

REPORT

TO HIS EXCELLENCY, THE GOVERNOR.

THE THIRTY-NINTH

MISSOURI UNIVERSITY  
CATALOGUE.

1880-1881.

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FOUNDED, 1820---ORGANIZED, 1840.

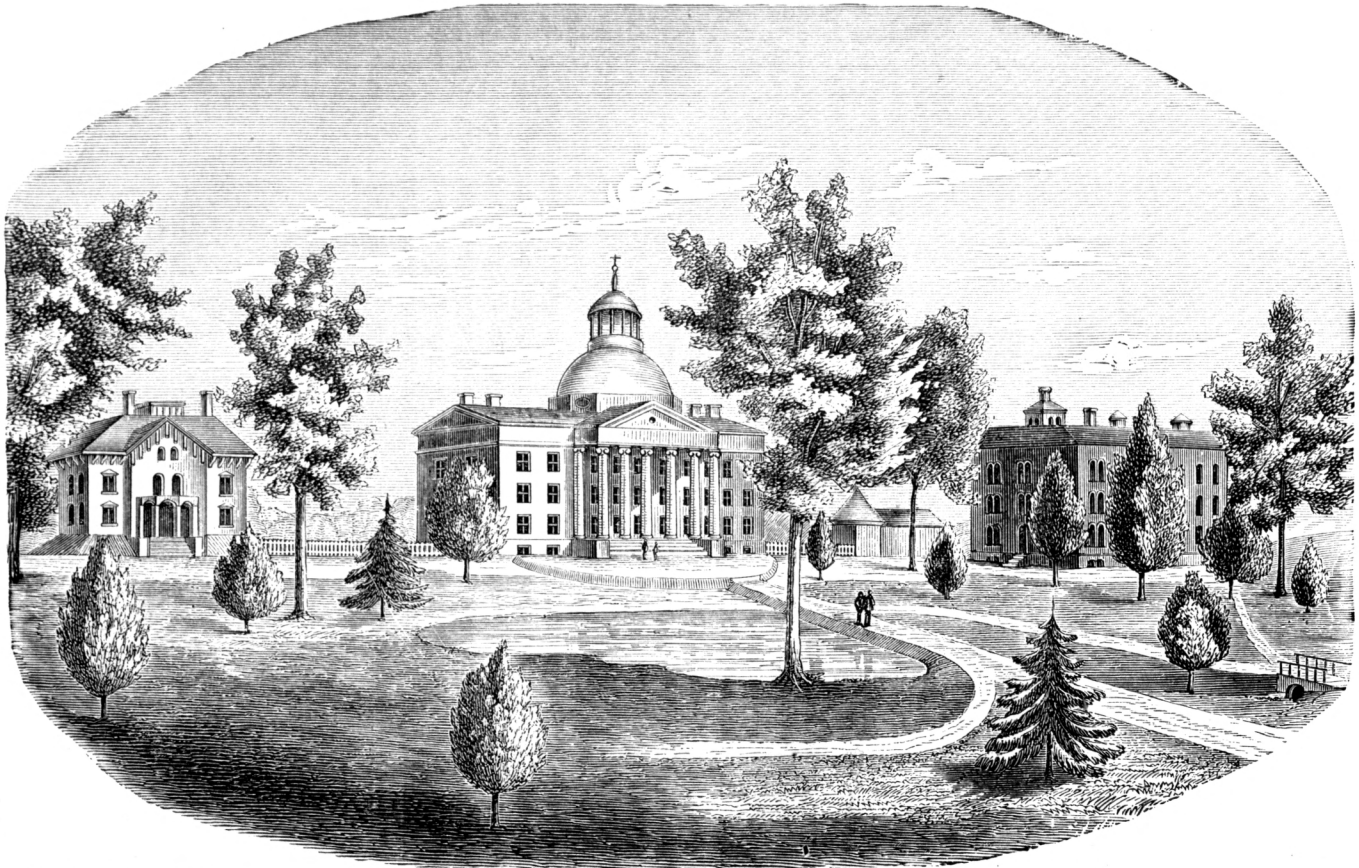




With the respects of

G. C. SWALLOW.

PLATE I.



2. PRESIDENT'S DWELLING.

1. MAIN BUILDING.

4. OBSERVATORY.

3. SCIENCE HALL.

## PLATE I.

1. *The main edifice*, which faces north and is somewhat cruciform; nave E. and W. 157xtransept (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 and Medical 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 (53x34) over the cabinet with northern, western and southern exposure and skylights.

4. *The Observatory*—see plate 2—has been moved to the northeastern part of the Campus, and has been remodeled.

PLATE II. THE NEW OBSERVATORY.

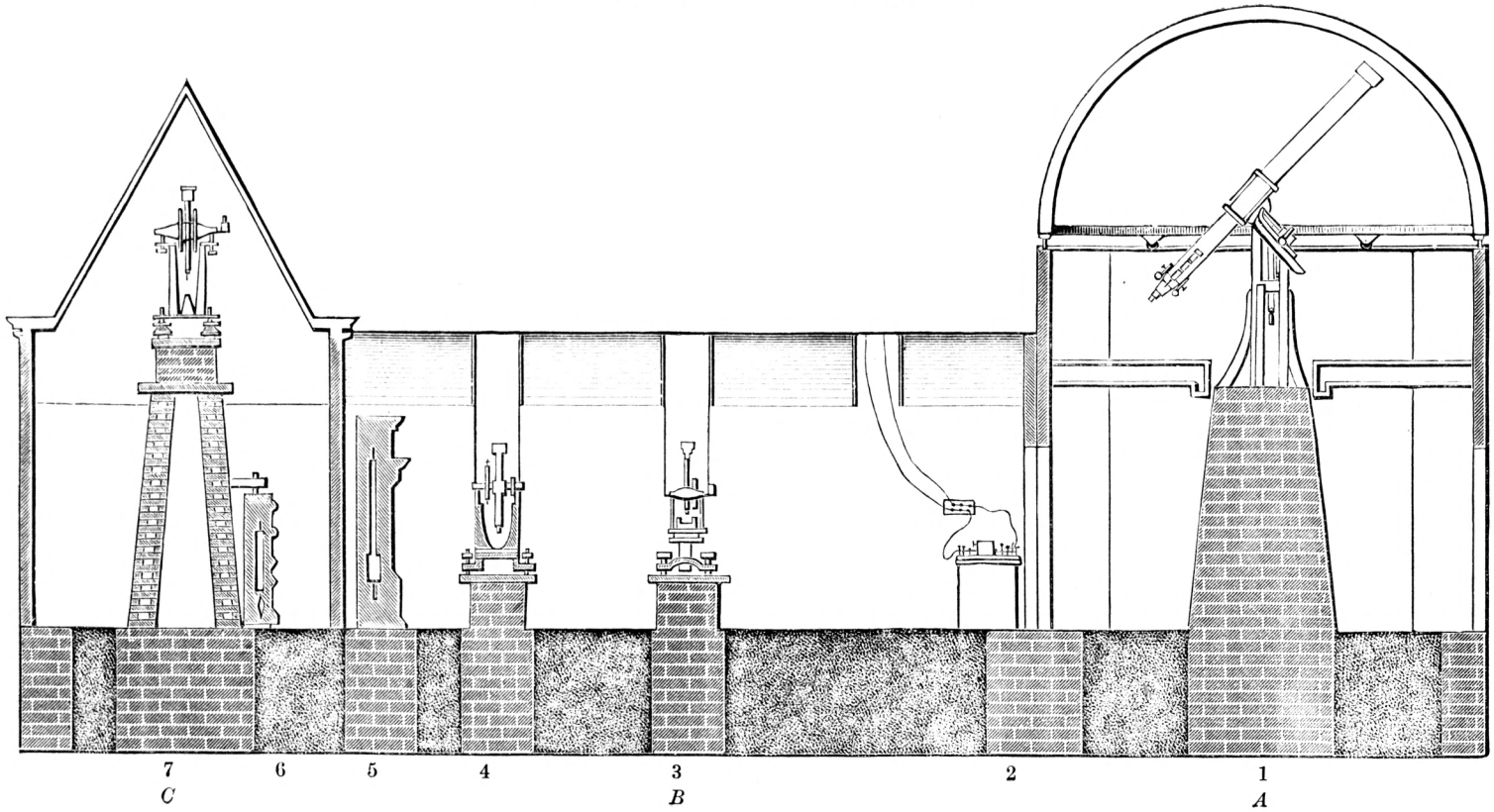
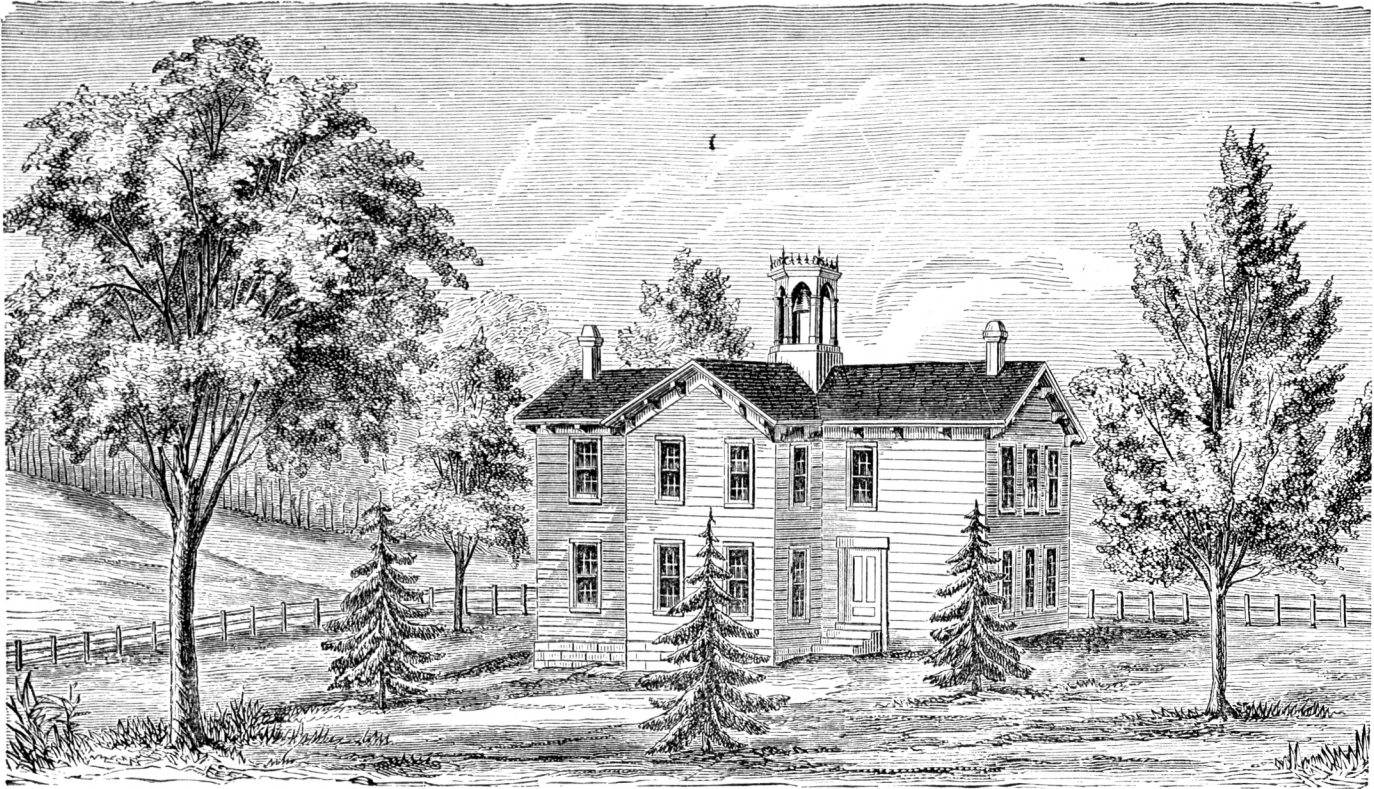


PLATE II.—VERTICAL LONGITUDINAL SECTION.

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

PLATE III.



THE ENGLISH AND ART SCHOOL.

PLATE III.

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

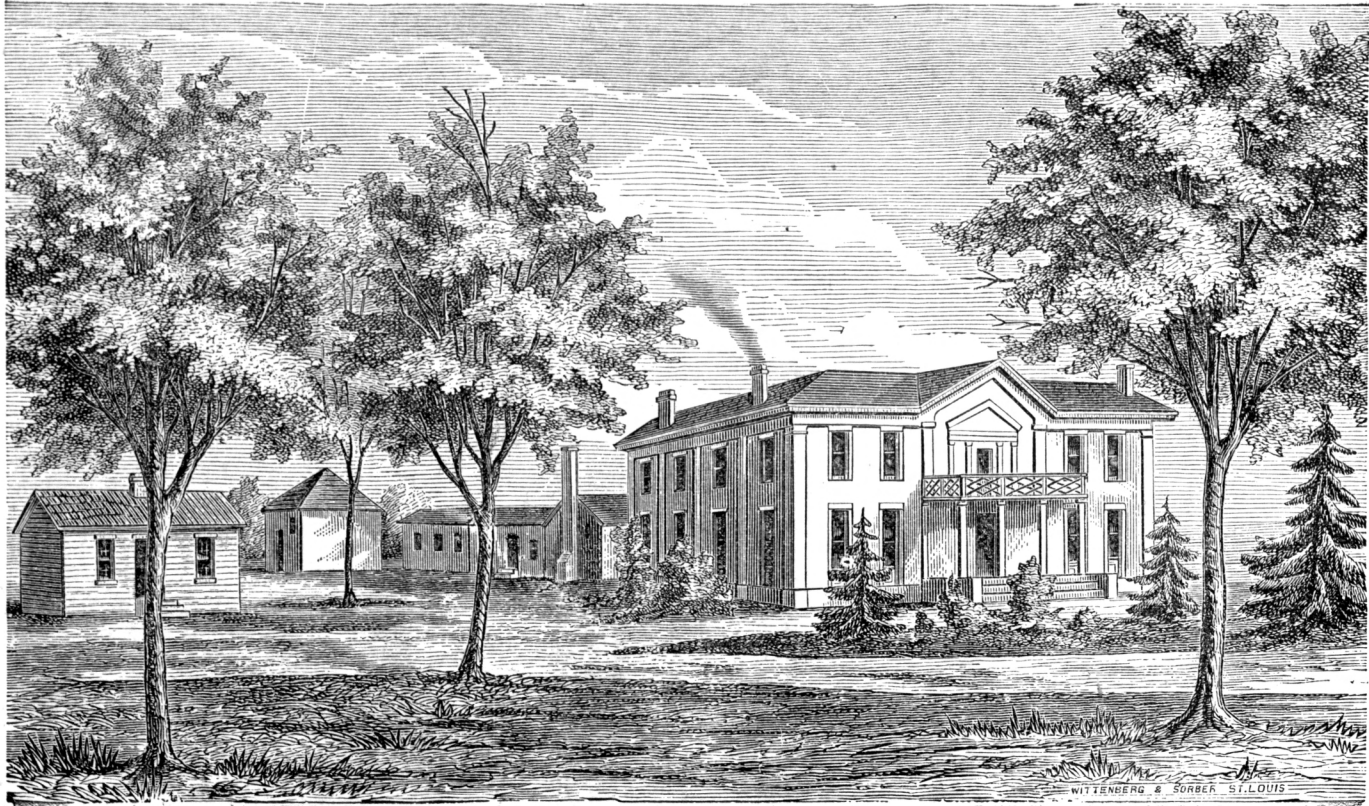
In this building will be found the rooms of—

1. The Professor of English.
2. The Assistant Professor of Mathematics.
3. The Art Studio.
4. The Ladies' Literary Society Hall.

The Normal School room is in Science Hall, over the Cabinet, where there is ample accommodation, and good light for the classes in Drawing.



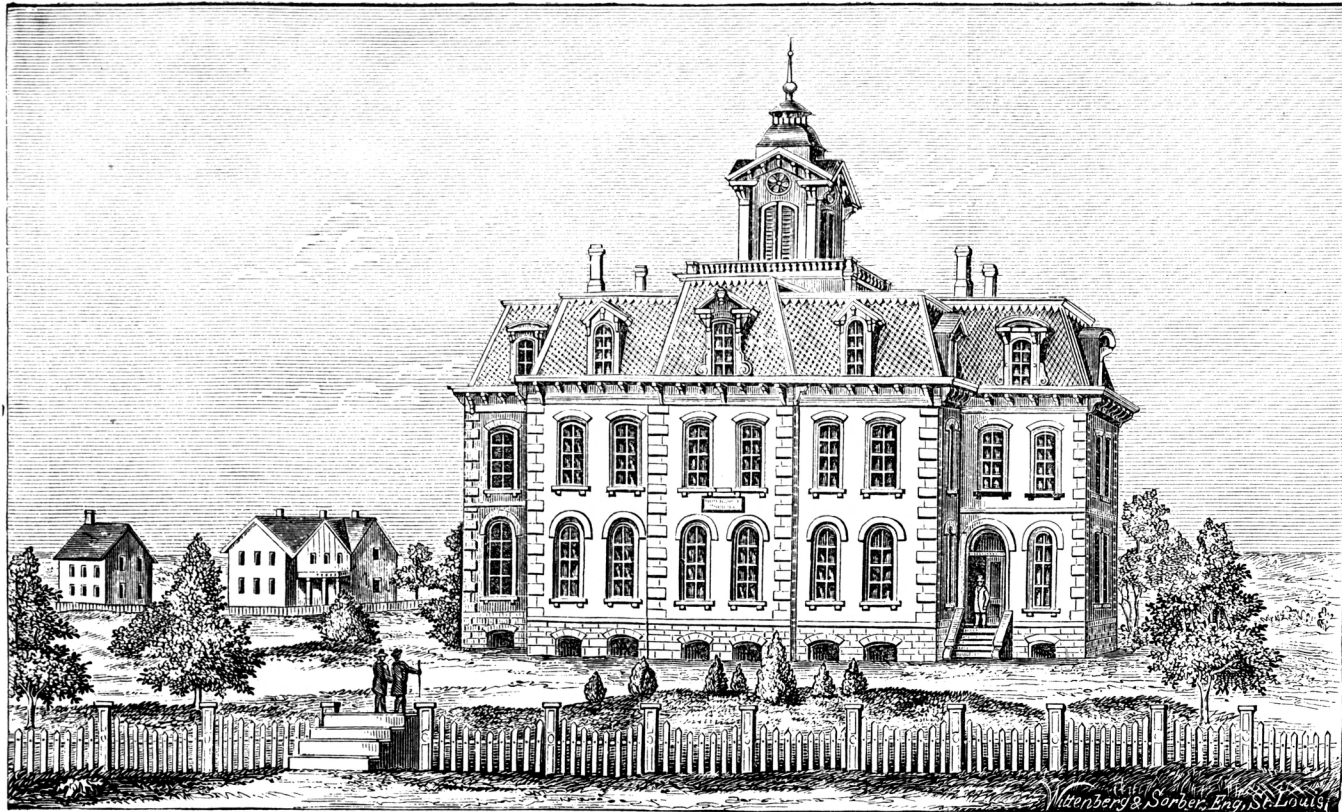
PLATE IV.



AGRICULTURAL COLLEGE FARM-HOUSE.

#### PLATE IV.

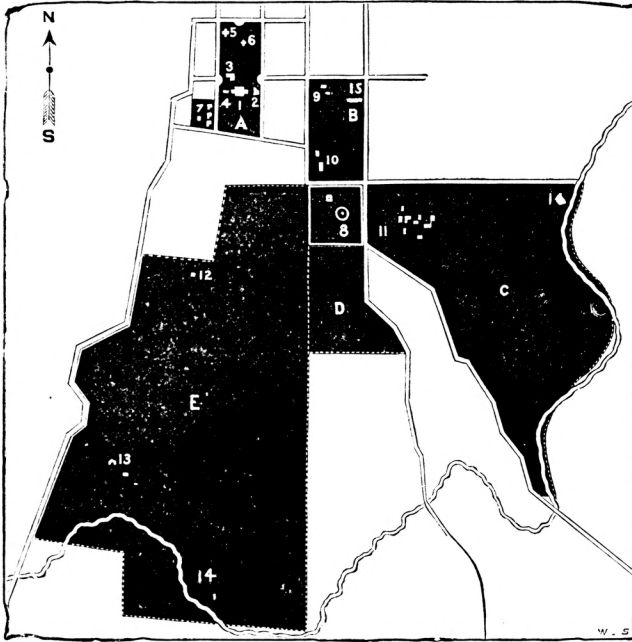
This house fronts west 52x44, with vestibule 18x10, and back extensions 116. There are twenty rooms, besides two cottages, 2 barns with stables, ice-house and other out buildings. It was built by Wm. W. Hudson, formerly President of the University. It is a large and excellent house, and beautifully located 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.



