library will be improved, and all departments furnished with better facilities for the able professors to impart knowledge and accurate scholarship to the youth who may seek a finished education here; whilst the campus, beautified and made sacred by the statue of Washington, and the original granite monument that rested, for more than half a century over the remains of Thomas Jefferson, "author of the Declaration of American Independence, the Statute of Virginia for Religious freedom, and Father of the University of Virginia," will be a constant inspiration to them and all who will come after them, and also an incentive to the discharge of every duty and the cultivation of sentiments of the most exalted patriotism.

All of which is respectfully submitted,

JAMES S. ROLLINS.

President of the Board of Curators.

Attest: R. L. Todd, Secretary. Columbia, January 20, 1885.

# APPENDIX.

"A."

Austin, Texas, Dec. 7th, 1884.

HON. JAS. S. ROLLINS, Columbia, Mo.

 $M_{Y}$  Dear Sir:—I hasten to acknowledge and answer yours of the 1st, which came during my absence from home.

No part of the permanent University fund can be used, either for improvements or current expenses. The interest on money and bonds, and the rent of land constitutes the available University fund on which the institution is sustained.

Aside from the above property may be mentioned the University building, one wing of which is now completed, and sufficient for 500 or 600 students, and chemical apparatus worth \$30,000. The time must be near at hand when these lands will be worth \$5.00 per acre, which will equal \$10,000,000. They can be rented for grazing purposes at five cents per acre which will yield an annual income of \$100,000 for the support of the University.

I remain very truly your friend,

A. W. TERRELL.

"B."

[Extracts from a letter from the Hon. Wm. T. Wood, in relation to the sale of Seminary lands in Jackson county, Mo., Dec. 14th, 1831.]

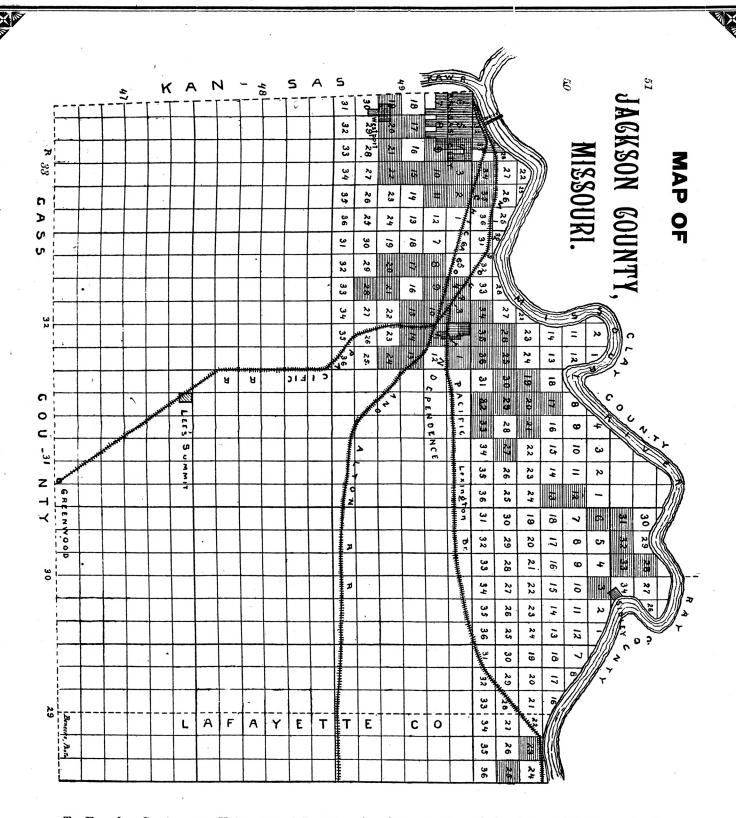
LEXINGTON, Mo., Dec. 7, 1884.

HON. JAS. S. ROLLINS and DR. S. S. LAWS:

 $\label{Gentlemen} \textbf{Gentlemen-Your letters of the 11th inst. both inclosed in the same envelope, were received by \\ \textbf{due course of mail.}$ 

I have seen the twig grow up, to become the tall and towering oak, and I have seen the village, even long since, beginning with a few wretched huts become the magnificent city, yet I can say I can look back and from memory, and memory refreshed furnish facts on which you may with full confidence rely.