SCHOOL OF MINES AND METALLURGY, ROLLA, PHELPS COUNTY, MO.



PLATE VI.



GROUND PLAN OF CAMPUS AND FARM.

- A. Ground plan of the University Campus, (22 acres, with graded walks, and over 50 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, plate 1.
  2. President's Dwelling, plate 1.
  3. Science Hall, plate 1.
  4. Observatory—plate 2—has been moved to northeastern part of Campus.
  5. English and Art School, plate 3.
  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 4.
  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

AT

COLUMBIA, MISSOURI,

1880—1881.

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FOUNDED, 1820—ORGANIZED, 1840.

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JEFFERSON CITY :  
TRIBUNE PRINTING COMPANY, STATE PRINTERS AND BINDERS.  
1881.

## Announcement for 1881--1882.

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The Academic, Agricultural, Normal and Engineering Schools will open the 2<sup>d</sup> Monday (12th) of September, 1881. The Law and Medical Schools will also open September 12th.

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 alike open to young men and to young women. Excepting the Law, Medical and Engineering Schools, each \$40.00, and the Commercial School, the entire expense of 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 the Medical School, he has access to all the other departments of instruction without any additional expense. Commencement day will be the first Thursday of June, 1882.

Send for Catalogue to Librarian, Missouri State University, Columbia, Missouri.

SAMUEL S. LAWS, PRESIDENT.

REPORT  
OF THE  
Board of Curators to the Governor.

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*To His Excellency,* GOVERNOR T. T. CRITTENDEN:

SIR: Both the law of Congress, approved July 2d, 1862, and an act passed by the General Assembly, entitled "An act to locate and dispose of the Congressional Land Grant," approved February 24, 1870, makes it the duty of the Board of Curators at the close of each University year to 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, &c., &c. In complying with these requirements of the law, I have the honor to State to your Excellency that the University, with its various departments, was never in a more prosperous condition than at the present time, both as regards the number and efficiency of the corps of instructors and the number of students attending the different schools or departments of the institution.

It may be said, and with great truth and propriety as the collegiate year just ending approaches, the progress of the institution has been marked, and satisfactory, as will more fully appear in the reports of the President of the University and of the various professors having charge of the institution, which will accompany this communication. The time has evidently arrived when the State will have to make arrangements and supply the means for the continued and larger growth of her University. The room ought to be duplicated to accommodate well the number of students in attendance, and the various schools and departments of the institution now crowded into a very limited space, and it cannot be regarded otherwise than as a public misfortune that the General Assembly of the State at its last session did not make provision according to plans and estimates laid before them for the enlargement of the main edifice of the University, erected forty years ago, and intended to meet the wants of the limited population then occupying the territory of the State of Missouri and which has increased since that time seven fold at least. The failure to provide for this necessary enlargement checks the growth of the institution, and necessarily sets it back for the next two years to come. The Curators having immediate charge of the institution, understanding its interests and anxious for its success, did all in their power to induce favorable legislative action, but their efforts failed, only, however, to be repeated



again two years hence. The law requires, especially in the report which is made to the Governor, among other things, that the *wants* of the University with its various departments be fully stated, and this was so amply done in a short memorial signed by the Curators and presented to the 31st General Assembly, and also in which memorial was clearly defined the relation the University bears to the State and the Constitutional obligations of the State to maintain it that the memorial itself is made a part of this report, and the request made to print it in the appendix of the annual catalogue of the State University for the year 1880-81.

There was also an act passed by the last General Assembly, entitled "An act to encourage and increase the Public School Fund of the State by grant, gift or devise, as provided for in Sec. 6, Art. 11 of the Constitution of Missouri, and to provide for its safe and permanent investment." This is a law of such great significance, and importance to the educational interests of Missouri, that it is deemed also necessary that it be also printed in the appendix to the catalogue of the present year, in order that the friends of education, and the people of the State may be more fully informed in regard to it.

Recognizing your liberal views upon the subject of education, as so well expressed in your inaugural address, the curators earnestly request your further kindly co-operation with them in their earnest efforts to secure to the people of Missouri, and of the Mississippi Valley, a first class scientific and literary institution sufficient to meet the demands of the present and of the generations that are to succeed us.

I remain,

With very high regard,

Your obedient servant,

JAMES S. ROLLINS,

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

STATE UNIVERSITY, COLUMBIA, MO., April 30, 1881.

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CITY OF JEFFERSON, Mo., April 30, 1881.

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

THOS. T. CRITTENDEN, Governor.

Approved :

MICH'L K. McGRATH, Sec'y of State, }  
 JOHN WALKER, State Auditor. } Commissioners of Public Printing.

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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, cost 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.

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The Missouri University was founded by a grant of two townships (46,080 acres) of land to the State for that purpose, when, 1820, it was organized and admitted into the Union. The policy of the General Government to aid the States in the work of education, by land grants, was established 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 effectual means \* \* \* 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 obligations 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 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 also, and “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 VIth 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, 1117–8, 1112.) This policy of the State, therefore, is not open to question, having been settled from its foundation, nor can the educational policy of the State 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 indicate our historic and constitutional position, and suggest that, as a people, we 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 that 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 education 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 was 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 post-bellum discovery, nor importation from other sections of the country, but a policy conceived and born with the State herself. 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 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. At almost every meeting of the Legislature, some ignorant buffoon disgraces himself in connection with educational matters; fortunately it can't disgrace the State, as her early record is more honorable and its study is the best corrective of such brawling and rampant ignorance.

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.

#### CHAPEL TALK BY DR. TEFFT.

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. Laws, 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 U. S. 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 is 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 question, we must keep steadily in view the purpose of the U. S. in creating the trust.

Obviously it was not for the sake of favoring or benefitting 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 recipients 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 30, some 60, some 100 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 10,000 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.—[Statesman, April 22, 1881.]

It was 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 prevail. 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, Cooper, Saline, Howard, Boone or 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 coveyances 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 State 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 Board of Curators endorses most fully the well expressed views and liberal sentiments of Governor Crittenden, in his recent excellent inaugural address, in which we find the following pointed language :

“The educational interests of the State are fixed upon a firm foundation and should be sacredly guarded and wisely fostered. Parsimony towards education is liberality towards crime. Let us preserve the University of the State, the Normal Schools, that also of Metallurgy and the common schools,\* with vigilance, and if prodigal at all in expenditure of the people’s money, let it be in the interest of education. Education is contagious and every facility should be given for its diffusion. Crime as inevitably gives way before the march of education as the Indian, the wolf and buffalo do before the tread of civilization. No State is great until its educational facilities are great, and at the door of the poor boy in the cabin, as well as within the reach of the spoiled child of fortune. There is no cheaper defense to a community or a commonwealth than education. It is a stronger and safer bulwark, more unflinching and vigilant than the most powerful armaments of wood, iron and steel, and it makes its recipients the boldest defenders of the right and the most uncompromising enemies of the wrong. I repeat again an earnest recommendation of this subject to this honorable body. Let no efforts be too great, no patience too exhausting, and no means too arduous to extend it to all classes of society. Let us exhibit to the nation the noble spectacle of Missouri educated as she should be, her sons and daughters adding the grace, and powers, and virtues of cultivated minds to their fine natural qualities, and those who have contributed to bring about the results will be entitled to the lasting gratitude of posterity.”

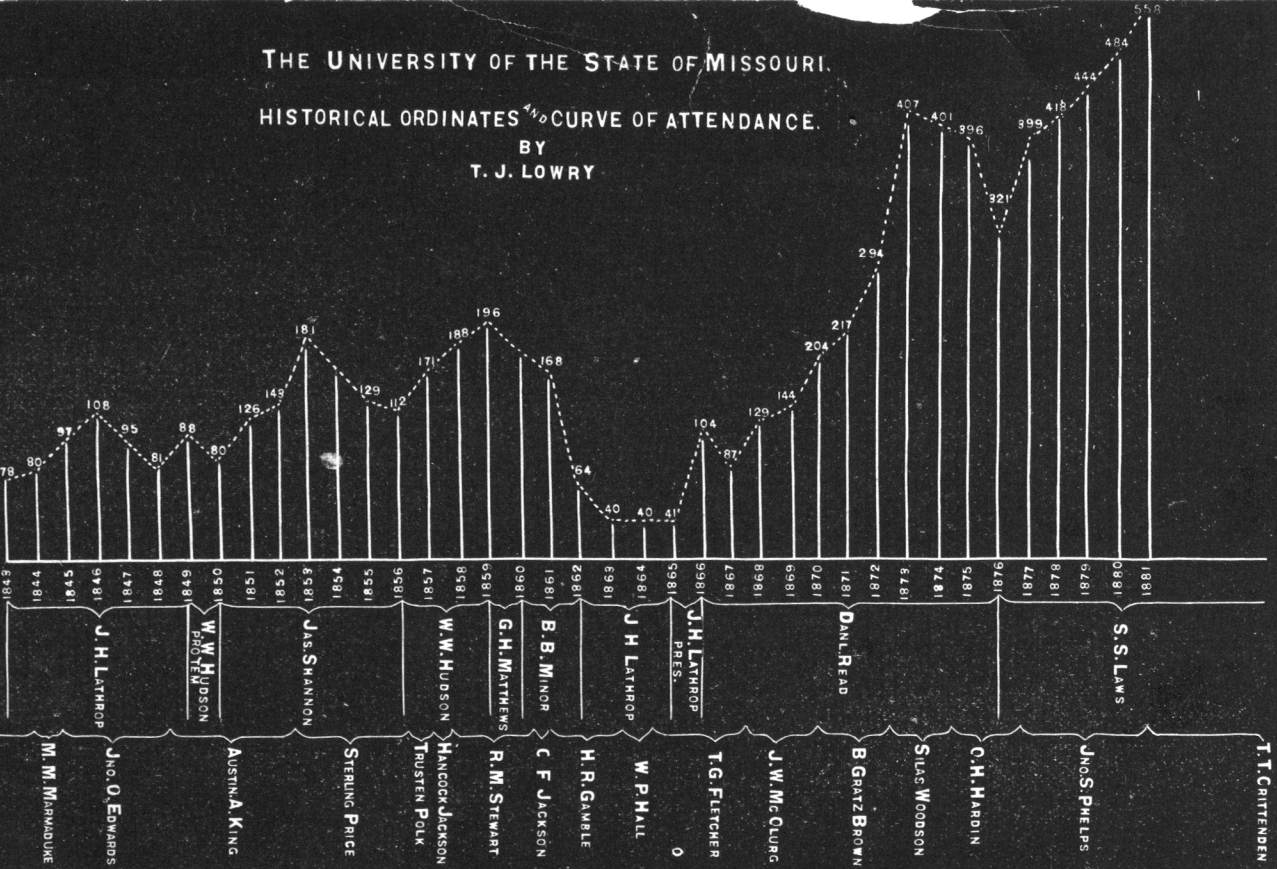
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\*The common school law provides for the separate education of the colored people, and the provisions of the law are the same for both classes, excepting some clauses favoring the colored people. The higher education is also provided for them by the 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 signature from the bill 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 along side of the State University 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 question which has vexed so many of the States.

THE UNIVERSITY OF THE STATE OF MISSOURI.  
 HISTORICAL ORDINATES <sup>1/10</sup> CURVE OF ATTENDANCE.  
 BY  
 T. J. LOWRY

NUMBER OF  
**STUDENTS**  
 SCALE, 25 STUDENTS  
 DISTANCE BETWEEN  
 ORDINATES.

**YEARS**  
**PRESIDENTS**  
**GOVERNORS**



# CORPORATION.

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“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.”

JOHN S. CLARKSON, A. M.....	Columbia.....	} Term expires Jan. 1, 1883.
JERRE C. CRAVENS, ESQ....	Springfield ...	
ALEXANDER M. DOCKERY, M. D.....	Gallatin.....	
ELDER JOSEPH K. ROGERS, A. M.....	Columbia.....	} Term expires Jan. 1, 1885.
HON. JOHN WALKER .....	Howard Co...	
A. M. MILLARD.....	Rolla .....	
HON. JAMES S. ROLLINS, LL. D.....	Columbia.....	} Term expires Jan. 1, 1887.
CHARLES C. BLAND, ESQ.....	Rolla.....	
WILLIAM H. LACKLAND, ESQ.....	St. Louis.....	

## OFFICERS OF THE BOARD.

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

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## SCHOOL OF MINES.

### EXECUTIVE COMMITTEE.

JUDGE CHARLES C. BLAND, Chairman.....	.....	Rolla.
JERRE C. CRAVENS, ESQ.....	.....	Springfield.
A. M. MILLARD .....	.....	Rolla.
C. H. FROST, Treasurer.....	.....	Office at Rolla.
PROF. R. W. DOUTHAT,		
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 and with the advice and consent of the Senate.

UNIVERSITY CURATOR LAW, 1877 :

QUORUM.—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 their office for two years, from January 1st, 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; 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.

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## BOARD OF VISITORS.

J. V. C. KARNES, A.M.....	Kansas City.
HON. CYRUS S. BROWN .....	Shelby county.
COL. ALEXANDER F. DENNY.....	Randolph county.
CHARLES E. LEONARD, ESQ.....	Cooper county.
HON. E. W. FOX.....	St. Louis.

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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 Treasurer of the State, who shall pay the same out of any money in the Treasury not otherwise appropriated.—ACT, 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.

(The Professors succeed each other according to seniority of appointment.)

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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.*

GEORGE C. SWALLOW, M. D., LL. D.,  
*Professor of Agriculture and Natural History and Dean of the Agricultural Faculty.*

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

HON. PHILEMON BLISS, LL. D.,  
*Professor of Law and Dean of Law Faculty.*

HON. BOYLE GORDON,  
*Professor of Law.*

ANDREW MCALESTER, 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.*

ROBT. W. DOUTHAT, A. M., PH. D. (M. S.\*),  
*Professor of Languages, Principal of Preparatory Department and Secretary of Faculty.*

JUDGE HENRY S. KELLEY,  
*Lecturer on Criminal Jurisprudence.*

JUDGE ARNOLD KREKEL,  
*Lecturer on Federal Jurisprudence.*

JUDGE SEYMOUR W. THOMPSON,  
*Lecturer on the Law of Negligence.*

S. M. TRACY, M. S. (Michigan Ag. Col.),  
*Professor of Botany and Entomology and Superintendent of Gardens.*

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\*Mining School.

M. M. FISHER, A. M., D. D.,  
*Professor of Latin Language and Literature.*

THOMAS J. LOWRY, S. M., C. E.,  
*Professor of Civil Engineering and Dean of Engineering Faculty and Secretary of the Faculty.*

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

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

MISS GRACE C. BIBB,  
*Professor of Pedagogics and Dean of the Normal Faculty.*

JOHN H. DUNCAN, A. M., M. D.,  
*Professor of Physiology, Materia Medica and of the Principles and Practice of Medicine.*

WOODSON MOSS, M. D.,  
*Professor of Anatomy and Demonstrator.*

MISS FLORENCE E. WHITING (M. S.\*),  
*Assistant Preparatory Department.*

A. F. FLEET, A. M.,  
*Professor of Greek and Comparative Philology.*

JAMES SHANNON BLACKWELL, A. M., PH. D.,  
*Professor of Hebrew and Semetic Literature and of Modern Languages.*

GEORGE HUSMANN,  
*Professor and Superintendent of Pomology and Forestry.*

LIEUTENANT FRANK P. BLAIR, LL. B.,  
(Detailed from the Regular Army),  
*Professor of Military Science and Tactics.*

MRS. O. A. CARR,  
*Principal of Ladies Department and Adjunct Professor of English.*

CONRAD DIEHL,  
*Professor of Art.*

BENJAMIN F. THOMAS, PH. D. (Stevens' Institute),  
*Professor of Physics.*

THOMAS C. THOMAS, T. E. (M. S.\*),  
*Adjunct Professor of Mathematics.*

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

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\*Mining School.

## STUDENTS.

## ABBREVIATIONS.

A.,	Agriculture.	Med.,	Medicine.
Anat.,	Anatomy.	Met.,	Metallurgy.
Bk.,	Book-keeping.	Ms.,	Metaphysics.
C.,	Chemistry.	M. L.,	Modern Languages.
Civ. Eng.,	Civil Engineering.	M. T.,	Military Tactics.
Cl.,	Calisthenics.	Min. Eng.,	Mine Engineering.
D.,	Drawing.	N.,	Normal.
E.,	English.	N. H.,	Natural History.
G.,	Greek.	P. S.,	Political Science.
H.,	History.	Ph.,	Physics.
L.,	Latin.	S.,	Semitic Languages.
	Law.	Sur.,	Surveying.
Ly.,	Laboratory.	Top'l Eng.,	Topographical Engineering.
M.,	Mathematics.		

## UNDER-GRADUATES.

<i>Names.</i>	<i>Residences.</i>	<i>Schools Attended.</i>
Alexander, Curtis.....	Nodaway county.....	M., N. H., Ph., H., Bk., P. S.
Alexander, John.....	Linn	“ ..... M., Ms., M. L.
Alexander, Paul.....	Monroe	“ ..... M., G., L., M. L.
Alford, Thomas Payton.....	Ralls	“ ..... D., M., Ph., Sur., M. L.
Alkire, David Solomon.....	Holt	“ ..... Law.
Alkire, Henry T.....	Holt	“ ..... Law.
Anderson, James A.....	Arago, Nebraska.....	Law.

<i>Names.</i>	<i>Residences.</i>	<i>Schools Attended.</i>
Angell, Mary Etta.....	Boone county.....	I., H., M., M. L., P. S., D.
Armstrong, Frank Charles.....	St. Louis city.....	Sur., M., C., D., Civ. Eng.
Arnold, Albert Lee.....	Callaway county.....	E., M., N. H.
Arnold, Harriet Adaline.....	Boone	“ ..... H., N., M., D., N. H., P. S., E.
Arnold, Robert L.....	“	“ ..... A., M., E.
Arnold, William L.....	Lewis	“ ..... M., L., D., E., N. H.
Austin, Robert Stubblefield.....	Boone	“ ..... Ph., C., Anat., M. L., N. H., Ly., P. S.
Avery, James Henry.....	Henry	“ ..... M., D., E., Ph., Sur.
Bagby, Oliver.....	Franklin	“ ..... Med., Ph.
Bailey, Andrew A.....	Linn	“ ..... E., G., L., C., Ph., D., M., M. L.
Bailey, John M.....	Boone	“ ..... D., P. S., L., M. G.
Ballard, Richard Thomas.....	Saline	“ ..... Med., Ph.
Banks, Jane Moore.....	Boone	“ ..... E., S., Ms., N. H., M. L., G.
Banks, Mary Robert.....	“	“ ..... L., H., D., M., M. L.
Banks, William R.....	“	“ ..... Bk.
Barnes, Thomas Money.....	Newton	“ ..... P. S., M., N., Bk.
Barret, Lizzie H.....	Boone	“ ..... E., M., D., N., H.
Bascom, Frank Dinwiddle.....	Lafayette	“ ..... E., L., M., H., G.
Bascom, Walker.....	“	“ ..... M., N. H., Ly., Ms., M. L.
Bass, E. Everette.....	Boone	“ ..... S., I., C., Ph., M. L.
Bass, Maggie.....	“	“ ..... M. L., Ph., H., P. S.
Bates, Edward Prewitt.....	“	“ ..... M., Ph., D.
Batterton, Leonora D.....	“	“ ..... M., E., N., D., N. H.
Batterton, Mary Effie.....	“	“ ..... M., H., N. H., N., D., E., Cl.
Batterton, Zona Young.....	Deer Lodge, M. T	“ ..... L., M. L., E., H., M., D., P. S.
Bauerlein, Frank.....	Jackson county.....	“ ..... M., N. H., C., G., L., P. S.
Baumgartner, John P.....	Boone	“ ..... M., E., L., Bk., P. S.
Beattie, Thomas Jefferson.....	Cass	“ ..... L., H., M. L., M., N. H.
Beazley, Robert Hiter.....	Chariton	“ ..... Law.
Bedford, Arthur C.....	Stoddard	“ ..... E., M., Bk., D.
Bedford, William A.....	Boone	“ ..... E., L., M., G.
Bell, Alexis D.....	Ralls	“ ..... Law., Ms., M. L.
Bellows, George P.....	Nodaway	“ ..... E., H., M., N. H., P. S., Bk.
Biggs, John C.....	Pike	“ ..... E., M., C., A.
Birch, Charles C.....	Clinton	“ ..... E., M., L., P. S.
Birney, Milton.....	Schuyler	“ ..... M., M. L., H., N. H., P. S.
Black, James.....	Ray	“ ..... H., Ms., G., M. L., N. H., Law, Ph.
Blackburn, Churchill J.....	Saline	“ ..... Med., Ph.
Blackwell, Egbert E.....	Callaway	“ ..... Med.
Blanks, James Garland.....	Caldwell	“ Tex. M. L., Ph., N. H., D.
Boeger, Ernest A.....	Decatur	“ Ia... M., Ph., A., M. L., D., E., N. H.
Booth, Henry Spurgeon.....	Saline	“ ..... L., E., M., M. L., P. S.
Bottom, John Thomas.....	Caldwell	“ ..... Law.
Botts, James Horatio.....	Audrain	“ ..... E., L., M., N. H.
Botts, William Warren.....	“	“ ..... M. L., E., L., M., P. S.
Boulton, Payne A.....	Boone	“ ..... E., L., M., N. H.
Boulton, Walter E.....	“	“ ..... M. L., Ph., H., A., D., N. H., M., P. S.



<i>Names.</i>	<i>Residences.</i>	<i>Schools Attended.</i>
Bowen, James K. P.....	DeKalb county.....	Med., Ph.
Boyles, John M.....	Linn	“ ..... Med.
Bradford, George.....	Boone	“ ..... E., L., M., Bk.
Bradley, Andrew J.....	Platte	“ ..... L., Ph., M., E.
Brandt, Otto.....	Osage	“ ..... E., M., N. H., H., M. L., Bk., P. S.
Brannan, Thomas.....	Muscogee	“ Ga.. A., M., M. L., Ph., D.
Brashear, J. C.....	Audrain	“ ..... M., Ph., L., G.
Brashear, James J.....	Audrain	“ ..... E., L., M., P. S.
Brashears, Claribel.....	Cincinnati, Ohio.....	Ph., M., D., Cl., N. H.
Bresnehen, Thomas Miles.....	Linn county.....	M. L., M., N. H., C.
Briles, Christopher Columbus..	Cass	“ ..... M., L., C., E.
Briscoe, John J.....	Marion	“ ..... M., N. H., E.
Broadwell, William Joseph....	Jackson	“ ..... E., L., M., G., Bk.
Brown, Katie.....	Boone	“ ..... M., E., N., C., D., N. H.
Brown, William H.....	Jackson	“ ..... Ph., H., L., G., M., D.
Bryan, Fenley C.....	Audrain	“ ..... L., C., Ly., M. L., M., P. S.
Bryan, William Edward.....	Bates	“ ..... G., L., P. S.
Buckner, Alonzo Columbus....	boone	“ ..... M., Ph., H., D.
Bull, William Blackwell.....	Lafayette	“ ..... Ph., M., E., L., G., D.
Burgwin, Abner B.....	Boone	“ ..... Med., Ph.
Butler, Granville.....	Gentry	“ ..... L., G., M., D.
Buzzard, Halleck.....	Daviess	“ ..... M., M. L., Ph., E., L., P. S.
Byrd, Edward Bailey.....	Monroe	“ ..... Law.
Caldwell, Dixie Davis.....	Ralls	“ ..... E., N. H., M., P. S.
Campbell, Frank William.....	Lafayette	“ ..... M., L., Bk.
Campbell, Hiram Frank.....	“	“ ..... E., Bk., L., M., N. H.
Carlisle, Ellena Bruce.....	Boone	“ ..... E., M., N. H., C., D., Cl., M. L.
Caskie, Mattie K.....	“	“ ..... M. L., E., M., L., D., G.
Cave, Willard P.....	Randolph	“ ..... L., E., M. L., M.
Chapman, Al.....	Scott	“ Ill... Law.
Chapman, Earl Worden.....	Chariton	“ ..... N., H., M., Bk., N. H., D., E.
Chowning, Charles Wm.....	Monroe	“ ..... L., G., Ph., N. H., D., M.
Chowning, John Liter.....	“	“ ..... Sur., M. L., M., D., Civ. Eng., N. H.
Christie, Cassius Westwood... Lewis	“	“ ..... H., M. L., Ms., N. H., H., E., S., M., Law.
Chubbuck, Levi.....	Daviess	“ ..... A., C., N., D., E., L., N. H.
Clarke, James Newton.....	DeKalb	“ ..... E., L., C., M. L., N. H., Sur.
Clayton, Frank Ford.....	Boone	“ ..... E., L., M., D., G.
Clifford, Ernest A.....	Pike	“ ..... E., Ph., C., M., P. S.
Clarkscales, Robert L.....	Boone	“ ..... M., E., L., Bk., D.
Cochran, Lucy F.....	“	“ ..... E., H., N. H., N., M., D.
Coffman, George Williamson ..	Ray	“ ..... D., M. L., M., Ph., L., Bk., N. H.
Cole, John B.....	Scotland	“ ..... Law.
Cole, Joseph Kennett.....	“	“ ..... Med.
Conkling, Matthew Rothery ...	Boone	“ ..... M., L., G., D., H., N. H.
Conrad, George Elihu.....	Bollinger	“ ..... L., N. H., C., E., M.
Cook, Robert Milton.....	Grundy	“ ..... Law, M., C., Ly., P. S.
Cooper, Aubert J.....	Lee	“ Ala.. M. L., L., Ph., E., M., N. H.
Cooper, B. A.....	“	“ “ S., N. H., C., Ms., Law.

<i>Names.</i>	<i>Residences.</i>	<i>Schools Attended.</i>
Cooper, John M.....	Saline	county..... L., G., N. H., C. M., Ly.
Cottingham, Robert Curtis.....	Randolph	“ ..... M., Ph., H., P. S.
Cowherd, William S.....	Jackson	“ ..... Law, G., Ms., N. H.
Cox, Albert Henry.....	Audrain	“ ..... Med., Ph.
Cox, Daniel W.....	Lawrence	“ ..... N. H., M., E., A.
Cox, Henry Jefferson.....	“	“ ..... G., L., Anat., Ph., N. H., E.
Cox, James William.....	Platte	“ ..... E., L., M., N. H., Anat.
Crane, Darius Worthington....	Boone	“ ..... E., L., N. H., M.
Crews, Joseph Henry.....	“	“ ..... E., L., M., A.
Crittenden, Henry H.....	Johnson	“ ..... Ms., N. H., S., M. L., E., Law.
Crittenden, Thomas T., Jr.....	“	“ ..... E., L., M., M. L., G., N. H.
Cross, James Thomas.....	Randolph	“ ..... Ph., N., C., N. H., M., D., Ms.
Cross, Sarah Cornelia.....	“	“ ..... E., M., H., N. H.
Cross, William Clay.....	“	“ ..... E., M., D., P. S., N.
Croswhite, James Henry.....	“	“ ..... G., L., M., D., N. H.
Curtwright, Charles Hardin....	Boone	“ ..... Ms., N. H., S., M. L., E., Law, G. M.
Dalton, Henry B.....	Clinton	“ ..... E., L., M., Sur.
Daniels, Samuel.....	Morgan	“ ..... D., E., M., C., L., N., N. H.
Davis, Emma Bettie.....	Callaway	“ ..... E., M., D., N. H., Cl., N.
Davis, Fannie C.....	Lawrence	“ Ind. E., N., C., M., D., N. H., Ms., Ph.
Davis, James Rollins.....	Randolph	“ ..... Law.
Davis, Samuel Echols.....	Cowley	“ Kan M., L., M. L., P. S.
Dawes, Isaac M.....	Saline	“ ..... A., E., N. H., M., H., A.
Day, Bettie.....	Callaway	“ ..... E., M., Cl., N. H.
Dayton, William H.....	Boone	“ ..... E., M., L., Bk., Sur.
Dearmont, Washington S.....	Holt	“ ..... H., E., M., L., D., N. H., G.
DeFrance, Wesley H.....	Adair	“ ..... G., M., C., Ph., N. H., M. L., L.
Denham, James M.....	Boone	“ ..... A., N. H., C., Ph.
Denham, William H.....	“	“ ..... M., L., N. H., A.
Dennis, Mary.....	Boone	“ ..... M., E., H., N., D., N. H.
Denny, Joseph S.....	Howard	“ ..... Law.
Dodge, Ernest Cole.....	Scott	“ ..... L., G., M., Ph.
Donlin, William John.....	Nodaway	“ ..... M. L., D., H., M., P. S., Bk.
Doolittle, Marshall Erwin.....	Russell, New York	..... Med.
Dorsett, Palemon H.....	Boone	county..... L., G., D., M., A., N. H.
Downs, Emerson Lincoln.....	Fayette	“ Ill. M., L., M. L., E., N. H.
Downs, Loyd Sanford.....	“	“ “ M., L., M. L., C.
Downs, Nettie L.....	“	“ “ E., M., N. H., D.
Drury, William Marvin.....	Holt	“ ..... L., M. L., E., M.
Dunham, George A.....	Harrison	“ ..... L., D., G., M., H., N. H., M. L.
Durham, Arthur C.....	Randolph	“ ..... L., E., M., M. L.
Dusenbury, Richard M.....	Audrain	“ ..... M., Bk., E., L.
Dusenbury, Robert D.....	Boone	“ ..... M., Bk., N. H.
Dysart, Frank Thomas.....	McKinney	“ Tex. E., Ph., Bk., M., N. H., Anat.
Dyson, Dunbar Smith.....	Boone	“ ..... E., L., M., G., D.
Eagle, John Capers.....	Newton	“ ..... E., M., N. H., P. S., D., N.
Eldridge, Joseph J.....	Audrain	“ ..... Bk., M. L., Ph., C.
Ellis, Overton Gentry.....	Nodaway	“ ..... L., M. L., M., H., N. H., P. S., D.
Ely, Thomas R. R.....	Atchison	“ ..... Law.

<i>Names.</i>	<i>Residences.</i>	<i>Schools Attended.</i>
Emmons, Sterling Price.....	Callaway county.....	E., N. H., M., A., G.
Evans, Georgia.....	Boone “ .....	E., M., N., D., H., N. H.
Evans, Henry S.....	Washington “ .....	Law.
Evans, John Morgan.....	Deer Lodge, M. T.....	L., M., E., N., H., N. H., D., M. L.
Evans, Lanius Duane.....	Boone county.....	L., M. L., G., E., H., P. S., M.
Evans, Lutie Lee.....	Deer Lodge, M. T ....	M., H., N. H., N., D., E., Cl.
Farrar, Miles C.....	Iron county.....	L., N. H., C., Ph., Anat.
Fawver, Christopher Colum- bus.....	Barry “ .....	M., Ph., H., M. L.
Felker, Thomas Anderson.....	Maries “ .....	L., M. L., Ph., H.
Ferris, Forest G.....	Livingston “ .....	Law., M. L.
Ficklin, Nellie.....	Boone “ .....	L., N. H., M, Bk., D., Cl., E.
Ficklin, Octavia.....	“ “ .....	H., E., C., N. H., Cl., M., L., A.
Field, Sarah Josephine.....	“ “ .....	M., Ph., H., L., P. S., M. L.
Fink, Jacob.....	Helena, Ark.....	M., H., Ph., D., M. L., N. H.
Finley, Cyrus Pikard.....	Clay county.....	M., N., E., D., H., N. H., M. L., P. S.
Finley, David C.....	“ “ .....	L., G., M., N. H.
Finney, Frederick Stanton.....	Andrew “ .....	Ph., Bk., M., M. L.
Fishback, Thomas B.....	Lafayette “ .....	.....
Fisher, Samuel Blair.....	Boone “ .....	E., L., G.
Fowlston, George.....	Henry “ .....	A., C., Ph., M. L., Ly., N. H., M
Franklin, Charles Wesley.....	Pettis “ .....	Law, Ms.
Frisbie, Alvin Charles.....	Gentry “ .....	M., D., E., L., P. S.
Fry, James F.....	Monroe “ .....	E., N. H., H., N., D., M., P. S.
Frye, Barber Webster.....	Pike “ .....	E., L., M., G., D.
Fulcher, Alex. Page.....	Platte “ .....	E., N., H., D., N. H., Ph., M.
Fulton, Charles E.....	Saline “ .....	E, M., L., N. H.
Fulton, Francis H.....	Clinton “ .....	N., E., Ph., M.
Fults, Jacob C.....	Monroe Ill’s.....	N. H., L., C., Bk., E.
Gaitskill, Harry S.....	Monroe county.....	E., D., N. H., M., N., H.
Gamble, Carrie.....	Cole “ .....	H., L., S., N. H., C., M., M. L., I, y
Gamble, Mary Minor.....	“ “ .....	H., Ph., L., M., D., P. S.
Gates, George W.....	Macon “ .....	E., L., Bk., M., N. H.
Gauldin, Joshua B.....	Saline “ .....	E., N., C., D., N. H., Bk., Ph.
Gaut, James S.....	Johnson “ .....	L., C., N. H., M., Anat.
Gehring, Gustav.....	St. Charles “ .....	M., N. H., H., Ms., Ly., Law.
Gentry, Lulie W.....	Boone “ .....	L., D., M., Cl., N. H.
Gentry, North Todd.....	“ “ .....	L., E., D., M., N. H.
Gentry, Oliver Perry.....	“ “ .....	M., N. H., Ph., C., E.
Gentry, Thomas Jackson.....	Shelby “ .....	E., M., H., N., D., N. H., Bk.
Gerig, William.....	Boone “ .....	E., L., M., D.
Gibbons, James Hord.....	Lafayette “ .....	A., M., L., M. L.
Gibbs, Henry C.....	Pike “ .....	N. H., M., E., H., L.
Gibbs, John Henry.....	“ “ .....	Sur., Ph., C., L., P. S.
Gillaspy, George J.....	Boone “ .....	L., N. H., M., E.
Gillaspy, Rufus.....	“ “ .....	E., M., N. H., L., M. L.
Godwin, William M.....	Henry “ .....	M., E., Ph., N., D.
Gordon, James.....	Boone “ .....	Med.
Grady, James D.....	Linn “ .....	D., M L., M., L., N. H.

<i>Names.</i>	<i>Residences.</i>	<i>Schools Attended.</i>
Grass, John Paul.....	Gasconade county.....	D., M., M. L., L., E.
Graves, Charles T.....	Holt	“ ..... M., Ph., E., D.
Graves, Gwin.....	Boone	“ ..... “
Graves, John R.....	Macon	“ ..... E., L., M.
Gray, George Edgar.....	Boone	“ ..... P. S., N. H.
Gray, James Martin.....	Jackson	“ ..... L., M., E., M. L.
Greer, James A.....	Johnson	“ ..... E., M., L., N. H., P. S.
Gregory, Annie.....	Callaway	“ ..... N. H., M., E.
Grepmp, Christian C.....	Freudenstein, Ger.....	E., M., L., N. H., G., D.
Grepmp, Charles M.....	“	“ ..... E., M., L., G.
Grepmp, Henry J.....	“	“ ..... L., G., M., E.
Grepmp, Solomon A.....	“	“ ..... Med., Ph.
Gungoll, Emil.....	Gasconade county.....	E., M., N. H., H., M. L., Bk., P. S.
Gwinn, Russel.....	Pettis	“ ..... E., L., N. H.
Hackney, Thomas.....	Madison	“ ..... L., M. L., E., M., G., P. S.
Hall, James Leyton.....	Randolph	“ ..... M. L., L., M., P. S.
Haller, John P.....	Wythe	county, Va. Med.
Hargis, Greenup C.....	DeKalb	“ ..... L., M., E., N. H., G.,
Harrington, Carlton Augus- tus.....	Audrain	“ ..... E., L., M., N. H., A.
Harris, John Woods.....	Boone	“ ..... E., M., N. H., A., Bk.
Harris, Joseph Edwin.....	Montgomery	“ ..... Med., Ph.
Harris, Theodore.....	Johnson	“ ..... E., M., N. H.
Harrison, Alexander Isaac.....	Silver Reef, Utah....	E., Ph., M., N. H., P. S.
Harvey, James Frank.....	Lincoln	county.....
Hayes, Gretta.....	Boone	“ ..... G., M., H., L., E., N. H.
Hays, Wm. L.....	Cooper	“ ..... L., C., N. H., P. S., Bk., M. L.
Henderson, Frank L.....	St. Louis	“ ..... M., M. L., H., Bk., N. H.
Henderson, George Royall.....	“	“ ..... M. L., M., H., P. S., N. H.
Henderson, Richard L.....	Boone	“ ..... E., M., N. H.
Hendricks, Wallace.....	Fort Worth, Tex.....	Law., M., L., Bk., M. L., N. H.
Henry, Edward Parker.....	Boone	county..... Ph., H., S., A., D., M. L., M., P. S.
Herndon, William Shortridge	Platte	“ ..... Law.
Herring, Charles Jacob.....	Saline	“ ..... M., M. L., N. H., Ph.
Heskett, John W.....	“	“ ..... M., N., N. H., D., C., E., Bk., Ph., Ms.
Hewlett, Columbus Eli.....	Barry	“ ..... E., M., A., L., G.
Hewlett, Eli Judson.....	Lawrence	“ ..... E., M., A., L., N. H., D.
Hickman, James Thomas.....	Cooper	“ ..... E., M., H., A.
Hickman, Cornelia.....	Bates	“ ..... L., D., M., M. L.
Hickman, James H.....	Louisville, Ky.....	Law.
Hickman, Newton H.....	“	“ ..... L., N. H., Ph., M., P. S.
Hickman, Walker.....	Bates	county..... L., G., N. H., C., E., M. L., P. S.
Hines, William M.....	Boone	“ ..... E., N., Bk., C., D., H., N. H., P. S.
Hinkle, James.....	Franklin	“ ..... E., Ph., Bk., M., P. S., D.
Hoffman, Benjamin.....	Gasconade	“ ..... L., D., M., N. H., A., M. L.
Horine, Annie Morgan.....	Columbia, Illinois.....	H., N., C., M., N. H., E., D.

<i>Names.</i>	<i>Residences.</i>	<i>Schools Attended.</i>
Houf, John W.....	Callaway county.....	E., Bk., Ph., C.
Hourigan, John B.....	Howard	“ ..... E., N. H., M., A.
Howard, Andrew Jackson.....	Christian	“ ..... A., N. H., L., P. S., Sur.
Howe, Charles A.....	Boone	“ ..... E., L., M., D.
Hubbard, Edward S.....	Harrison	“ ..... L., G., M., D., H., P. S., M. L.
Hubbell, Finley D.....	Boone	“ ..... M. L., L., Ph., M., P. S.
Hume, Carrie L.....	“	“ ..... M., Bk., N. H., N., D. E.
Hume, Charles.....	“	“ ..... Med., Ph.
Hume, Sallie W.....	“	“ ..... E., M., N. H., N., D., Bk.
Hunton, McGhee D.....	New Orleans, La.....	E., L., M. L., N. H., S., E., P. S., Anat.
Husmann, Annie C.....	Boone county.....	E., H., M., M. L., D., N., N. H.
Husmann, George C.....	“	“ ..... E., L., H., D., A., N. H., P. S., L.
Husmann, Josie Lucy.....	“	“ ..... E., H., N., M., M. L., D., N. H.
Ilgenfritz, Linn Lemuel .....	Pettis	“ ..... M. L., N. H., H.
Irvine, Leigh H.....	Holt	“ ..... Law.
Jackson, Wilmer A .....	Nodaway	“ ..... E., Ph., N. H., H.
Jameson, Salie Reid .....	Callaway	“ ..... M. L., L., H., M., Ph.
Jennings, Laura D .....	Lincoln	“ ..... M., E., L., D.
Jester, R. E.....	Boone	“ ..... A., E., M., H., N. H., N., D., Bk., M. L.
Johnson, James O.....	Platte	“ ..... E., N., M., H., D., N. H.
Jones, Fayette A.....	Jackson	“ ..... E., L., N. H., M., D., G.
Jones, Flora E .....	Boone	“ ..... E., P. S., M., Cl.
Keiser, Katie.....	Cooper	“ ..... N. H., M., L., E., Cl., M. L.
Kelley, Hiram B.....	Scott	“ Illinois E., M., L., D., P. S.
Kemble, William.....	Marion county.....	Med., Ph.
Kennedy, Lamoureux .....	Warren	“ ..... Law, D., N. H.
Kenner, Mamie .....	Macomb, Illinois.....	E., M., D., N. H., Cl., A.
Kennish, John .....	Holt county .....	M., E., L., H., G., N. H.
King, Joseph Francis .....	Junction City, Kan...	M., Ms., L., N. H., D., Law, M. L.
Kirtley, Jennie.....	Ralls county .....	M., N. H., H., D., N., A., P. S.
Kirtley, Jessie Lee .....	“ “	“ ..... E., N. H., M., A., P. S.
*Koehler, Charles E.....	San Antonia, Texas..	M., D., Ph., Sur.
Land, John Braxton .....	Saline county.....	M., L., C. Bk., Mat. Med., N. H., Ly.
Lanpher, William .....	Madison	“ ..... E., M., H., Bk., P. S.
Lavelock, George .....	Ray	“ ..... Law, Ms.
Lawhorn, George W .....	Boone	“ ..... E., L., M., N. H., P. S.
*Lawless, Charles Burrell .....	Saline	“ ..... Med., Bk., M. L.
Leggett, John Cullen .....	Boone	“ ..... L., G., Ph., H., M., D., P. S.
Lenoir, James C.....	“	“ ..... L., M., C., Ph., E.
Lents, John Calvin.....	Newtoa	“ ..... E., M., N. H., P. S., N.
Lientz, Blanche Simpson.....	Boone	“ ..... E., M., L., N. H., Cl.
Lind, John W.....	Schuyler	“ ..... L., M. L., D., E.
Lockhart, George Lewis.....	Lafayette	“ ..... M., C., E., N. H., M. L., P. S.
Loeb, Hanau Wolf.....	Boone	“ ..... M., Ph., H., L., G., D., P. S.