I will first speak of the sale of Seminary or University lands in Jackson county, about 33,000 acres. This was a sale at public auction held on the 14th of December, 1831, and some days follow-ing that day.



To Found a Seminary or University of Learning for the promotion of the Arts and Sciences, the Congress of the United States, on the Admission of Missouri into the Union, granted to the State two Townships of Land containing 46,080 acres.

Of these, 33,000 acres were located in Jackson Co., Mo., as shown by the Shaded Sections on this Map.

These Lands were improvidently sold under an act of the General Assembly on December 14th, 1831; the whole sum realized from said sale amounting to a little upwards of \$60,000.

At said sale there was great interference, persons from abroad and outsiders, being seized and imprisioned and thus prevented from bidding, and by threats and intimidation, the lands were literally sacrificed.

These same lands are now assessed at \$3,000,000 by the Assessor of Jackson Co., and are readily worth \$4,500,000.

The minimum price was \$2.00 per acre, no bid being received for less than that price. On the morning of the first day of the sale Garland Webb, a citizen of Kentucky, attended the sale. He was reported and believed to have with him a large amount of money for that time, which he intended to invest in lands at that sale. For some small tract among the first offered for sale, he was a hidder, and being the highest and best bidder purchased the tract. He was soon a bidder for another tract, when on making his bid he was assaulted, and seized and by force and violence taken from the place of sale, by persons who were parties to the mob, forced and carried to the hotel and there confined in a room for a day or two, and until he promised to make no other or further bid; in the meantime the sale progressed and continued. I was not present at the sale and cannot state the facts from personal knowledge. I then resided in Liberty, Clay county, distant from Independence 10 or 12 miles. A number of the citizens of Liberty and Clay county attended the sale, and some of them, I then knew intended bidding for land, and from these, and other reliable sources, I have learned the facts stated. Facts notorious, and then undisputed. I have no recollection that citizens from Clay, or others not squatters on, or claimants of the land sold, made a purch se or even a bid, and the reason they did not bid or purchase, as then stated and believed generally, was that there was danger of the same treatment to them as received by Webb.

I suppose the facts of this sale were more strongly impressed on my memory from the circumstance that immediately after the sale, I was with Judge Russell Hicks, retained by Webb, to bring and prosecute suits against a large number concerned in the outrage on him. The declaration in the suit was filed January 26, 1832, and the summons made returnable to the February, the first term of the court after the sale, but Webb and Hicks made some settlement or compromise with the parties (as I remember) and the suit was never tried. I here copy from the declaration the facts stated in the first count, and which no doubt are substantially the real facts, to wit:

"That defendants, on the 14th day of December, 183t, made an assault on plaintiff, and seized and laid hold of the plaintiff, and with great force and violence threw him u on the ground, and pulled, hand d and dragged him about, and forcet and compelled the plaintiff to go from the public streets into a certain dwelling house, and imprisoned said plaintiff, and kept, and detained him in prison without any reasonable and probable cause, for a long period of time, to wit: for forty-eight hours."

Col. Doniphan was in the defense of this suit, and I have no doubt will remember the facts of the sale and suit better than I do.

In further reply to your letters, I ought to state, that regarding the State of Missouri, as a trustee in charge of this land, and bound for such care as a trustee should give, and exercise, squatters should have been kept off the lands; this was not done, on the contrary, they were rather encouraged to so on the lands.

I know there was with the people much complaint of the sale, and objection to its confirmation, and the issue of titles under it, and it was said these complaints and objections would be made to the Governor. I have never doubted but that he and other State officials were fully informed of the facts, if not formally, otherwise reliably. Of the facts connected with the sale of the two sections of College lands in Lafayette county, I have neither knowledge nor reliable information. I knew much of this University 1 and in Jackson county. I will not attempt a description of it, but will only say I have never seen lands to surpass it.

Some of it is in the city of Independence and much in the near vicinity of that place, some in Kansas City, and some, it is said, in Westport. I leave others better acquainted to tell of its present value.

I am, very truly yours,
WM. T. WOOD.

"C."

RICHMOND, Mo.. January 5th, 1885.

HON. J. S. ROLLINS, Columbia, Mo.