\*Deceased.

<i>Names.</i>	<i>Residences.</i>	<i>Schools Attended.</i>
Logan, James Elmore .....	Clinton county.....	H., Ms., N. H., L., G., D., Ph., M., P. S.
Lonsdale, Frank S.....	Boone	“ ..... N. H., N., S., Ms., E., M., Law.
Lonsdale, Kate V .....	“	“ ..... M., H., E., C., N. H., P. S., M. L.
Lonsdale, Robert H .....	“	“ ..... L., E., M.
Lougeay, W. H .....	“	“ ..... Med.
Lucky, Marion Cortez .....	Lawrence	“ ..... N. H., A., E., L., N., D., M. L., P. S.
Lunceford, Sallie.....	Boone	“ ..... N. H., M., E., N.
Lyford, Harry O .....	Atchison	“ ..... Law, Ms.
Lyon, Andrew R.....	Knox	“ ..... M., Ms., H., M. L., P. S.
Lyon, Albert W .....	“	“ ..... D., M., L., C., N., Ph., P. S.
McAfee, Jennie Moore.....	Boone	“ ..... H., Ph., S., M., D., P. S., M. L.
McAfee, Lucy Dade.....	“	“ ..... M., N. H., D., Cl.
McBaine, James Benjamin.....	“	“ ..... M., N. H., L., D., M. L.
McCann, Robert.....	Marion	“ ..... M., N. H., E.
McDonald, Alexander .....	Buchanan	“ ..... E., N. H., C., P. S., M. L.
McDonald, James Newland.....	Bates	“ ..... L., M., H.
McGauhy, John F.....	Jonestown, Miss.....	Law.
McGauthey, Harvey.....	St. Clair county.....	L., E., M., G.
McGhee, Frank P .....	Wayne	“ ..... Law.
McKenzie, Asa B.....	Madison	“ ..... E., L., M.
McMackin, Charles M .....	Nodaway	“ ..... E., M., M. L., Bk.
McMahan, Martin Starr .....	McDonald	“ ..... E., M., N. H., P. S., N.
McManners, Mary.....	Boone	“ ..... E., M., H., N. H., Cl.
McNutt, Fannie .....	“	“ ..... E., L., M., N. H., Cl., G.
Maddex, Ida May .....	“	“ ..... N. H., E., H., M., Cl.
Maddex, Sallie .....	“	“ ..... E., M., H., N. H., N., D., Bk., Cl.
Magee, Robert Marion.....	Gentry	“ ..... M. L., M., P. S., E.
Major, Lucien Scruggs .....	Lafayette	“ ..... E., L., M., N. H., P. S.
Mallory, George Washington..	Audrain	“ ..... L., M., E., P. S.
Manring, Edward Denyer .....	Gentry	“ ..... G., L., D., N. H., M.
Manwaring, Charles William..	Gasconade	“ ..... A., E., L., H., D., M. L., P. S.
Marquette, Sarah Frances .....	Boone	“ ..... E., M., H., N. H., N., D.
Marshall, Thomas Charles.....	Johnson	“ ..... .
Martin, Douglas.....	Macon, Minn .....	Law.
Martin, Charles Pope.....	Boone county.....	E., D., M., L., G.
Mason, M. B.....	Chariton	“ ..... M., E., N., P. S., D.
Massey, Thomas Edwin.....	Clay	“ ..... M. L., E., Ph., M., C., N., Ms., N- H., D.
Maupin, Annie C.....	Boone	“ ..... M., L., E., D., M. L., N. H.
Maupin, Julia F.....	“	“ ..... H., M., E., D., Ph.
Megown, John Edward .....	Ralls	“ ..... M., M. L., Ms.
Meritt, John James .....	Montgomery	“ ..... M., M. L., Bk., D., Ph., N. H., E.
Meyer, Willard P .....	Holt	“ ..... E., M. L., H., M., D., L., P. S.
Miles, George W.....	Kansas .....	H., L., M., N. H., E., D., M. L.
Miller, Charles Ballentine .....	Boone county.....	Ph., M., N. H., Bk., E., P. S.
Miller, Pryor C.....	Dayless	“ ..... M., M. L., L., E., N. H.
Mitchell, Newman.....	Boone	“ ..... M., E., D.

<i>Names.</i>	<i>Residences.</i>	<i>Schools Attended.</i>
Mitchell, Charles P.....	Jackson county	N. H., M., Top'l. Eng., Ms., Ly., M. L., Law, Ph.
Mitchell, Stephen Arnold.....	“	“ ..... M. L., H., M., D., N. H.
Moore, Charles A .....	Scott	“ ..... L., M. L., C., N. H., Ph.
Moore, Mary Ruth.....	Clay	“ ..... N. H., Ms., M., H., Ly., Law.
Morehead, Garrett Worthing- ton .....	Howard	“ ..... E., L., M., D., G.
Morris, John Wesley .....	Holt	“ ..... M., D., Ph., N. H., M. L.
Mosby, William Shortridge.....	Montgomery	“ ..... M., M. L., Ph., D., N. H.
Mosley, Charles Louis.....	Gentry	“ ..... G., L., Ph., N. H., D., M., M. L.
Mottin, Ferdinand.....	St. Louis	“ ..... M., L., E., N. H., D.
Mowder, Frank Charles .....	Caldwell	“ ..... M., Ph., E.
Mudd, Foster M.....	Lincoln	“ ..... A., E., N. H., M., H.
Mulberry, Clara.....	Boone	“ ..... M., L., N. H., Cl., D.
Mulberry, Joseph Moten.....	Greene	“ Ill. L., M., E., M. L.
Murphy, Blanche.....	Boone	“ ..... H., Ms., L.
Murphy, Jodie .....	“	“ ..... H., Ms., Ph.
Murphy, Joseph Sinton.....	“	“ ..... M., E.
Murphy, Theodore Parkerson,	“	“ ..... E., M., N. H.
Murry, John Franklin.....	“	“ ..... Law.
Meyers, John Benjamin.....	St. Louis	“ ..... M., E., L., G., N. H.
Napton, Frank.....	Saline	“ ..... E., M., P. S., M. L.
Nichols, Annie R.....	Boone	“ ..... M., H., N., N. H., P. S., E.
Nichols, George Martin.....	“	“ ..... Med.
Nichols, William H.....	“	“ ..... S, Ms., L.
Norris, Walter Hardiway.....	“	“ ..... E., N. H., H., N., M., P. S., Bk.
Norris, Wilford Alexander.....	“	“ ..... Anat., E., L., Ph.
Northcutt, Mary Frances.....	“	“ ..... M. H., N. H., N., D., E.
Nowierski, Bronislaw Jozef....	“	“ ..... Ph., M. L., C., L., N. H.
Ogilvie, Jackson Lee.....	Mississippi	“ ..... E., L., M., D., G.
O'Mahoney, Daniel.....	Boone	“ ..... L., G., N. H., E., C., P. S., M. L.
O'Mahoney, John S.....	“	“ ..... N. H., D., E., M., G.
Orr, Frank Everett.....	Ralls	“ ..... E., L., M. L., M., P. S.
Otto, Leonard Henry.....	Boone	“ ..... S., N. H., C., E., D., M. L., M.
Owen, Walter Edwin.....	Henry	“ ..... N. H., M., H., Ms., M. L.
Parrish, J. S.....	Lee	“ Iowa E.
Payne, Joseph T.....	Pettis	“ ..... M., N. H., Ms., Civ. Eng., D. Anat., Law, A.
Peacher, James C.....	Boone	“ ..... E., M., H., N. H., D.
Peery, Edwin Howe.....	Grundy	“ ..... Law, Sur.
Pennington, James Madison...	Lawrence	“ ..... M., E., N., Ph.
Peter, Charles S.....	Holt	“ ..... Ph., C., N. H., D., P. S., M. L.
Petty, Joseph W.....	Saline	“ ..... Med.
Pharr, James Ruby.....	Pike	“ ..... G., L., Ph., M., N., N. H., D.
Phelps, James W.....	Chariton	“ ..... E., D., Bk., M.
Pharis, Thomas A.....	Bates	“ ..... Law.
Pickrell, Eugene Reason.....	Gentry	“ .. . Law, E.
Pierce, Isaac Thomas.....	Knox	“ ..... L., M. L., M., C.
Plattenburg, John Robert.....	Lafayette	“ ..... E., L., M., D.
Plattenburg, W. L.....	“	“ .. .

<i>Names.</i>	<i>Residences.</i>	<i>Schools Attended.</i>
Pollard, Enos.....	Saline county	..... H., Ph., M., D., Bk., M. L.
Porter, David White.....	Holt	“ ..... M. L., M., L., H., D., N. H.
Potter, Charles.....	Saline	“ ..... E., M., Bk., L., G.
Potts, Luther Emmett .....	Boone	“ ..... E., H., N., C., M., N. H., D., Ms., Bk.
Prewitt, Robert Chandler.....	Lincoln	“ ..... E., L., N. H., M. D., N., Bk., A.
Quarles, Lafayette.....	Boone	“ ..... G. L., N. H., C., E., P. S., M. L.
Quayle, Kate.....	Randolph	“ ..... N., Ms., N. H., H., Ph., M., D., E., Cl.
Ragan, Sylvester.....	Laclede	“ ..... Med., Ph.
Randolph, James Orville.....	Montgomery	“ ..... M., N., L., N. H., C., M. L.
Randolph, Katie Sarah.....	Holt	“ ..... M., N., C., N. H., D., E.
Raymond, John Henry.....	Mason	“ Texas E., N. H., Bk., M., P. S.
Rea, Mary Bell.....	Boone	“ ..... M., H., N., D., M. L., E.
Redman, Loid M. ....	Ralls	“ ..... L., E., M. L., M., P. S.
Redman, Minnie Ann.....	“	“ ..... E., M., L., N. H.
Redman, Richard E.....	“	“ ..... M., M. L., L., E., D.
Reed, Lida.....	Randolph	“ ..... M., H., L., M. L., P. S., N. H.
Reed, James D.....	“	“ ..... Med.
Reid, George M.....	Pettis	“ ..... N., N. H., D., M., E.
Rhodes, Henry Feagan .....	Marion	“ ..... L., E., N. H., C.
Rice, James W.....	Macoupin	“ Ill. M., L., E., C., G.
Rice, John Franklin.....	Randolph	“ ..... H., D., L., M.
Ridge, Thomas Smart.....	Jackson	“ ..... M., L., G., Ph., N. H., D., M. L.
Ritchey, William W.....	Clinton	“ ..... E., L., M., Sur.
Roberts, David Lee.....	Boone	“ ..... M., L., E., N. H.
Roberts, Fayette Brown.....	“	“ ..... Med., Ph.
Roberts, James H.....	Wirt	“ W. Va. E., Bk., M., N. H.
Rodes, Joseph Henry.....	Monroe	“ ..... Law.
Rodgers, Charles F.....	Daviess	“ ..... E., L., M., G.
Rogers, Archie Bowen.....	Boone	“ ..... Med., Ph.
Rollins, Jarrot Laban.....	“	“ ..... L., M., D., H., G.
Roseberry, Sterling Price.....	McDonald	“ ..... E., M., N. H., P. S., N.
Rowden, Robert Lincoln.....	Maries	“ ..... L., M. L., H.
Rowland, William P.....	Macon	“ ..... Ly., Ph., N. H., Ms.
Rubey, Thomas Lewis.....	Laclede	“ ..... L., E., M., N. H., P. S., G.
Russel, Edgar.....	Caldwell	“ ..... M., H., N. H., D., Ly., M. L., Ph.
Russell, John C.....	Mississippi	“ ..... H., M. L., L., M., P. S., N. H.
Rutledge, John Wesley.....	Copiah	“ Miss. E., M., L., G.
Schenck, Franklin Ellis.....	Morris	“ Kas. Med.
Schrantz, Ashnah B.....	Holt	“ ..... Ger., Sur., C., M., D., Civ. Eng., Ly.
Schwabe, James Webb.....	Boone	“ ..... L., G., M., D.
Scott, Albert W .....	“	“ ..... M. L., L., M., D., P. S.
Searcy, Effie Daisy .....	“	“ ..... H., L., M., P. S., M. L.
Seddon, William L .....	Stafford	“ ..... Top'l. Eng., D., C., N. H., Sur., Law, M., Ms., Ly.
Shackleford, Edwin D.....	Saline	“ ..... Law.
Shackleford, May.....	Cooper	“ ..... E., M., H., N. H., N., D., Cl.
Shackleford, Walter S.....	Saline	“ ..... Law.



<i>Names.</i>	<i>Residences.</i>	<i>Schools Attended.</i>
Shankland, William Marshall . Henry	county	..... E., L., M. L., G., N. H.
Shanklin, William Arnold.....	Carroll	“ ..... G., M., Ph., H, L. P. S.
Sharp, James Albert.....	Knox	“ ..... L., H., M., G., E., D., N. H., P. S.
Shaver, John William.....	Clinton	“ ..... E., Ph., C., N. H., A., P. S.
Shelley, Isaac Robert.....	McDonald	“ ..... M., E., H., Bk., D.
Shields, William C.....	Boone	“ ..... E., L., M., G.
Shiels, George Charles.....	New York, N. Y.....	E., M., D., M. L., P. S.
Shireman, Frank Segal.....	Andrew county	..... E., M., H., Bk.
Shock, Leslie E.....	Boone	“ ..... Med.
Short, John Francis.....	Cole	“ ..... Law, M. L.
Silvey, James Samuel.....	Howard	“ ..... M. L., L., H., M., N. H., G.
Silvey, William Riall.....	Morgan	“ ..... M., N., C., N. H., E., D., Ph., Bk.
Simcoe, Charles Bailey.....	Callaway	“ ..... L., D., E., M., G.
Sitlington, Thomas Olla.....	Lafayette	“ ..... E., L., M., D.
Slagle, James Alexander.....	Bollinger	“ ..... E., L., M., D., N. H.
Sloan, Robert T.....	Jackson	“ ..... M., G., L., Ly., N. H., C.
Small, William T.....	Fort Worth, Texas...	M., L., C., M. L.
Smiley, Frank.....	Cooper county.....	E., L., M. L., M., G.
Smith, Alvin J.....	Bates	“ ..... Law.
Smith, Andrew J.....	Fayette	“ Ill.. Law.
Smith, Ella.....	Boone	“ ..... E., Ph., C., M. L., D., P. S.
Smith, Horace A.....	St. Clair	“ ..... Law.
Spears, Mary.....	Pettis	“ ..... M., E., N. H., N., D., Cl., Ph.
Stephens, Peyton .....	Boone	“ ..... M., E., N. H., G., D.
Sterne, Frank.....	“	“ ..... N. H., N., Ms., M. L., P. S., Law.
Stevens, Beverly C.....	St. Louis	“ ..... E., M., H., M. L., D.
Stierberger, Charles Rudolph.....	Franklin	“ ..... Med.
Striker, Adolph.....	Saline	“ ..... E., M., G.
Striker, William.....	Saline	“ ..... E., M. G.
Stubblefield, John Loxley.....	Barry	“ ..... Ms., M., N. H., D., Eng., A., Law.
Sullins, Robert A.....	Franklin	“ ..... N. H., Ph., M., E., L.
Summers, Nettie Bruton.....	Boone	“ ..... C., P. S., N. H., M. L.
Sutton, B. M.....	Harrison	“ ..... Med.
Swindle, George.....	Barry	“ ..... E., L., N. H., M., Ph., P. S., M. L.
Swindle, John.....	“	“ ..... Ms., N. H., C., L., Law.
Swindle, Lafayette.....	“	“ ..... L., G., Ph., N. H., E., D.
Taylor, D. Clinton.....	St. Louis	“ ..... Law.
Taylor, James Henry.....	Morgan	“ ..... M., M., L., C.
Taylor, John Martin.....	Lafayette	“ ..... A., M., E., C., N. H., P. S., Ly.
Taylor, Logan Hunton.....	St. Louis	“ ..... L., E., M., N. H., M. L.
Taylor, Robert H.....	Helena, Ark.....	Law.
Terrill, Nettie.....	Boone county.....	L., N. H., E., P. S.
Theilmann, Gustav Adolph....	Caldwell	“ ..... Ms., D., N. H., M., H., Sur.
Theilmann, Robert Henry.....	“	“ ..... N., H., M., L., Sur., H., E., D., Anat.
Thomas, Annie Gray.....	Boone	“ ..... E., M., N. H., D., Cl.
Thomas, Martha B.....	“	“ ..... E., M., H., N. H., N., D., M. L.
Thompson, Clara Field.....	“	“ ..... L., E., N. H., D., M., Cl., A., M. L.
Thompson, George Richard... Mercer	“	“ ..... Med., Ph.

<i>Names.</i>	<i>Residences.</i>	<i>Schools Attended.</i>
Thraillkill, Joseph Standiford..	Randolph county.....	E., M., D., P., S., N.
Thurston, William.....	Boone	“ ..... N., H., E., M.
Tindall, Willoughby Cordell..	Howard	“ ..... Ms., N. H., M., Ly., Law.
Todd, Thomas W.....	Vernon	“ ..... E., L., M., G.
Trice, Charles Yancey.....	Clinton	“ ..... Law, Bk.
Trice, Henry Thomas.....	“	“ ..... Law, M. L.
Trice, Oliver C.....	DeKalb	“ ..... Med.
Tucker, John Speed.....	Colorado Springs, Col.	E., Bk., M., L., G.
Turk, John C.....	Lawrence county.....	M., E., N., Ph.
Tutt, Lewis H.....	Ralls	“ ..... E., L., M., C., P. S., Sur.
Wagner, Louis.....	Cole	“ ..... H., N. H., Ms., E., C., S., D., M. L., Law, Anat., Ly.
Walker, Clinton Davis.....	Knox	“ ..... E., H., N., C., M., D., N. H., Ms., Ph.
Walker, James Henry.....	Cooper	“ ..... L., G., M., D., N. H.
Walker, John H.....	“	“ ..... M., C., Sur., D., Ly., Civ. Eng.
Walker, Joseph P.....	Platte	“ ..... M. L., L., M., E., N. H.
Walker, Mary Bell.....	Cooper	“ ..... M. L., L., M.
Walker, Richard P.....	Platte	“ ..... E., M., N. H., L.
Wall, Claiborne Davis.....	Ray	“ ..... E., L., M., Bk., N. H.
Waters, William S.....	Boone	“ ..... M., N. H., E., H.
Watson, Edgar David.....	“	“ ..... L., G., M., E.
Webb, John Garland.....	Lafayette	“ ..... E., Bk., H., M., D., P. S.
Weinrich, John Ludwig.....	St. Charles	“ ..... E., N. H., M., H., A.
Werdeman, William.....	Boone	“ ..... E., M., D.
Wheeler, Alfred Bennett..	Lawrence	“ ..... M., D., C., N., Ph., Ms.
Whittle, Fannie L.....	Boone	“ ..... L., M., C., D., Cl., M. L.
Whittle, Thomas W.....	“	“ ..... L., E., M., N. H., D.
Whitworth, George Wesley...	Lafayette	“ ..... E., L., M., D., G.
Wigginton, James William....	Cape Girardeau Co....	E., H., M., D.
Wilcox, Francis Edward.....	Plano, Texas .....	L., E., N., H., P. S., M.
Wilcox, William P.....	Douglas county, Neb..	Med.
Wilderman, Thaddeus Lyon...	St. Clair Co, Ill.....	E., M., N. H., Bk.
Williams, Christena Ella.....	Boone county.....	M., N., D., E., H., N. H.
Williams, Harrison Ralph.....	Cape Girardeau Co...	E., L., M., G.
Williams, John F.....	Macon county.....	L., G., C., E., N. H., M. L., P. S.
Williams, John W.....	Boone	“ ..... Med.
Williams, Joseph Welling.....	Cape Girardeau Co....	G., L., H., M., N. H., M. L.
Williams, Marshall S.....	Gentry county.....	L., M., C., N. H., N.
Williams, Robert H.....	Franklin	“ ..... E., N. H., M.
Williams, Robert B.....	Pettis	“ ..... M., N., D., P. S.
Williams, William P.....	“	“ ..... L., G., M., H., Bk., P. S.
Williamson, Joseph Milton....	Clinton	“ ..... L., G., M., N. H.
Willis, John S.....	Boone	“ ..... M., H., N. H., N., D., E., Ph.
Willis, Mary A.....	“	“ ..... E., H., N. H., N., D., M., Ph., Cl.
Wilson, Benjamin F.....	Chariton	“ ..... Med., M. L., Ph.
Wilson, Francis M.....	Saline	“ ..... A., E., N. H., M., H., P. S.
Windsor, John William.....	Montgomery	“ ..... E., M., Bk., N. H.
Wingfield, James.....	Saline	“ ..... Law.