DEAR SIR:—The great delay in answering your enquiries has not been caused by ordinary negligence or want of sympathy in your efforts for the just and proper endowment of the University. But my health is not good. The extreme and sudden changes in the temperature have rendered my breathing tubes exceedingly delicate and often painful. The statements of Judge Wood are doubtless correct. He is incapable of wilfully making any misstatement; and as he was an attorney for the plaintiffs and employed at the time of the outrage, he would know more of the extent of the

trespass and violence, than I would learn from the defendants, whose province it was to deny everything and require proof. I located in Lexington, Mo., on the 19th of April, 183), and remained until the 1st of May, 1833, when I removed to Liberty. So I was residing in Lexington at the date of the sales, Dec. 14th, 1831. This was forty miles from Independence, and Liberty twelve, so Judge Wood was placed more directly in contact with these events and the actors in them, than myself. At the spring term of the Jackson circuit court the defendants employed me to make such defence as I test could. The facts were substantially these: The persons who had located on these lands (squatters) and a rejectity of the citizens of the county had formed a league as they terme t it, to prevent speculators, non-residents of that county, from bidding for or purchasing any portion of the two townships, or such portion of them as was in that county—then designated in common parlance as Semi nary lands. Soon after the auction commenced, Garland Webb of Scott county, Ky., made a bid and was at once forcil ly seized, as also his brother, Dr. Webb, also of Scott county, Ky., and were placed under a strong guard in a room at the hotel, and detained there until the sales were terminated-probably hree or four days. I was then bearding at Green's hotel in Lexington, the only hotel in the place, and rem mber to have seen quite a number of persons from other States, and some from the older counties of this State, who professed to be enroute for the land sales with the intention of purchasing. Do not know if any persons but c tizens of Jackson were permitted to purchase any land. The entire body or the entire amount that had been selected in that county, sold very low, as they were as good lands as any in the State. I think the average was about two dollars per acre. It is not necessary to give any opinion as to the manner in which this munificent bequest of the general government was disposed of. It was simply a burlesque and a fraud. I have always thought the State should aid in a liberal manner to fulfill the purposes of the general g vernment in making the donation.

This is a brief statement of what I remen ber to have transpired more than a half century ago. It is a matter of no importance as to the disposition of the case of the Webbs against about ninety citizens of the county. There were no compromises, however, (as I now recollect) the most important matter in these cases was the construction of the law then in force regarding changes of venue in civil cases. After a long, if not able discussion of that point, Judge Ryland refused the plaintiff a change to another county, and they could have no hearing before a jury of Jackson county, and altimately dismissed the cases. This is my recollection.

I sincerely hope this winter is dealing kindly with you.

Your friend,

A. W. DONIPHAN

"D."

# UNIVERSITY OF THE STATE OF MISSOURI.-POST GRADUATES FREE.

At the June meeting, 1874, of the Board of Curators of the State University, Mr. Rollins offered the following preamble and resolutions, which, after discussion, were unanimously adopt d:

In order to extend the advantages and usefulness of the State University still further to the youth of the State:

Resolved, That hereafter, all regular graduates in any department of the University, a devery 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 studies 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 su h terms, and under such rules as may be prescribed by the Executive Committe.

Resolved, That the Secretary of this Board forward a copy of the foregoing resolution to each of the institutions therein named.

Knowledge is in every country the surest basis of public happiness. In one in which the measures of government receive their impressions so immediately from the sense of the community as in ours, it is proportionably essential. To the security of a free constitution it contributes in various ways; by convincing those who are intrusted with the administration that every valuable end of government is best answered by the enlightened confidence of the people, and by teaching the people themselves to know and value their own rights; to discern and provide against invasions of them; to distinguish between oppression and the necessary exercise of lawful authority, between burdens preceding from a disregard to their convenience and those resulting from the inevitable exigencies of society; to discriminate the spirit of liberty from that of licentiousness, cherishing the first, avoiding the last, and uniting a speedy but temperate vigilance against encroachments with an inviolable respect to the laws.—Washington, First inaugural address.

The wisdom and generosity of the legislature in making liberal appropriations in money for the benefit of schools, academies and colleges is an equal honor to them and their constituents, a proof of their veneration for letters and science, and a portent of great and lasting good to North and South America and to the world. Great is truth, great is liberty, great is humanity, and they must and will prevail.—John Adams.