<i>Names.</i>	<i>Residences.</i>	<i>Schools Attended.</i>
Winn, Albert C.....	Boone county.....	Med.
Winn, Georgia.....	Clinton	“ ..... N. H., M., L., C., Ph., Anat.
Winn, Sallie Die.....	Boone	“ ..... M., H., N. H., N., E., P. S., Cl.
Winning, William E.....	Saline	“ ..... E., M., N. H., H.
Wollard, Thomas Jefferson....	Ray	“ ..... E., L., M., Bk.
Wood, Harry.....	Jackson	“ ..... M., E., N. H., L., M. L., G.
Wood, Leonard W.....	Greene	“ Ill... L., G., Ph., N. H., M., D., P. S.
Woolfolk, Juliet.....	Boone	“ ..... E., N., N. H., M., D., Ph.
Woolfolk, Paul Edwin.....	“	“ ..... E., L., M., D., Bk.
Wright, Lincoln.....	Randolph	“ ..... E., M., N. H., P. S., N., Bk.
Yates, Warren Samuel.....	Omaha, Neb.....	E., L., M. L., M., G.
Youmans Frank, Abijah.....	Lafayette county Ark.	M. L., H., M., Bk.
Young, Arch Brown.....	Boone county.....	L., M., E., M. L., D.
Young, Oscar.....	“	“ ..... E., N. H., H., M.
Youngers, Hattie Price.....	“	“ ..... E., M., H., N. H., N., D., Ph., Cl.
Zillman, Augustus William....	Charlton	“ ..... E., L., H., M. L., P. S.
Zook, Charles Daniel.....	Holt	“ ..... N. H., H., M. L., Ph.

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## POST-GRADUATES.

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<i>Names.</i>	<i>Residences.</i>	<i>Courses of Study.</i>
Babb, Eugenia P., Stephens Female College.....	Boone county.....	L.
Babb, Henry B., S. B., Pe. B., Mo. University.....	“	“ ..... Law.
Babb, Jeremiah G., A. B., Mo. University.....	“	“ ..... Law.
Banks, Laura A., L. B., Mo. University.....	“	“ ..... Ly.
Bedford, Sallie.....	“	“ .....
Burleson, Percival, A. B., Waco University.....	——, Texas.....	N. H., Ph., C., Ly.
Crumbaugh, James E., Ph. B., Mo. University.. ..	Boone county.....	Law.
DeTray, Nettie E., Warrens- burg Normal.....	Cooper	“ ..... M. Ms., Law, N. H., M. L., Anat.
Edmonstone, Addie.....	Boone	“ ..... L.
Field, Fannie P., Ph. B., Mo. University.....	“	“ ..... N.
Flood, George E., S. M., Ag. M., Mo. University.....	“	“ ..... Civ. Eng., D.

<i>Names.</i>	<i>Residences.</i>	<i>Courses of Study.</i>
Flood, Sallie R.....	Boone county.....	N., Ph., M., E.
Gamble, Mrs. S. M.....	Cole “ .....	L.
Guild, Franklin E., S. B., Ar- cadia College.....	Iron “ .....	Ly., Ms., Top'l, Eng., D., N. H., Law, M. L., M.
Hayes, Kate, A. B., Pe. B., Mo. University.....	Boone “ .....	M. L.
Houchens, Fielding W., A. B., Mo. University.....	“ “ .....	L.
Logan, Fannie M.....	Clinton “ .....	L., G., M. L.
Murphy, L. Nora, Stanford Fe- male College.....	Stanford, Kentucky... ..	H., Ms., P. S., N. H.
Tapley, Joe, Ph. B., Mo. Uni- versity.....	Pike county.....	Law.
Wilkie, Mrs. W. B. Y.....	Boone “ .....	L.

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## STUDENTS OF SCHOOL OF MINES AND METALLURGY.

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<i>Names.</i>	<i>Residences.</i>	<i>Courses of Study.</i>
Beitzel, A. H.....	Rolla.....	Preparatory course.
Beitzel, H. C.....	“ .....	“ “
Black, Wm.....	Phelps county.....	Surveyor's “
Booth, J. McK .....	Price's P. O.....	Chemical and Surveyor's.
Brown, Missouri.....	Phelps county.....	Preparatory course.
Bush, Benj. F.....	Americus.....	Normal “
Burns, W. C.....	Ozark Iron Works....	Book-keeper's “
Carr, W. J. C.....	Leavenworth, Kas....	Mine engineering.
Cowan, Wm. H.....	Edgar Springs.. ..	Book-keeper's course.
Coffey, John.....	Rolla.....	Preparatory “
Collier, D. B.....	Licking.....	“ “
Chamberlin, S. Q.....	Phelps county.....	“ “
Chandler, Mary.....	Rolla.....	Drawing “
Chase, J. Frank.....	Neosho.....	Mine engineering.
Darden, Ida H.....	Rolla.....	Preparatory course.
Dean, Bettie.....	“ .....	“ “
Demuth, J. V.....	Lebanon.....	Civil engineering.
DeBauernfeind, Wm.....	Rolla.....	Book-keeper's course.
Davey, Paul H.....	Carthage.....	Mine engineering.
Douthat, Claude D.....	Rolla.....	Preparatory course.
Dickerson, A. H.....	“ .....	Book-keeper's course.

<i>Names.</i>	<i>Residences.</i>	<i>Courses of Study.</i>
Dennis, Helen.....	Rolla.....	Preparatory course.
Dyas, David L.....	“ .....	“ “
Ellis, Chas. E.....	St. Louis.....	“ “
Flint, Angie L.....	Rolla.....	“ “
Flint, Susie C.....	“ .....	Preparatory and drawing.
French, Wm. B.....	Phelps county.....	Book-keeper's course.
Fulcher, Jas. E.....	High Grove.....	“ “
Gallaher, P. C.....	Rolla.....	Mine engineering.
Gift, John C.....	Phelps county.....	Preparatory course.
Gibb, Frank W.....	Little Rock, Ark. ....	Mine engineering.
Green, Jas. C.....	Cuba.....	Preparatory and drawing.
Green, Jas. S.....	West Plains.....	Book-keeper's Course.
Guild, Walter C.....	Rolla.....	“ “
Grubb, Wm. B.....	Clinton Mills.....	“ “
Hall, Alice.....	Rolla. ....	Preparatory “
Haley, Martin J.....	Beaver Valley.....	“ “
Hiltsbrand, A. M.....	High Grove.....	Normal “
Hume, Lizzie.....	Rolla.. .....	Preparatory “
Johnson, U. H.....	Foucher a Renault....	Normal “
Kelsey, Wm. C.....	New Boston.....	Mine Engineering.
Lane, Thomas E.....	Phelps county.....	Book-keeper's Course.
Lancy, Jas. A.....	“ “ .....	Preparatory “
Leathers, Reber.....	Rolla.....	“ “
Liversay, Amanda.....	“ .....	Book-keeper's “
Love, T. E.....	“ .....	Preparatory “
Mautz, Frank.....	Terre Haute, Indiana..	“ “
Maupin, Hattie.....	Rolla .....	“ “
McDonald, A. ....	St. James.....	Normal “
Mell, Sedalia.....	Rolla.....	Preparatory “
Merchant, Edith.....	“ .....	“ “
Millard, Thomas.....	“ .....	“ “
Minger, H. E.....	“ .....	“ “
Mussey, W. R.....	St. Louis.....	Book-keeper's “
Neustaedter, A.....	“ .....	Mine Engineering.
Nichol, Robert.....	Licking.. .....	Analytical Chemistry.
O'Brien, Mary A.....	Rolla.....	Preparatory Course.
Orchard, Minnie.....	“ .....	“ “
Painter, Wm. R.....	Carrollton.....	Mine Engineering.
Patterson, Charles L.....	Maryville.....	Preparatory Course.
Peck, Anna.....	Pacific.....	Book-keeper's “
Peck, James.....	“ .....	Preparatory “
Pillman, J. H.....	Rolla.....	“ “
Robertson, F. T.....	Carrollton.....	Analytical Chemistry and Met.
Ross, Beauregard.....	Houston.....	Mine Engineering.
Rowe, Nannie.....	Rolla.. .....	Preparatory Course.
Salts, Wm. J.....	St. James.....	Normal “
Schwarz, H. H.....	Pacific.....	Mine Engineering.
Slammer, Emma.....	Rolla.....	Preparatory Course.
Slammer, Elmer.....	“ .....	“ “
Smith, L. X.....	“ .....	Civil Engineering.

<i>Names.</i>	<i>Residences.</i>	<i>Courses of Study.</i>
Smith, E. R.....	Steelville.....	Mine Course.
Smith, Mary.....	Rolla.....	Preparatory Course.
Strain, Maggie.....	“.....	“ “
Strine, John H.....	Phelps county.....	Normal Course.
Strine, David S.....	“ “.....	Book-keeper's Course.
Sherrill, J. S.....	Licking.....	Preparatory “
Springfield, Mary.....	Denver City, Col.....	Normal “
Summers, E. B.....	.....	Mine Engineering.
Steffins, Henry C.....	Houston.....	Book-keeper's Course.
Stiff, Lelia B.....	Milburn, Ky.....	Normal
Summerfield, L.....	Rolla.....	Preparatory “
Strobach, Oscar.....	“.....	“ “
Taylor, George.....	“.....	“ “
Tipton, Samuel.....	“.....	“ “
Van Derander H.....	Williamsburg, Pa.....	Civil Engineering.
Wash, Jas. A.....	St. James.....	“ “
Watkins, Lizzie.....	Rolla.....	Preparatory Course.
Webster, Frank.....	“.....	“ “
Wheeler, Arthur.....	Edwardsville, Ill.....	“ “
Whitaker, A. F.....	Iberia.....	Surveyor's “
Whitaker, W. P.....	“.....	Preparatory “
Wilson, Dora E.....	Rolla.....	Normal “
Wilson, Carrie B.....	“.....	“ “
Wilson, Frank W.....	“.....	Preparatory “
Wishon, W. W.....	“.....	Mine Engineering.

## SUMMARIES.

## A. SCHOOLS.

1. *Academic Schools.*

## a. Science.

1. Physics.....	130
2. Chemistry.....	131
3. Natural History.....	253
4. Mathematics and Astronomy.....	435
5. Metaphysics.....	52

## b. Language.

1. Hebrew and Semitic Literature.....	18
2. Greek.....	97
3. Latin.....	254
4. Modern Continental German, French, Spanish and Italian.....	237
5. English.....	371

2. *Professional Schools.*

1. Agriculture—regular 68, irregular 32.....	100
2. Normal.....	82
3. Law.....	50
4. Medicine.....	40
5. Mining School at Rolla.....	96
6. Engineering—regular 12, irregular 29.....	41
7. Military Science and Tactics.....	51
8. Art and Drawing.....	197
9. Commercial.....	93

## B. COUNTIES.

COUNTIES.	University.....	Min. School.....	COUNTIES.	University.....	Min. School.....
Adair.....	1	.....	Linn.....	5	1
Andrew.....	2	.....	Livingston.....	1	.....
Atchison.....	2	.....	Macon.....	3	.....
Audrain.....	10	.....	Madison.....	3	.....
Barry.....	6	.....	Maries.....	2	2
Bates.....	6	.....	Marion.....	4	.....
Bollinger.....	2	.....	McDonald.....	3	.....
*Boone.....	162	.....	Mercer.....	1	.....
Buchanan.....	1	.....	Miller.....	.....	2
Caldwell.....	5	.....	Mississippi.....	2	.....
Callaway.....	9	.....	Monroe.....	7	.....
Cape Girardeau.....	3	.....	Montgomery.....	5	1
Carroll.....	1	2	Morgan.....	3	.....
Cass.....	2	.....	Nodaway.....	6	1
Chariton.....	6	.....	Newton.....	3	1
Christian.....	1	.....	Osage.....	1	.....
Clay.....	4	.....	Pettis.....	8	.....
Clinton.....	11	.....	Phelps.....	.....	59
Cole.....	5	.....	Pike.....	7	.....
Cooper.....	8	.....	Platte.....	7	.....
Crawford.....	.....	1	Ralls.....	11	.....
Daviess.....	4	.....	Randolph.....	15	.....
DeKalb.....	4	.....	Ray.....	5	.....
Dent.....	.....	2	Saline.....	22	.....
Franklin.....	5	4	Schuyler.....	2	.....
Gasconade.....	4	.....	Scotland.....	2	.....
Gentry.....	7	.....	Scott.....	3	.....
Grundy.....	2	.....	Shelby.....	1	.....
Harrison.....	3	.....	St. Charles.....	2	.....
Henry.....	5	.....	St. Clair.....	2	.....
Holt.....	14	.....	St. Louis county.....	7	1
Howard.....	5	.....	St. Louis city.....	1	3
Howell.....	.....	1	Stoddard.....	1	.....
Iron.....	2	.....	Texas.....	.....	5
Jackson.....	11	.....	Vernon.....	1	.....
Jasper.....	.....	1	Warren.....	1	.....
Johnson.....	6	.....	Washington.....	1	1
Knox.....	5	.....	Wayne.....	1	.....
Laclede.....	2	1	Total students from Mo.....	504	89
Lafayette.....	16	.....	Total counties.....	.....	81
Lawrence.....	7	.....			
Lewis.....	2	.....			
Lincoln.....	4	.....			

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

## C. STATES.

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.



STATES.		University .....	Min. School.....
Alabama.....	2	.....	
Arkansas.....	2	1	
Colorado.....	1	1	
Georgia.....	1	.....	
Germany.....	4	.....	
Illinois.....	11	1	
Indiana.....	1	.....	
Iowa.....	2	.....	
Kansas.....	4	1	
Kentucky.....	3	1	
Louisiana.....	1	.....	
Minnesota.....	1	.....	
Montana.....	3	.....	
Mississippi.....	2	.....	
Missouri (81 counties).....	504	89	
Nebraska.....	2	.....	
New York.....	2	.....	
Ohio.....	1	.....	
Pennsylvania.....	.....	1	
Texas.....	7	.....	
Utah.....	1	.....	
Virginia.....	2	.....	
West Virginia.....	1	.....	
Total.....	558	96	
Total (23 States).....	.....	654	

COMPARATIVE VIEWS.—ATTENDANCE.

	1874-5	1875-6	1876-7	1877-8.		1878-9.		1879-80.		1880-1.
				Univer- sity.	Normal Inst.	Univer- sity.	Normal Inst.	Univer- sity.	Normal Inst.	
At Columbia.										
Males.....	342	279	350	355	54	371	43	405	} 41	465
Females.....	54	42	49	63	38	72	36	79		93
	396	321	399							553
At Rolla.										
Males.....	73	54	43	25		42		49		71
Females.....	28	16	16	18		29		22		25
	101	70	64	418	43	92*	443	71	79	96
Totals.....	497†	391	463	553‡		593§		596		654

\*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.

||6 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 1881 inclusive.  
Also the Students and Graduates of the Medical Department of the University  
from 1845 to 1856.

YEARS.	No. of students at Columbia....	Academic Graduates			Students at Rolla.....
		A. B.	S. B.	Ph. B.	
1843 .....	78	2			.....
1844 .....	80	4			.....
1845 .....	97	3			.....
1846 .....	108	7			.....
1847 .....	95	11			.....
1848 .....	81	6			.....
1849 .....	88	12			.....
1850 .....	80	6			.....
1851 .....	126	8			.....
1852 .....	143	6			.....
1853 .....	181	14			.....
*1854 .....	10	10			.....
1855 .....	129	16			.....
1856 .....	112	13			.....
1857 .....	171	12			.....
1858 .....	188	9			.....
1859 .....	196	9			.....
*1860 .....	9	9			.....
1861 .....	168	7	2		.....
1862 .....	64	5			.....
1863 } .....	1	1			.....
1864 } .....	2	1			.....
1865 } .....	7	2			.....
1866 .....	104	1	3		.....
1867 .....	87	7	4		.....
1868 .....	129	4	3		.....
1869 .....	144	3	2		.....
1870 .....	204	1	7		.....
1871 .....	217		8		.....
1872 .....	294	3	3	4	.....
1873 .....	407	3	16	1	75
1874 .....	401	5	4		107
1875 .....	396	4	6	2	101
1876 .....	321	2	10		70
1877 .....	399	4	7	1	64
1878 .....	418	3	7	1	43
1879 .....	444	6	3	8	71
1880 .....	484	12	1	3	71
1881 .....	558	†	†	†	96

Number of students from 1863 to 1865, 121.

NOTE.—The following have been the number of graduates with the degree of L. B. in 1876, one; 1877, two, and 1879, one.

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

Number of graduates, A. B., from 1843 to 1860, 157. From 1861 to 1880 graduates, A. B., 80; S. B., 89; from 1872 to 1879 graduates, Ph. B., 17; L. B., 4; N. S., 1.

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

†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.	Graduates.
1846.....		92	29
1847.....		105	33
1848.....		146	40
1849.....		154	43
1850.....		154	36
1851.....		159	38
1852.....		.....	26
1853.....		.....	27
1854.....	During these years the number of students averaged 100 per annum	.....	39
1855.....		.....	32
1856.....		.....	29

GRADUATES OF PROFESSIONAL SCHOOLS.

YEARS.	Normal Department.						Agricultural Department.			Law.....	Medicine	Engineer'g	Mines and Metallurgy.		Total Number Graduates each year.....	
	4 y'rs		6 years.		2 years.		2 years.		6 y'rs	2 y'rs	2 y'rs	6 years		3 years		
	N. G.	D. B.	Pe. P.	N. D.	Pe. P.	D. Ag.	D. H.	Ag. B.	L. L. B.	M. D.	C. E.	T. E.	C. E.	M. E.		
1869....	4														4	
1870....	3														3	
1871....	4														4	
1872....	6														6	
1873....		4							6						15	
1874....		5			7			26	13	5			2	3	59	
1875....		4			18			8	9	6			1	1	47	
1876....		1			7			1	9	13			2	3	36	
1877....			1		6			7	14	5			1	2	36	
1878....			4		15				20	8			2	2	53	
1879....			9		9			5	13	6	4	4	1	1	52	
1880....			6		8				14	9	2	3		2	44	
1881....			*		*				28	*	*	*			.....	
	17	14	20	32	38	15	47	5	126	52	8	7	9	12	.....	

\*See programme of the commencement exercises.

## Closing Exercises.

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1881.

**THURSDAY EVENING, March 31.**—Commencement of Law School. Annual Address before the law Class, by Hon. John B. Henderson, of St. Louis.

**SATURDAY, May 14.**—Examination of all Students on Fundamental Branches.

**TUESDAY, May 24 to WEDNESDAY, June 1.**—Public Examinations of all Classes.

**THURSDAY Evening, May 26.**—Commencement of Normal School. Address by J. Baldwin, President of Kirksville Normal School; also Valedictory of the Class by F. S. Lonsdale.

**SATURDAY EVENING, May 28**—Commencement of Engineering School. Address by Capt. O. H. Ernst, of the U. S. A. Engineer Corps; also Valedictory of the Class by Frank E. Guild.

**SUNDAY, May 29, at 3 P. M.**—Baccalaureate Discourse by Rev. E. R. Hendrix, A. M., D. D., President of Central College, Fayette, Mo.

**MONDAY EVENING, May 30.**—Commencement of Medical School. Address by W. B. Adams, M. D., of Montgomery City, Mo.; also Valedictory of the class by M. E. Doolittle, New York.

**TUESDAY EVENING, May 31.**—Annual Address before the Literary Societies, by John A. Broadus, A. M., D. D., of Louisville, Ky.

**WEDNESDAY EVENING, June 1.**—Oration before the Alumni Association, by Oliver Lee Houts, S. M., Esq., (Class '70), of Warrensburg, Mo.

**THURSDAY, June 2.**—University Commencement.

# The Schools of the University.

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## I. THE ACADEMIC SCHOOLS.

### A. SCIENCE.

- I—1. Physics.
- II—2. Chemistry.
- III—3. Natural History—*a*, Mineralogy; *b*, Botany; *c*, Zoölogy; *d*, Geology and Physical Geography.
- IV—4. Mathematics—Astronomy.
- V—5. Metaphysics.

### B. LANGUAGE.

- VI—1. English.
- VII—2. Modern Continental German, French, Spanish, etc.
- VIII—3. Latin.
- IX—4. Greek.
- X—5. Semitic.

## II. THE PROFESSIONAL SCHOOLS.

- XI—1. Agriculture.
- XII—2. Pedagogics.
- XIII—3. Law.
- XIV—4. Medicine.
- XV—5. Mining and Metallurgy.
- XVI—6. Engineering.
- XVII—7. Military Science and Tactics.
- XVIII—8. Art.
- XIX—9. Commercial.

## I. SCHOOL OF PHYSICS.

JOS. G. NORWOOD, LL. D., *Emeritus Professor.*

BENJ. F. THOMAS, PH. D., *Professor.*

## REPORT.

UNIVERSITY OF THE STATE OF MISSOURI.

S. S. LAWS, LL. D., *President :*

DEAR SIR: Three classes have received instruction in Physics during the current year. The Sophomore Class, with such other applicants as had completed Geometry, were taken through a course embracing Elementary Mechanics, Sound, Heat, Light, Magnetism and Electricity, the course extending throughout the year. Deschanel's Natural Philosophy was made the basis of instruction.

The Medical students, and irregular students unable to pursue the more advanced course profitably, were taught in Norton's elements of Physics during the first Semester.

The Juniors and Seniors of the Normal Department, after pursuing a brief course in general physics during the first half of the second semester, spent the balance of the semester in studying simple methods of teaching physics, their work including the devising, construction and use of simple and cheap apparatus for the illustration of the subject.

The number of students enrolled in the first class was 62, in the second 49, and in the third 23.

A number of valuable additions to the apparatus of this department have been made during the year. The most noteworthy pieces are the following: A set of ten tuning forks on their resonant cases, made by Rudolph Koenig, of Paris, and of historic as well as practical value, as they are the ones with which Professor Mayer, of the Steven's Institute, has done some of the best original work; an oxyhydrogen lantern of the best construction, having vertical attachment for projection of liquids, etc., gas microscope attachment and attachment for projections in polarized light, with sets of objects, etc.; a Shepard screw cutting engine lathe and tools; a siren, sonometer, organ pipes and other apparatus in sound; a telephone line, with bells, transmitters, etc., complete. The interest of friends of the department has made available a full set of Crooke's high vacua tubes," and a spectrometer made for Professor Mayer, from designs by himself and Professor Rood, of Columbia College, New York, the circle graduated by Brunner, of Paris. Several pieces of apparatus have been made in the Laboratory, among them a Wheatstone bridge, a Helmholtz differential tangent galvanometer and a divided meter bridge. Much more is still needed. Five thousand dollars ought to be put in apparatus at once, that the University may hold the position it claims among the institutions of the land.

Very respectfully,

BENJ. F. THOMAS.

## II. SCHOOL OF CHEMISTRY.

PROFESSOR SCHWEITZER.

*Requirements for Admission:* English Grammar, Arithmetic, Geography, U. S. History and the elements of physics.

Instruction in this school is given in the following distinct courses of study:

### 1. PHENOMENAL CHEMISTRY.

This is an elementary course on chemistry, following some suitable text-book, and consists mainly in recitations, illustrated, as far as practicable, by experiments and diagrams. The writing of reactions, calculating of quantities by weight and volume, determining of changes in the volume of gases through changes in temperature and pressure, and the establishing of formulas upon proper physical facts accompany the work throughout. The course is designed to be complete within itself, and while giving the student the facts and formal principles of the science, to serve, at the same time, as an introduction to the study of rational chemistry, taught later. All students of the University, excepting those in law, must complete this course before they can receive a diploma or certificate, or before they can be admitted to other classes in this department—First Semester, daily, from 11-12.

### 2. RATIONAL CHEMISTRY.

The course on rational chemistry is a continuation of the former on a broader basis, and is by lectures, illustrated by experiments and specimens, interspersed with occasional recitations, reviews and discussions; but while that is mainly descriptive of the phenomena presented to our senses, this is inductive, leading to their explanation through modern philosophical theory and speculation. Toward the middle of the semester select topics from the domain of organic and applied chemistry are discussed, selections being made from the following list:

1. *Food and Drink*—Cereals, starch, bread, meat, sugar, preservation of food, water, milk, tea, coffee, fermentation of wine, beer, spirits, vinegar, tobacco, etc.
2. *Oils, Fats, Soaps, Glycerine.*
3. *Illumination*—Candles, oils and lamps, petroleum, gas and its products.
4. *Fuel* and its application.
5. *Disinfectants and Antiseptics*—Preservation of wood, etc.
6. *Limes, Mortars, Cements, etc.*
7. *Glass, Porcelain, Pottery, etc.*
8. *Chemical Manufactures.*

The collection of specimens to illustrate these lectures is yearly increasing, and embraces a complete set of *Knapp's Technological Diagrams*, which greatly facilitate instruction in this department. All students working for an academic degree, as also those in *Agriculture, Medicine and Civil Engineering*, must complete this course.—Second Semester, daily, from 11-12.

### 3. DOMESTIC CHEMISTRY.

A course of lectures on domestic chemistry, to be delivered to the students who intend to graduate in the *girls' course in arts*, has been arranged, and will be given the coming year; it is intended to teach the principles of household science, a right understanding of which determines so largely the health, comfort and happiness of the human family, and over which primarily woman is placed to watch and to care. The following topics will present an outline of the work contemplated:

1. AIR: Respiration, vitiated air and ventilation, heating of houses, clothing for protection against cold and against taking cold, infection, contagion, germ theory of disease.

2. WATER: Potable water, hard and soft; impurities in it, such as lead and sewage matters, and their effects upon health and life; mineral waters, pond and sea bathing.

3. FOOD: Composition and general properties, boiling, roasting, baking, pickling, salting canning, etc., food for infants, invalids and persons in sickness, condiments, cooking vessels and the dangers that may result from their use.

4. COSMETICS: Face powders and washes, enamels, hair dyes and restoratives, pomatums, essences, tooth powders, soaps, etc.—First Semester, daily, from 3-4.

### 4. AGRICULTURAL CHEMISTRY.

A course of lectures on agricultural chemistry is delivered to students in *Agriculture*. It embraces a scientific exposition of the function of the plant, including the production, conversion, transportation and deposition of organic matter within its body.

The physiological structure of the green cell is elucidated, and its office, as an apparatus capable of doing chemical work, depending upon light and heat, is made clear. The nitrogenous constituents of the plants are treated in reference to its organs, to the nitrogenous fertilizers, and to the nitrogen of the air, leading to the consideration of the mineral matter or ash, and to the growth of plants, as depending upon the character of the soil. Osmose and endosmose of gases and fluids are illustrated by experiment, and the influence of climatic conditions explained by reference to statistics.

The chemical and physical properties of the soil are fully treated of, by tracing its production from various geological formations through natural agencies, and by improvement through mechanical means and fertilizers of various composition and origin, to its present condition.

The different fertilizers in use, their relative value, and their employment for extensive and intensive cultivation, as a paying investment, are discussed finally.—First Semester, daily, from 10-11.

### 5. TOXICOLOGY.

A special course of lectures and recitations on toxicology, based on Taylor's work on poisons, and lasting about two months, is given to students in medicine.—Second Semester, daily, from 10-11.



## 6. THE LABORATORY.

*The Laboratory*, provided for the use of the students, is situated on the first floor of Science Hall, and is furnished in the most approved style, with working tables, reagents, and apparatus generally, affording to the student all the means which science commands for acquiring a thorough knowledge of analytical chemistry, both qualitative and quantitative, and offering facilities for pursuing investigations in chemistry which are not equaled elsewhere in the State. Ample provision is made for ventilation, a very important item in the construction of a laboratory—between the windows and the working tables of the students, evaporating niches are constructed, through which offensive gases and vapors are carried off, facilitating thereby greatly the purification of the air. The working tables are furnished each, with sink and water, and closet room sufficient to pack away all apparatus used during the day.

Qualitative analysis is taught by lectures and blackboard exercises, and the student is required to repeat, at his table in the laboratory, all experiments described in the manual used; after becoming familiar in this way with acids and bases, simple substances (of the composition of which he is ignorant,) are given to him for identification; thus he proceeds from simple to more complex cases, until he is able to determine the composition of the most complicated and difficult mixtures.

Blow-pipe analysis, as an important branch of analytical chemistry, is taught separately in a special course, and connects with the quantitative assay of gold and silver ores in crucible and muffle furnaces,\* placed in the basement of Science Hall.

When the student, upon written and experimental examination, proves to be sufficiently familiar with qualitative analysis, he passes to the study of quantitative analysis. Lectures and blackboard exercises go here, also, side by side, with laboratory work. The student executes a number of analyses, determining, in the substances handed to him, each constituent by weight; when he has attained the requisite amount of skill to insure accurate results, he is encouraged to execute analyses of a more complex nature, such as of coals, limestones, slags, ores of iron, lead, cobalt, zinc, copper, nickel, pig-iron, technical products, etc.

If, after pursuing this course, the student desires to engage in any special investigation, either scientific or practical, every facility of the *University* and the special attention of the professor will be given him.

The full course in qualitative analysis is required of all students who propose to graduate in *science, agriculture, civil engineering and medicine*, and in a somewhat modified and abbreviated form, including, however, the recognition of simple substances, of all candidates for other academic degrees. The course in blow-piping is given to students in *civil engineering*, fixing their quota of work and the requirements of other students in quantitative analysis, as follows:

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\*To be built during the coming summer.

QUANTITATIVE ANALYSES, TO BE EXECUTED BY STUDENTS IN THE COURSE IN SCIENCE, IN CIVIL ENGINEERING AND IN AGRICULTURE:

Analyses 1-10 are to be executed by students taking the course in *Science* and in *Civil Engineering*, and 1-16 by students taking the course in *Agriculture*. On each analysis the student is required to hand in a written report with the detail of his work and figures.

1. Barium Chloride, (Ba, Cl, H<sub>2</sub>O).
2. Magnesium Sulphate, (MgO, SO<sub>3</sub>, H<sub>2</sub>O).
3. Ammonia-iron-alum, (Fe<sub>2</sub>O<sub>3</sub>, NH<sub>3</sub>, SO<sub>3</sub>, H<sub>2</sub>O).
4. Potassium Chloride, (K, Cl).
5. Silver coin, (Au, Ag, Pb, Cu).
6. Dolomite, (CaO, MgO, CO<sub>2</sub>, SiO<sub>2</sub>Fe<sub>2</sub>O<sub>3</sub>).
7. Specific gravity of a solid, a liquid and a gas.
8. Water (CaO, MgO, SO<sub>3</sub>, Cl, Organic matter).
9. Building stones, analysis and physical tests.
10. Mortars, analysis and physical tests.
11. Sodium Phosphate (Na<sub>2</sub>O, P<sub>2</sub>O<sub>5</sub>, H<sub>2</sub>O).
12. Coal, (Volatile matter, fixed Carbon, Ash, H<sub>2</sub>O, S).
13. Feldspar (SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, K<sub>2</sub>O, Na<sub>2</sub>O).
14. Guano (P<sub>2</sub>O<sub>5</sub>, CaO, MgO, NH<sub>3</sub>).
15. Superphosphate of Lime (P<sub>2</sub>O<sub>5</sub>, soluble and insoluble).
16. Milk (Water, Butter, Caseine, Sugar, Ash).

RULES FOR THE GUIDANCE OF STUDENTS WORKING IN THE LABORATORY.

1. Each student must make a deposit of \$10, 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 per centage 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, when drawing his apparatus for quantitative analysis.
3. No article will be received back, which is not in a sufficiently good condition to be reissued again.
4. Articles may be purchased for cash, at any time.
5. The charge to students for ordinary chemicals has been fixed at the rate of \$3 per month.
6. The Laboratory is open to students daily from 9 A. M. to 5 P. M., Mondays excepted; yet to facilitate the work of instruction, which is necessarily personal and not by classes, it is found necessary to give the first semester to students in quantitative analysis, reserving Tuesday from 2-4 to instruction in blow-piping, and to devote the entire second semester to work in qualitative analysis; any deviation from this plan will be made only in exceptional cases.

TEXT-BOOKS USED IN THIS SCHOOL.

1. Roscoe, Lessons in Elementary Chemistry.
2. Fresenius, Manual of Qualitative and Quantitative Analysis.

3. Appleton, a short course in Qualitative Analysis.
4. Elderhorst, Manual of Qualitative Blow-Pipe Analysis.
5. Ricketts, Notes on Assaying.
6. Taylor, on Poisons.

Suitable hand-books for reference are recommended and accessible to all students.

#### NUMBER OF STUDENTS IN ALL THE CLASSES OF THIS SCHOOL DURING THE SCHOLASTIC YEAR JUST ENDED.

108 Students in Phenomenal Chemistry.

66 Students in Rational Chemistry.

29 Students in Toxicology.

35 Students in Laboratory, of whom (a) 29 in Qualitative Analysis ;  
 ————— (b) 20 in Quantitative Analysis.

238 Students.

Number of individual students admitted to the school, 131.

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### III. SCHOOL OF NATURAL HISTORY.

PROFESSOR SWALLOW.

PROFESSOR TRACY.

PROFESSOR HUSMANN.

This school includes *Geography*, *Botany*, *Entomology*, *Anatomy and Physiology*, *Zöology and Comparative Anatomy*, *Mineralogy*, *Palæontology*, *Geology* and *Physical Geography*.

*Geography*, *Botany* and *Entomology* are taught by Prof. Tracy, and *Anatomy* and *Physiology* by Dr. Laws and Dr. Moss.

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#### ZOOLOGY

Is so taught as to include an elementary course in comparative anatomy, with special reference to the domestic animals—instruction by lectures.

#### MINERALOGY.

The cabinet of minerals is ample to illustrate the most important varieties. Dana's Manuel is used for text-book.

## PALAEOLOGY.

The cabinet furnishes fossils to illustrate the most characteristic species of the Geological Periods. The instruction is by lectures.

## GEOLOGY.

Geology is taught with special reference to the many useful applications in Agriculture, Mining, Architecture and the early History of the Earth.

## PHYSICAL GEOGRAPHY.

Physical Geography is taught at the end of the course, that all the sciences may be more successfully used in explaining the physical condition of the earth. This course also serves as a review of Natural History, by its uses and applications in Physical Geography. In this course is included so much of Anthropology as relates to the Pre-historic man and the origin of the races and their characteristics and distribution.

## DONATIONS TO THE CABINET.

Mr. L. A. Waters, a very valuable flint plow-point of the ancient mound builders.

Mr. F. M. Ferguson, a rare lizard from California.

Mr. Ed. W. Stephens, a lizard from Texas.

Mr. Thomas Sampson, a fine specimen of petrified wood.

Mr. C. C. Branham, good specimens of stibbite and gold from Utah.

Miss Narcissa C. Bradford, specimens of quartz and stalactite from Eureka Springs, Arkansas.

Mr. L. Slaughter, a very unique natural imitation of the human foot in limestone from Ray county.

Mr. Lawson Stewart, antiquarian flint implements and minerals.

## CLASSES :

Zoology (Prof. Swallow).....	87	
Anatomy and Physiology (Dr. Moss).....	69	Young gentlemen.
Anatomy and Physiology (Dr. Laws).....	25	Young ladies.
Mineralogy and Palæontology (Prof. Swallow).....	34	
Geology and Physical Geography (Prof. Swallow).....	33	

G. C. SWALLOW, *Professor.*

## BOTANY AND ENTOMOLOGY.

## PROFESSOR TRACY.

*Botany.*—Instruction in botany is given during two semesters. The first semester is devoted to the study of structural and systematic botany; instruction being given by both text-books and lectures, each being illustrated by living plants, which give to the student a much more definite understanding of plant structure and growth than would be possible without such assistance. The green-house furnishes abundant material for such illustrations at all seasons of the year, thus familiarizing the student

with the operations of nature in the very beginning of his study; and on this account alone, its value to the classes in botany is incalculable. Students need not wait a tardy spring in order to have before their eyes the forms for which they are learning names, and the season of flowers finds them ready to do practical work in the field at once.

In addition to the assistance derived from the green-house, the botanical lecture room is provided with a large number of drawings and paintings, illustrative of plant structure. The herbarium collected by the State Geological Survey is placed in the University, and additions are made to it constantly. During the past year, Professor Swallow generously donated to the University his entire collection of plants which is of great value, as a large proportion of the species are not indigenous to this State. The entire herbarium is being arranged and catalogued as rapidly as possible.

During this semester, students become sufficiently advanced to analyze and name plants without assistance. During the second half of the semester, the subject of Economic Botany is taken up, and the student is made familiar with the history, cultivation and products of the more important useful plants. The instruction is given by lectures, and an outline of the processes of the manufacture of vegetable products used for food, drink, clothing, dyes, oils, spices, etc., is presented. The collection of economic plants in the University green-house furnishes valuable means of illustration, while the museum contains many wood sections, fibres, resins and other vegetable products.

#### 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.

#### Classes:

Number of Students in Botany.....	120
“ “ Economic Botany.....	31
“ “ Agriculture.....	11
“ “ Geography.....	83
	<hr/>
	245
Number twice counted.....	65
	<hr/>
Total number of individuals.....	180

S. M. TRACY,

Professor of Botany and Entomology.

## IV. SCHOOL OF MATHEMATICS AND ASTRONOMY.

PROFESSOR FICKLIN.

PROFESSOR CAUTHORN, ADJUNCT.

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.

Special attention is called to the requirements in the pure mathematics for admission to the Freshman Class. Imperfect preparation in Algebra is so common as to compel the conviction that sufficient attention is not given to this branch of mathematics in many of the preparatory schools of the State. Its importance cannot well be over estimated.

Students in astronomy, after mastering the theory of the subject in the recitation room, are required to go into the Observatory and apply their theories to practice in the determination of latitude, longitude, azimuth, time of day, variation of the magnetic needle, etc.

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

## FIRST YEAR.

*First Semester.*—Arithmetic, beginning at decimal fractions.

*Second Semester.*—Arithmetic and book-keeping.

## SECOND YEAR.

*First Semester.*—Elementary algebra.

*Second Semester.*—Elementary algebra and plane geometry.

## THIRD YEAR.

*First Semester.*—Plane trigonometry and geometry of space.

*Second Semester.*—Spherical trigonometry and spherical astronomy.

## FOURTH YEAR.

*First Semester*—Higher algebra.

*Second Semester*—Analytical geometry.

## FIFTH YEAR.

*First Semester*.—Calculus.

## SIXTH YEAR.

*First Semester*.—Astronomy (completed.)

## THE LAWS' OBSERVATORY.

## PERSONNEL:

*Director*, JOSEPH FICKLIN.

*Assistants*, THOMAS J. LOWRY and WM. A. CAUTHORN.

## GEOGRAPHICAL POSITION:

Longitude from Washington, 1 h. 1 m. 6 s. west.

Latitude, 38 deg. 56 min. north.

## DESCRIPTION OF THE BUILDING.

During February and March, 1880, the old observatory building, which stood a few feet west of the main University edifice, was moved and enlarged. It now stands on the beautiful eminence in the Campus near the Chalybeate Spring. The meridian line of each pier now passes between the University Building and the President's Mansion. In this position a good horizon is secured. In the old position the horizon was obstructed on the north by the Scientific Building, and on the east by the University Building.

The old dome was found to be too small for the Equatorial recently purchased, and a brick addition was made at the east end for the accommodation of this instrument. The whole building is sixty-three feet long, from east to west, and fronts east.