A system of general instruction which shall reach every description of our citizens, from the richest to the poorest, as it was the earliest, so will it be the latest, of all the public concerns in which I shall permit myself to take an interest.—Jefferson.

If a nation expects to be ignorant and free, in a state of civilization, it expects what never was and never will be. The functionaries of every government have propensities to command at will the liberty and property of their constituents. There is no safe deposit for these but with the people themselves; nor can they be safe with them without information. Where the press is free and every man able to read. all is safe.—Jefferson.

A popular government without popular information or the means of acquiring it is but a prologue to a farce or tragedy, or, perhaps, both. Knowledge will ever govern ignorance, and a people who mean to be their own governors must arm themselves with the power which knowledge gives.

Learned institutions ought to be the favorite objects with every free people; they throw that light over the public mind which is the best security against crafty and dangerous encroachments on the public liberty. They multiply the educated individuals from among whom the people may elect a due portion of their public agents of every description, more especially of those who are to frame the laws, by the perspicuity, the consistency, and the stability, as well as by the justice and equal spirit of which, the great social purposes are to be at swered.—Madison.

Let us, by all wise and constitutional means, promote intelligence among the people as the best means of preserving our liberties.—MONROR.

There is but one method of preventing crime and of rendering a republican form of government durable, and that is by disseminating the seeds of virtue and knowledge through every part of the State by means of education; and this can be done effectually only by the interference and with the aid of the legislature. I am so deeply impressed with this opinion that were this the last evening of my life my parting advice to the guardians of the liberty of my country would be Establish and support public schools in every part of the State.—Dr. Rush.

I cannot be more perfectly convinced than I am that virtue and intelligence are the basis of our independence and the conservative principles of national and individual happiness.—Chief Justice Marshall.

The parent who sends his son into the world uneducated defrauds the community of a useful citizen and bequeatly to it a nuisance.—Chancellor Kent.

Open the door of the school-house and university to all the youth of the land. Let no man have the excuse of poverty for not educating his own offspring. Place the means of education within his reach; and if they remain in ignorance, be it his own reproach. If one object of the expenditure of your revenue be protection against crime, you could not desire a better or cheaper means of obtaining it. Other nations spend their money in providing means for its detection and punishment, but it is for the principles of our government to provide for its never occurring. The one acts by coercion, the other by prevention. On the diffusion of education among the people rests the preservation and perpetuation of our free institutions.—Daniel Webster.

' The first duty of government, and the surest evidence of good government, is the encouragement of education. A general diffusion of knowlege is the precursor and protector of republican

intitutions, and in it we must confide as the conservative power that will watch over our liberties and guard them against traud, intrigue, corruption and violence. I consider the system of our common schools as the palladium of our freedom; for no reasonable apprehension can be entertained of its subversion as long as the great body of the people are enlightened by education. To increase the funds, to extend the benefits, and to remedy the defects of this excellent system is worthy of your most deliberate attention. I cannot recommend in terms too strong and impressive as munificent appropriations as the facilities of the State will authorize for all establishments connected with the interests of education, the exaltation of literature and science, and the improvement of the human mind.—DEWITT CLINTON.

If I had an archangel's trump, the blast of which could startle the living of all the world, I would snatch it at this moment and sound it in the ears of all the people of the debtor States and of the States which have a solitary poor, unwashed, and uncombed child untaught at a free school, "Tax Yourselves."

For what?

First. To pay your public State debt.

Second. To educa'e your children, every one of them, at common primary schools at State charge.—Henry A. Wise, of Virginia.

It is your duty and your highest interest to provide and to maintain within the reach of every child the means of such an education as will qualify him to discharge the duties of a citizen of the Republic.—BISHOP DOANE, of New-Jersey.

There is a positive antagonism between the possession of civil power requiring the highest exercise of reason and the want of that intelligence and integrity which are essential to the right use or reason itself.—E. D. Mansfield, LL. D.

Knowledge carries with it influence over the minds of others, and this influence is power; in free government, what is of more vital concern, it is political power.—General John A. Dix.

The object of the common school system of Massachusetts was to give to every child in the commonwealth a free, straight, solid pathway, by which he could walk directly up from the ignorance of an infant to a knowledge of the primary duties of a man, and could acquire a power and an invincible will to discharge them.—Horace Mann.



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