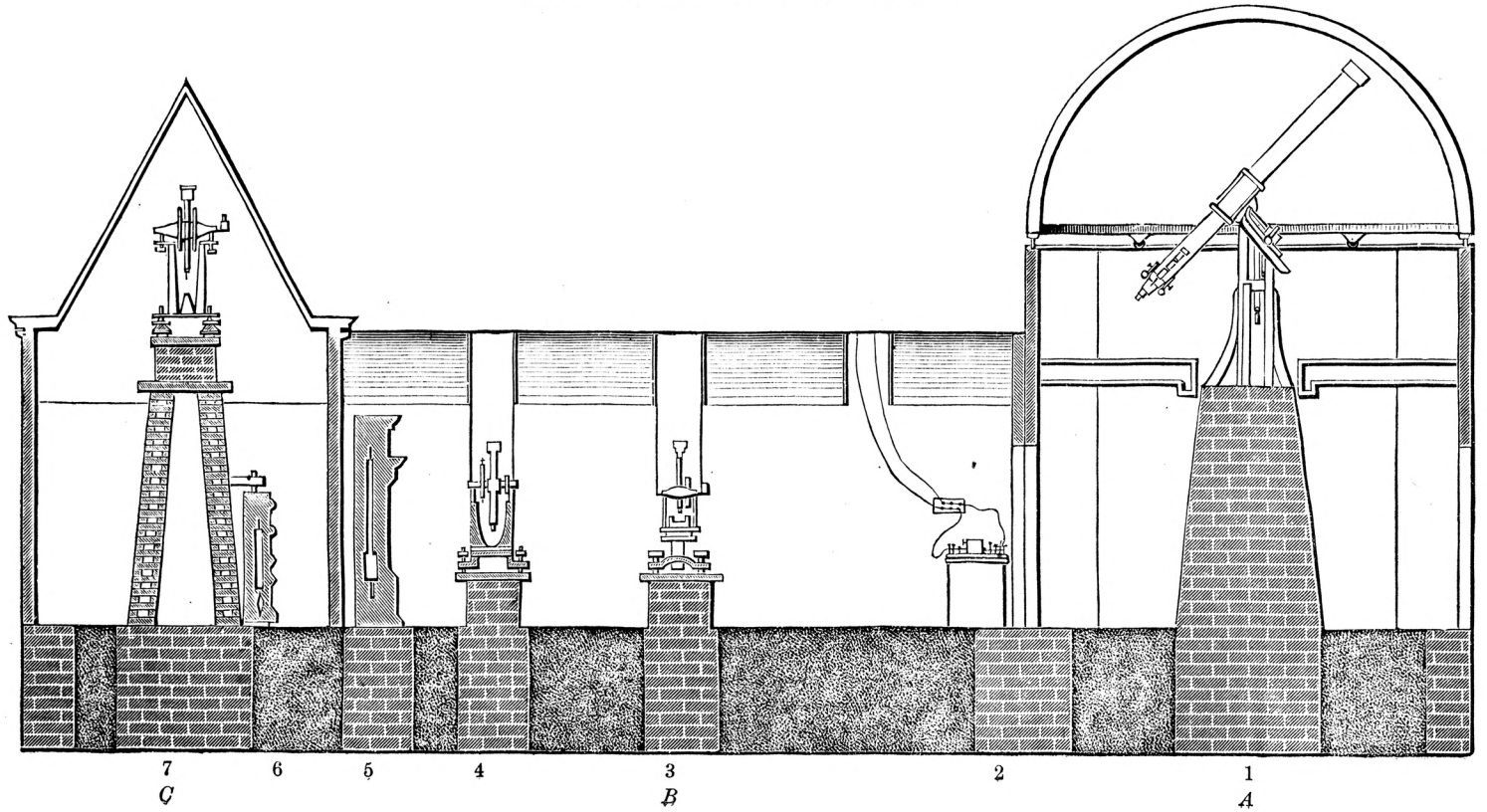
The Equatorial room (*A*) is in the form of a regular octagonal prism surmounted by a hemispherical dome. Its width on the inside is 18 feet; the ceiling of the lower part is 10½ feet high, and the top of the dome is 14¾ feet above the second floor.

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 six feet square at the base. That part of the pier which is below the first floor is in the form of a square

PLATE II. THE NEW OBSERVATORY.





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 cop-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  $13\frac{1}{2}$  feet long from east to west,  $13\frac{1}{2}$  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 for the Equatorial.

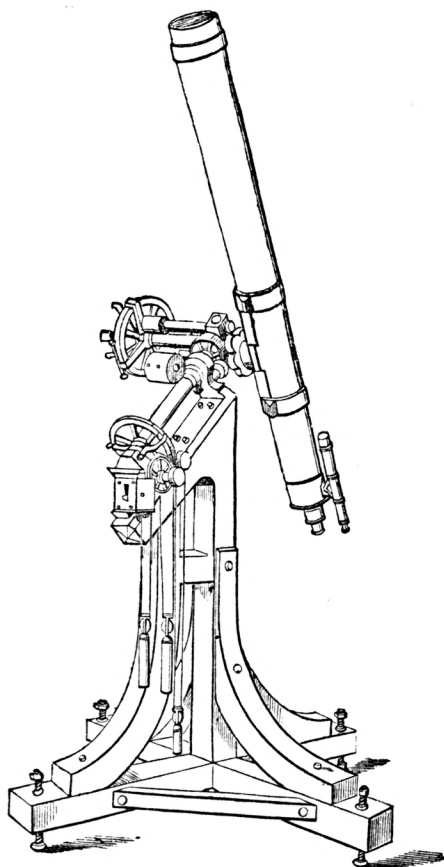
The Transit room (*B*) is situated between the Equatorial room and the Alt-azimuth room. It is  $28\frac{1}{2}$  feet long from east to west,  $13\frac{1}{2}$  feet wide, and 8 feet high. This room contains three piers, constructed as those already described, for the support of the Transit Instrument, the Transit Theodolite, and the Sidereal Clock. 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.

All these rooms are now lighted by gas.

#### 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 *Mecurial Horizon*, a *Sidereal Clock* and a *Solar Clock*.

## THE TELESCOPE.



This cut is taken, by consent of the Publishers, Messrs. Harper & Brothers, of New York, from Loomis' 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.

*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 seven 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  $1\frac{7}{8}$  inches and a focal length of  $17\frac{1}{2}$  inches. The reading microscopes were made by R. B. Gans, of Boone county, Mo. The Telescope is furnished with adjustable clock-work, by which any heavenly body may be kept apparently at rest in the field of view.

For convenience of observation, an observing chair, with an adjustable seat, is made to run upon an iron track around the Telescope, so that the observer can easily keep his eye at the proper distance from the eye-piece.

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, Shelbyville, 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:

"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 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.' The 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 occurred on the 7th of August of that year.

In January, 1880, our four-inch refractor and five hundred dollars were given in exchange for this Telescope. It was received in Columbia January 20, and mounted March 13, 1880.

*The Meridian Circle* (4) was made by Brunner of Paris. The object glass has a clear aperture of  $2\frac{1}{5}$  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 Alt-Azimuth Instrument* (7) was made by E. & G. W. Blunt of New York. The object glass has a clear aperture of  $2\frac{3}{8}$  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 eye-pieces, a coll-

mating eye-piece and sun-shades. 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  $1\frac{3}{8}$  inches, and a focal length of 18 inches. The horizontal circle is  $10\frac{1}{2}$  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 Sidereal Clock* (5), which was made by Gregg & Rupp, of New York, has a mercurial pendulum.

*The Solar Clock* (6) was made by Riggs, of Philadelphia.

The sidereal clock stands upon an isolated brick pier in the southwest corner of the transit room. The solar clock hangs on the pier which supports the alt-azimuth instrument.

The Observatory is connected by telegraph (2), through the lines of the Western Union Telegraph Company, with nearly every other observatory in the country, thus furnishing the requisite 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, has given to the University more than two thousand dollars in order to procure the Telescope and put it in complete working order, and to move and enlarge the Observatory Building.

In view of this liberality on the part of Dr. Laws, the Board of Curators have decided that the Observatory shall hereafter be known as "THE LAWS' OBSERVATORY," and the Telescope as "THE LAWS' TELESCOPE." They have also established a prize in the form of a gold medal, to be known as "THE S. S. LAWS' ASTRONOMICAL MEDAL," to be awarded annually to that student who shall stand highest in Theoretical and Practical Astronomy.

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## REPORT.

S. S. LAWS, LL. D., *President* :

DEAR SIR :—I submit the following report of the Department of Mathematics and Astronomy, for the year ending June 2, 1881 :

## CLASS WORK.

Number of students in Higher Algebra.....	45
Number of students in Plane Geometry.....	111
Number of students in Solid Geometry.....	60
Number of students in Preparatory Algebra.....	119
Number of students in Plane Trigonometry.....	73
Number of students in Spherical Trigonometry.....	43
Number of students in Spherical Astronomy.....	49
Number of students in Analytical Geometry.....	35
Number of students in Calculus.....	14
Number of students in Spherical and Physical Astronomy.....	12
Number of students in Arithmetic.....	181
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Total number of students in the Department.....	435

The work of giving instruction to these classes has been done by myself and my assistant, Prof. Cauthorn, except one division of the class in Arithmetic, which has recited to Miss Bibb.

## DONATIONS.

Since my last report this Department has received two valuable gifts: (1.) Five of Gundlach's improved Periscopic eye-pieces with a corresponding draw-tube have been purchased by Dr. Laws, and presented by him to the Observatory. These eye-pieces have a very wide field of view, and the lower powers are very useful in searching for comets and for observing nebulae and clusters of stars.

(2.) Prof. R. A. Proctor, one of England's great astronomers, recently presented to this Department a set of valuable astronomical paintings which were prepared in England, under his direction, to illustrate his course of lectures.

## WORK DONE IN THE OBSERVATORY.

Much of my time during last vacation was occupied in adjusting the Telescope.

During the present session, in addition to the usual drill given to students of Astronomy in the use of the instruments of the Observatory, and the accommodation of hundreds of visitors, systematic observations extending through a period of several weeks were made on Hartwig's comet and Swift's comet. I wish here to acknowledge my indebtedness to Prof. B. F. Thomas, of the Department of Physics, for valuable assistance in making these observations on comets.

Numerous observations for time have also been made.

I have made arrangements with Prof. Spencer F. Baird, Secretary of the Smithsonian Institution, to send to the Observatory telegraphic announcements of astronomical discoveries. Five such telegrams have been received this session. The last was the discovery of the 220th planetoid by Palisa, of Berlin; the others were discoveries of comets.

My time and energies have been so heavily taxed by class work, that I have not been able to do as much work in the Observatory as I wished to do.

Very respectfully and truly yours,

JOSEPH FICKLIN,

## V. SCHOOL OF METAPHYSICS.

PROFESSOR LAWS.

*Psychology*—Bain, Hamilton's Metaphysics, 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.*Ontology* (Natural Theology)—Paley, Buchanan, Chadbourne, Lectures.*The History of Philosophy*—Schwegler, Lectures.

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

*Aesthetics 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.

## VI. SCHOOL OF ENGLISH.

PROFESSOR McANALLY.

COURSE OF STUDY.

FIRST YEAR.

*First Semester*—Language Lessons, Dictations and Composition (Swinton, Harvey).*Second Semester*—English Grammar (Harvey), Blackboard Exercises, Dictations, Composition, Word Studies.

SECOND YEAR.

*First Semester*—Analysis (Green), Rhetoricals, Forms of English Composition, Notes on the Origin of Language, Word Studies from Trench.*Second Semester*—Analysis Continued and Rhetoric (Hart), Study of Synonyms (Crabbe), Composition and Themes, Trench's Lectures.

THIRD YEAR.

*First Semester*.—U. S. History (Swinton). References: 1. Settlement (Bancroft, Prescott). 2. Revolution (Bancroft, Hildreth). 3. Political Development (Johnstone, Statesman's Manual, Benton's Thirty Years).*Second Semester*.—Rhetoric concluded, Historical Essays, Elocution, Lectures and Note-taking, History of English. References: "English Past and Present" (Trench), "Select Glossary" (Trench), "Study of Language" (March), "Principles of Rhetoric" (Whately), "Kame's Elements of Criticism," "Blair's Lectures."

## FOURTH YEAR.

*First Semester.*—English History (Smith's Hume). References: Celtic and Roman Periods (Knight's Pictorial History, Hume, Smollett), Anglo-Saxon Period (Turner), Norman Period (Guizot's History of Civilization, Taine's History of English Literature), Constitutional Period (Hallam, Macaulay, Collier, Lodge, Agnes Strickland).

*Second Semester.*—Political History and Science (Townsend's Analysis of U. S. Constitution). References: Johnstone's Manual, Statesman's Manual, Blackstone, Kent.

## FIFTH YEAR.

*First Semester.*—English Literature (Collier). References: Anglo-Saxon (Marsh, March, Corson's Handbook), Middle English (Hallam, March, Craik), Modern English (Taine, Mill, Craik, Hallam).

General Readings: Hudson's "Classical Reader," "Choice Specimens of English Literature."

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—the first two books read and criticised in class. 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, his 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 twelve public lectures on the origin and history of English literature.

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

Lectures, Note-taking and Essays.

## SIXTH YEAR.

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

Complete Resumé of English course.

*Second Semester.*—General Reviews and Orations.

## NOTICES.

All new students 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 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.

## REPORT.

DR. S. S. LAWS, *President Missouri State University:*

SIR:—The statistical report of the classes of the English Department during the year 1880-81 is as follows :

CLASSES.	1st Semester.	2d Semester.	Total.
English Grammar (Mrs. Carr) .....	46	.....	46
English Grammar .....	97	.....	97
English Analysis (Mrs. Carr) .....	66	.....	66
United States History .....	79	.....	79
English History .....	56	.....	56
English and American Literature .....	46	.....	46
Political Economy.....	.....	47	47
Political Science.....	.....	88	88
Analysis and Rhetoric.....	.....	81	81
Rhetoric (Mrs. Carr).....	.....	110	110
Anglo Saxon.....	.....	8	8
Totals.....	390	334	724

The system of entrance examinations, inaugurated in the English Department, produced the happiest results in placing new students in the classes for which they were best prepared, and, while filling to overflowing the classes of the first three years, has already borne fruit in securing a much greater share of attention to the English preparation necessary for entrance on the advanced parts of the various courses.

It is believed that the entrance examinations, together with the Grammar examinations at the end of each year, form a feature of our work peculiarly worthy of notice and well adapted to the needs of the youth of Missouri.

It is highly important that the English Department should be better provided with works on English Literature, on Political Economy, English and American History, both general and special, and on the interpretation of the British and United States systems of government and laws.

Maps and charts of various kinds are also greatly needed, in fact are indispensable to the Department as it should be conducted; and an appropriation can be made with profit for the purpose of providing these books and appliances.

Respectfully,

D. R. McANALLY, Jr.,

Prof. English Literature.



## VII. SCHOOL OF MODERN LANGUAGES.

PROFESSOR BLACKWELL.

From the Report of the Curators on the organization of the University :

“ Not rejecting the culture of the ancient languages, we surely cannot pass by or neglect that of the principal European languages, and especially the German and French. Ample provision is now made for the study of these languages, with the literature belonging to them, in most of the principal schools in the country of every kind. They are made a requirement, not only in the colleges of letters, but equally so in the scientific and technical schools. In the earlier part of the present century, the modern languages were not considered necessary for the professional man, and if any provision whatever was made for them, it was accidental and temporary, and never from the permanent fund of the institution. But the changed relations of the world have produced the change referred to in our various institutions of learning, and Harvard, Cornell, Michigan, etc., now have several permanent teachers of, these languages.

“ The requirement should be imperative upon graduates of both the Scientific Department and that of Arts, that they should be able to read the German and French; and that in the elective courses to be provided, these languages be made optional for longer courses. The committee so recommended.”

The subjects chiefly taught in this Department are German and French. German is commenced at the beginning of the first semester, and French at the beginning of the second.

The object of the Professor 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 modern German. In addition, the student is drilled, by almost daily conversations, to understand the language when spoken, and encouraged to attempt replies.

## 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—Las Lecturas de Knapp.

## ITALIAN—ONE-HALF SEMESTER.

Italian grammar—Select readings in Italian authors.

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 REPORT.

PRESIDENT S. S. LAWS, LL. D.:

SIR: I have the honor to submit to you the following report of the Department of Modern Languages for the college year 1880-81. I give the total individual numbers who have entered my classes during the year without attempting any classification by semesters:

No. entered in German.....	120
“ French.....	95
“ Spanish.....	22
“ Italian.....	* 13
Total in Department throughout year.....	250

At my suggestion the Spanish and Italian languages have been added to the course in letters, tenth semester. The whole number in this department has increased from 179 last year to 237 separate names this year. The work has been done with better promptness than ever before, notwithstanding the large classes. In the event of greater increase I trust the Board of Curators will supply assistance to this department.

Respectfully, your obedient servant,

J. S. BLACKWELL,

Professor of Modern Languages.

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\*The students of Italian were all in the class in Spanish.

## VIII. SCHOOL OF LATIN LANGUAGE AND LITERATURE.

PROFESSOR FISHER.

FIRST YEAR.

Harkness' introductory Latin book, 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 (Chase and Stuart), Cicero's Orations (Harkness), composition to lesson 71, prosody and scanning, classical geography.

FRESHMAN—THIRD YEAR.

*First Semester.*—Cicero, (pro Archia), Lincoln's Livy, composition to lesson 89, mythology.*Second Semester.*—Anthon's Horace (odes and epodes), Cicero (De Senectute), composition to lesson 104, prosody, Latin at sight, antiquities.

SOPHOMORE—FOURTH YEAR.

*First Semester.*—Anthon's Horace (satires and epistles), Agricola of Tacitus, composition completed, Latin at sight, Roman History.*Second Semester.*—Cicero's Tusculan Disputations, Latin at sight, original composition in Latin, Roman History.

JUNIOR—FIFTH YEAR.

*First Semester.*—Plautus, Pliny's Letters, exercises in Latin (oral and written), Latin literature, lectures.*Second Semester.*—Frieze's Quintillian (Histories of Tacitus), exercises (oral and written), review of the whole grammar, lectures.

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, Nepos, Cæsar, Cicero (four orations), Virgil's Æneid (including scanning), Classical Geography.

It is suggested to teachers to connect simple exercises in making Latin either oral or written, with all the Latin studies of pupils in their preparatory training.

BOOKS OF REFERENCE.

Andrew's (Harper's new edition) or Freund's Leverett's Latin Lexicon, Andrew's and Stoddard's or Gildersleeve's or Allen and Greenough's Latin Grammar, also the Grammars of Roby and Madvig, Anthon's Classical Dictionary, Smith's Dictionary of Antiquities, Eschenberg's Classical Manual, Appleton's Classical Atlas, Munk's Greek

and Roman Metres, Arnold's or Liddell's History of Rome, Dunlop's Roman Literature, Daubeny's Roman Agriculture, Fisher's Three Pronunciations of Latin.

The English pronunciation is carefully taught and strictly followed in the classroom. The advanced classes are also taught to use the so-called Roman and so-called Continental methods.

## R E P O R T.

SAMUEL S. LAWS, LL. D., *President of the University of the State of Missouri :*

DEAR SIR:—The following is the report of the Latin Department for the year closing June 2, 1881 :

Junior Class.....	12
Sophomore Class.....	15
Freshman Class.....	23
Sub-Freshman Class.....	57
First Class.....	146
Whole number enrolled without duplication.....	253

### ADMISSIONS BY SEMESTERS.

First Semester.....	233
Second Semester.....	202
Total by Semesters.....	435

Members of the Junior and Sophomore Classes, who attain the requisite standing, will be permitted to contend for a prize in either or both of the following subjects :

1. A translation into Latin from *Johnson's Rasselas*, beginning with the words : " *Ye who listen with credulity,*" and closing with the words : " *Rejoices to find that his heart was lightened.*"

2. A Latin Ode in one of the Horatian Measures.

The Appleton & Co. prizes were awarded as follows :

- Junior—C. L. Diven, Centralia.
- Sophomore—Frank Bauerlein, Kansas City.
- Freshman—J. M. Taylor, Fieldsdale.
- Sub-Freshman—M. C. Lucky, Marionville.

#### FIRST CLASS :

- First prize—C. W. Manwaring, Columbia.
- Second prize—L. P. Hill, Linn county.

Best essay on : " *Num Senatus, Cicerone postulante, recte de conjuratoribus interficiendis judicaverit,*" (in Latin).

Prize awarded to C. W. Christie, Monticello.

Best translation into Latin from Macaulay's England (vol. II.: "*The Universities*"), beginning at the words: "Before that formidable tribunal now appeared the Vice-Chancellor," and closing with the words, "for the purpose of preventing an outbreak."

Prize awarded to Frank Bauerlein, Kansas City.

Very respectfully,

M. M. FISHER,

*Prof. Latin Language and Literature.*

## IX. SCHOOL OF GREEK AND COMPARATIVE PHILOLOGY.

### PROFESSOR FLEET.

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 will be 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.

#### 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 (Odyssey), Translations into Greek, Lectures on Grammar, Gladstone's Homer.

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

## JUNIOR CLASS—FIFTH YEAR.

*First Semester.*—Sophocles, Translations into Greek, Lectures, Greek Literature.

*Second Semester.*—Thucydides, Translations into Greek, Lectures, Greek Literature.

## TEXT-BOOKS.

Harkness' First Greek Book.  
 Kühner's Elementary and Hadley's Grammars.  
 Jones' Greek Prose Composition.  
 Boise's Exercises in Greek Syntax.  
 Baird's Classical Manuel.  
 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.  
 Young's English-Greek Lexicon.  
 Liddell and Scott's Greek English Lexicon.

## REPORT.

S. S. LAWS, LL. D., *President Missouri State University :*

SIR :—I beg leave herewith to submit a report of the number of students in the Department of Greek and Comparative Philology during the year 1880-81 :

Junior Class.....	14
Sophomore Class.....	10
Freshman Class.....	14
Sub-Freshman Class.....	20
Preparatory Class.....	48
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Total by Classes.....	106

Very respectfully,

Your obedient servant,

A. F. FLEET,

Prof. Greek and Comparative Philology.

## X. 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 translations 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 prosody ; the growth, limit, style and purpose of Hebrew literature. Text-books: Green's Larger Grammar, or Deutch's and Gessenius' 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 Grammatick und Chrestomathie, the Peshito Version of the New Testament, and the Chronicles of Bar Hebraeus.

2. The Arabic language, in ancient and modern materials. Text-books: Caspari's Grammatica Arabica, 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.

PRESIDENT S. S. LAWS, LL. D. :

SIR :—I have the honor to submit the following report of the Department of Hebrew and Semitic Literature for the year 1880-81 :

The number of students who have entered this Department during the year is eighteen, of whom fourteen studied Hebrew, and passed in it a satisfactory examination. Several maps are needed and a number of books of reference for this work.

Respectfully,

Your obedient servant,

J. S. BLACKWELL,

Prof. of Hebrew and Semitic Literature.

## LADIES DEPARTMENT.

## REPORT.

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

SIR :—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 last year the establishment of the Ladies' Department, over which I have the honor to preside, and also to share in the class room labor of the English Department.

In submitting to you my report, I rejoice to say that the provisions of the Department 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 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 daily evidences of development in genuine womanhood.

Believing that the only true government is that which leads to the development of individual character, the regulations adopted are addressed to the personal responsibility of the pupil, and to this principle of government the young ladies have heartily responded.

## 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 consecrated 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 readily and effectively be accomplished. Therefore, to avoid extravagance and to disarm criticism, *all* young ladies attending the University *will be required to adopt, as their daily attire*, (the weekly holidays excepted) the following uniform: For winter, a walking suit of black alpaca or cashmere with trimmings of the same color; for summer, a white sack or basque will be substituted for the black waist or basque. The style of hat will be announced at the opening of the first semester of each collegiate year; and, 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 of each will thereby be considerably diminished.

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 towards the preservation of their health.



## 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 Calisthenic exercises during one semester, unless some reason justifying exemption therefrom be presented. During the year forty-one young women have engaged in these exhilarating exercises, and thereby nerve and muscle have been strengthened, and the brain rested and energized for its work. During the greater part of last scholastic year and during the first semester of the present year, the Calisthenic class had the use of my piano; but during the second semester we have been deprived of the delightful stimulus of music, and the progress of our work has thereby been greatly retarded. We trust that next year our liberal board will make necessary provision for this class.

## LITERARY PERIODICAL.

The Missouri University Magazine, published last year by the lady students, proved to be too heavy a task, in addition to scholastic work, upon the *few*, and did not accomplish its legitimate aim as a means of culture among the *many*. It was, therefore, deemed advisable to discontinue it, at least for the present, and so direct the workings of the new society mentioned below as to secure through it, in a large measure, the end proposed by the Magazine.

## LITERARY SOCIETY.

The young women have this year only one literary society—the Philaethean. There being but one available hall adapted to society purposes, and for other reasons looking to the highest and best interests of those concerned, it was thought best to have but one literary organization among them.

The Philaethean Hall is the most artistic in the University. Through the liberality of Mrs. S. S. Laws its walls are hung with paper of artistic design, and by appropriation from the University treasury it has been handsomely furnished, all of which is highly appreciated by the young society.

In this Society is represented almost every class in the University, and in it are afforded opportunities for culture in composition and music. It meets every Saturday at 4 P. M., and the exercises of a regular session continue about two hours.

The Society held its first annual open session March 12th of this year. The exercises, musical and literary, were of such a character as to elicit high praise both from the University Faculty and citizens of Columbia, and to promise a successful career for the new organization.

## MUSIC.

To all students who have desired to study music—vocal and instrumental—facilities have been afforded. This feature of our work has not received the attention that its importance demands; nor can it until our Legislature adopts means for the erection of a suitable building wherein may be established a regular conservatory of music. In the mean time we will strive to enlarge our present facilities in the study of this art, looking forward to the establishment of a conservatory of music which shall attract the best material and the best talent in the Mississippi Valley.

## INSTRUCTION IN THE SCHOOL OF ENGLISH.

During the year three classes—Grammar, Analysis and Rhetoric—from Prof. McAnally's Department, have been under my instruction. The class in Grammar numbered forty-six; the class in Rhetoric one hundred and ten. Each of these was only one division of a class, the other division being under Prof. McAnally's instruction. These immense divisions constitute a significant fact in the history of our University.

I desire here to mention the uniformly polite attention of my classes in the recitation room, and to express my high appreciation of the pleasure and profit that I have derived from my association with the courteous Principal of the English Department.

## GIRLS' COURSE IN ARTS.

This course is equivalent to any one of the other academic courses, yet is identical with none. 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, it is deemed advisable that the Girls' Course in Arts be co-ordinate in rank, the equivalent in acquisition and equal in honor with the other academic courses, and take its place by them in the Synchronistic Table. The degree of A. D. B. 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 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 for the various academic courses, over fifty per cent were enrolled for the Girls' Course in Arts. This, in the first year of its history, indicates the merits of the course, and promises much for the future.

The increase of the number of lady students this year is greater, so far as I have been able to ascertain, than the increase of any previous year; and this is, doubtless, as largely attributable to the establishment of the Girls' Course in Arts as to any other special provision for them. During the session of 1879-80 sixty-eight young ladies attended the University, and during the present year ninety-three are in attendance.

The special work for girls in our University is in its infancy; yet it promises with proper aid from the State to develop into no mean proportions, and to be strong to help the daughters of our Western land up to a noble purpose, where they shall breathe the freshness of a new life, and be energized to accomplish aright their God-appointed mission. Our State has not been as generous as some others in forwarding the higher education of her daughters; but we believe that the day *must* come, though it may be distant, when she will awaken to a more adequate realization of the influence of cultivated woman as a conservative force in our civilization, and when she will, through a generous legislation, multiply *here* the facilities for the completer education of woman, and thus make Missouri University the dispenser of greater good to the State and to the nation.

Very respectfully yours,

Mrs. O. A. CARR,

Principal of Ladies' Department.

## II. The Professional Schools

OF THE

# MISSOURI UNIVERSITY.

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- XI.—1. Agriculture—Agricultural and Mechanical College.
  - XII.—2. Pedagogics—Normal College.
  - XIII.—3. Law School.
  - XIV.—4. Medical School.
  - XV.—5. School of Mining and Metallurgy.
  - XVI.—6. Engineering School.
  - XVII.—7. School of Military Science and Tactics.
  - XVIII.—8. School of Art.
  - XIX.—9. Commercial School.
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The primary aim of the Academic Schools of Science and Language (I—X), is culture; that of the Professional Schools (XI—XIX) 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 for the pursuit of 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 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 are 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 effected, 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 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 that word, and that is, by way of defence. This, however, is not the place for discussion, but only for statement and announcement.

XI. AGRICULTURAL AND MECHANICAL COLLEGE.

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FACULTY.

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SAMUEL SPAHR LAWS, LL. D., PRESIDENT,  
*Professor of the Sciences of Mind.*

GEORGE C. SWALLOW, LL. D., DEAN,  
*Professor of Agriculture and Natural History.*

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

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

S. M. TRACY, M. S. (Michigan Ag. Col.),  
*Professor of Entomology and Botany and Superintendent of Gardens.*

THOMAS J. LOWRY, S. M., C. E.,  
*Professor of Engineering.*

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

GEORGE HUSMANN,  
*Professor and Superintendent of Pomology and Forestry.*

BENJAMIN F. THOMAS, PH. D.,  
*Professor of Physics.*

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

CONRAD DIEHL,  
*Professor of Art.*

ROBERT B. MADDEX,  
*Farm Superintendent.*

HON. JOHN WALKER, JOHN S. CLARKSON, HON. JERRE C. CRAVENS,  
*Farm Committee.*

The Board of Curators announced "a full course of lectures on Scientific Agriculture, by Professor Swallow," in the year 1859, (Cat. 1859, pp. 26-27,) and in 1870, this Department was revived and reorganized, upon the basis of the Congressional land grant of 1862, and has, from its reopening, been in charge of Professor Swallow, who was first entrusted by the Curators with this line of work, twenty years ago.

## COURSE OF STUDY.

The course of study is made strictly professional, and is reduced to *Two Years*.

The first year is essentially Horticultural, and the pupil who completes it will be entitled to *The Certificate in Horticulture*.

The second year is Agricultural, and its studies, together with those of the first year and those required for entering the Senior Year, make the full Agricultural Course, and entitles those who complete it to the Degree in Agriculture (B. Ag.).

### COURSE OF STUDY.

#### JUNIOR YEAR—HORTICULTURE.

		Hour.
First Semester.	Propagation, Pruning, Training, Soils, Fertilizers, Tillage and Drainage..... Pomology, Nursery Business,* Forestry and Meteorology..... Mechanics and Physics..... Nursery Work at Discretion of Professors.....	I. II or IV. III. V and VI.
Second Semester.	Gardens and Gardening, $\frac{1}{2}$ ..... Entomology, $\frac{1}{2}$ ..... Orchards, Vineyards, Fruit Gardens, Ornamental Trees and Landscape Gardening..... Botany..... Work in Gardens and Vineyards at the Discretion of Professors.....	II. IV. III. I. V and VI.
<b>SENIOR YEAR—AGRICULTURE.</b>		
First Semester.	Zoology and Veterinary Science..... Farm Crops and Surveying..... Agricultural Chemistry..... Mineralogy and Mechanical Drawing..... Field Work, or Feeding and Care of Stock.....	III and VI. IV and VI. I. II. V and VI.
Second Semester.	Farm Buildings, Machinery, Fences and Water Supply..... Domestic Animals and Farm Law, Geology, Roads and Bridges..... Outdoor Work.....	I. II. V and VI.

\* In this the pupil is fitted to engage in the profitable business of selling nursery stock by which he may, during vacation, pay his collegiate expenses if he be energetic and skillful. Any number can do this.

## REQUIREMENTS.

To enter the Junior Class the student must understand Arithmetic through Fractions.

To enter the Senior Class the student must pass a satisfactory examination in Arithmetic, English Grammar, Geography, first three books in Geometry, and Trigonometry of the Right-Angle Triangle, and before graduation the student must spend two months, June and July, or their equivalents, in the work of the College, for which he will be paid full price for his labor.

The June and July previous to entering the Senior Year is the best time to meet this requirement. The arrangement of the details of this matter is left to the discretion of the Dean of the College.

The daily Field Exercises are designed to give the student a working knowledge of the profession, and will be required no longer on any one subject than is necessary to accomplish this end.

## COURSE OF STUDY.

This course of study has been adopted as comprising only what is absolutely necessary to a good Agricultural Education. Our *Means of Instruction* is tolerably full in the studies of the Junior Year. But there are some important deficiencies in the means of illustrating the studies and work of this year.

We need *Models* for showing the Structure of Plants and their Organs and Seeds.

We have no Instruments for doing the Practical Work of the Meteorologist—for showing the conditions of the Atmosphere and indicating the coming changes of the Weather. Without these no farmer is fully prepared to do his work with the greatest economy and success; and surely no Agricultural Education can be complete without a practical knowledge of their use.

*There are still greater deficiencies* in the means of teaching the studies and work of the Senior Year.

*In Veterinary Science* we have neither Teacher nor Apparatus.

*In Zoology and Comparative Anatomy* of the Domestic Animals we have very little. The few specimens we have, make more obvious the necessity for a hundred others. We can give no course of instruction on the Domestic Animals, such as an Agricultural College should give, without Skeletons and Preparations or Models of their important organs. These we have not.

We have been thus far unable to procure the jars necessary to preserve and exhibit the animals we have collected.

We have no barns for the preservation of our crops, and no stables and other buildings for experimental feeding.

Nor have we the jars, cases and room for preserving and exhibiting our farm crops for yearly comparisons to show the results of our experiments.

We have made many experiments with most valuable results; but the benefits to the students and the public generally, will be in the main lost in consequence of our inability to preserve the specimens of the experimental crops.

Our instruction in the care of feeding of Domestic Animals must be imperfect until we have more varieties of improved animals and preparations for comparative feeding.

For ten years we have labored in hope, doing the very best we could with the means at our command, to give an Agricultural Education.

More than five hundred students have entered our classes, and we have been able to hold them to the course as far as we have had even small means of instruction. But when they reached the studies of the higher classes where no means of instruction have been provided, the students naturally gravitate to the Lecture rooms supplied with apparatus.

It may not be usual for schools to advertise their deficiencies, but common honesty has compelled us to do this for ten successive years.

Since the State has again failed to give us such means of instruction as other Agricultural Schools have, we must do the best we can with what we have, trusting the more to *brain and muscle* for the good we can do.

We do this the more cheerfully since we fully believe, with all our deficiencies, our course of instruction is inferior to none in practical value to all in the common walks of life, and vastly superior to all others to the Farmer and Horticulturist.

#### DEGREES AND CERTIFICATES.

Those who complete the Junior Year, the Horticultural Course, will be entitled to *The Certificate in Horticulture*; and those who complete the Senior Year, *The Course in Agriculture*, will be entitled to the Degree in Agriculture (B. Ag.), Certified by a Diploma.

#### PRIZES.

##### PRIZES TO THE JUNIOR CLASS—HORTICULTURE.

1st. THE SWALLOW PRIZE for the Best Essay on Pruning.

*Loudon's Encyclopedia of Gardening.*

2d. For Best Specimens of Propagation including Apples, Pears and Grapes, Strawberries and Gooseberries—20 plants each, \$10.

3d. For Best Show of Garden Vegetables, including Tomatoes, Cabbages, Onions, Peas and Beets—20 plants each, \$10.

##### PRIZES FOR SENIOR CLASS—AGRICULTURE.

4th. For Best Corn Culture,  $\frac{1}{4}$  acre, \$10.

5th. For Best Reaping, Binding and Shocking,  $\frac{1}{4}$  acre, \$10.

6th. For Best Specimen of Plowing,  $\frac{1}{4}$  acre, \$10.

The College will furnish the land and materials, but all the work must be done by those contending for the prizes.

#### DESIGN OF THIS INDUSTRIAL COLLEGE.

It is the design of this school to fit the pupil for the most successful and honorable farm life—to give him the scientific knowledge—that will best enable him to understand his work and the manual skill which will fit him to do it with the greatest ease and accuracy.

To do this, one must have a thorough knowledge of his profession, and be able to do his work with skill and success.

The first and highest employment of man is to cultivate the soil, to feed and clothe the world. To do this well has been the ambition of the great and good of every



land. The increase of populations and the multiplied demands for the products of the soil, must render this department of human industry more and more prominent, lucrative and honorable.

It is, therefore, eminently appropriate for this College, located in the midst of the best agricultural regions of the continent, in which the populations of the earth are concentrating with unprecedented rapidity, to invite our youth to such a collegiate course of study and labor as will best fit them to develop the agricultural and mechanical resources of the State, and meet the coming demand upon their capacities. For such an education, a man must learn two things :

1. What to do, and how it should be done.
2. He must acquire the manual skill to do it, and do it well

To know what and how, is the *Science*.

To have the manual skill, is the *Art*.

To get the *Science*, he must study.

To get the *Art*, he must work.

Our Industrial College, then, must be a school of *labor* as well as of *study*. But how much study and how much labor, are questions not definitely settled, but in general terms it may be stated :

The pupil must study until he knows what should be done, why and how. When this is accomplished, the intellectual division of an industrial education is finished.

The pupil must labor until he can do all farm work with skill ; and when this is accomplished, the manual division of an agricultural education is finished.

Whatever is more than this, has no more place in an agricultural school than in any other. It is not the idea of our school to furnish a place for pupils to work,\* but a place where they may learn to work as well as to think.

But what shall the pupil do? Everything that is done on the farm, in the garden, orchard and nursery.

Who shall direct the labors of the pupils? He who teaches what is to be done, why it should be done, and how, is the one to see that it is done, and well done. Then the teaching and practice will agree, science and art go hand in hand. This will prevent the introduction of many useless and impracticable theories. When one teaches merely, he can advance many beautiful theories for others to practice, but when he is expected to carry out his own suggestions, he will be more cautious, take more care that his instructions will bear the test of actual experiment.

#### WORK ON THE FARM.

*The Farm House*, heretofore used as a boarding house, has received extensive repairs, and the outbuildings have been greatly improved. The Farm House is now occupied by Prof. Swallow, who, by the action of the Curators, is placed in immediate charge of all farming, horticultural and garden operations.

*Fences*—Much new fence has been built, and a large amount of the old repaired.

*Hedges*—Some new hedges have been put out, and all the old ones put in prime order. All the *Osage Orange* hedges promise well. The *Honey Locust* hedge will evidently sooner make a fence which will be a more perfect protection against man and beast. But the *Arbor Vitæ* hedge gives some promise of success, even in our hot, dry summers and clayey soils. It will do better in wet, sandy soils.

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\*We furnish work, as far as possible, for those who desire it as a means of support; but this is no part of the plan of instruction.

*A Garden*, designed to be a *Model Farm Garden*, has been cleared up, fenced and planted with small fruits—grapes, strawberries, gooseberries, currants, blackberries and raspberries—and all the most useful vegetables in sufficient quantities to supply a large family throughout the year.

#### EXPERIMENTS IN INDIAN CORN.

A series of experiments has been undertaken on the Agricultural College Farm with Indian corn, to determine with absolute certainty what varieties of corn are most profitable for the various uses for which they are cultivated in Missouri. Thirteen varieties were planted in 1877, fifteen in 1878, and twenty-seven in 1879, and sixteen in 1880.

The comparative results of the experiment in 1877 were published in the catalogue of 1878; of the twenty-seven varieties tested in 1879, in the catalogue of 1880, and the results of the sixteen varieties in 1880 in Mr. Maddex's report.

We have also made experiments in the culture of wheat, potatoes and oats. (For the results see Prof. Tracy's report.)

We shall also make the most exhaustive experiments with the various fruits, to determine those best adapted to our climate and soils. (See Prof. Husmann's report.)

#### THE BEST FRUITS AND SEEDS,

thus determined, will be distributed to the people of the State.

The refusal of the last Legislature to give any assistance in supplying the farm, the garden and the nursery with the necessary and ordinary buildings and implements needed in progressive work, has compelled the College to suspend its experimental and practical work, or adopt a new policy for obtaining the funds necessary for its support.

While the other States have given their agricultural colleges endowments amounting to several hundred thousand dollars, and large annual appropriations, our own State has given ours virtually no endowment and no annual appropriations; and yet our people require the same results, the same instruction and the same costly experiments as are demanded of colleges well endowed and to which large annual appropriations are made.

To meet these demands the College is compelled to undertake a money-making work. Heretofore its nursery products have been sold to dealers at mere nominal figures; but hereafter it will undertake to supply all demands for horticultural products, and, as far as possible, seeds of the best varieties of our farm crops. The very best fruits and ornamental plants will be offered the people of the State through the most reliable agents.

#### STUDENTS' LABOR.

An examination of the labor accounts of the Agricultural College, shows the following results of students' labor for the year 1880:

The Horticultural Department paid \$430.65 to eighteen students for labor in the gardens.

The Department of Pomology and Forestry paid \$1,110.35 to thirty-eight students for labor in the nursery and vineyard, and \$1,500 commissions to thirty students for selling nursery stock.

The Farm Department paid \$409.50 to thirty-three students for farm labor.

It thus appears that the Agricultural College, during the year 1880, paid \$3,450.50 to University students for their labor.

Many students work for other parties in and around Columbia. Some of these students are among the best workmen we have.

Quite a number of our students pay nearly all their expenses for clothing, board and books by their work ; and some of these stand in the first rank in their classes.

#### CLASSES IN THE AGRICULTURAL COLLEGE COURSE.

Seniors.....	2
Juniors.....	2
Sophomores.....	6
Freshmen.....	38
	48

#### PLANT FOOD IN MISSOURI SOILS.

It may be well to ask attention once more to the vast amount of plant food in the soils of Missouri ; but more particularly to the amounts found in the sub soils resting upon and formed out of the rich marls of the bluff.

To show at a glance the amount of plant food in the soil itself, and then in each foot of depth below the soil, I have prepared the following table, which presents an average of all the varieties of soils resting on the bluff, from the richest Hackberry land to the poorest White Oak, and the amount for each foot in depth for the first three feet and also for one foot at the depth of twelve feet below the surface. Other portions between the third and twelfth foot and below are equally rich.

Table showing the amount of the various elements of plant food in each foot of the Missouri soils resting on the Bluff.

	1st. foot.	2d. foot.	3d. foot.	12th. foot.
Lime.....	19.166 lbs.	16.117 lbs.	29.494 lbs.	26.484 lbs.
Magnesia .....	13.329 "	30.927 "	18.184 "	18.818 "
Potash.....	13.310 "	32.234 "	17.413 "	40.420 "
Soda.....	7.157 "	7.405 "	11.343 "	104.544 "
Phosphoric Acid.....	12.868 "	11.157 "	13.996 "	1.491 "
Organic Matter.....	269.636 "	253.381 "	142.310 "	46.787 "
Sulphuric Acid.....	3.180 "	2.990 "	4.051 "	not known.
Chlorine.....	.405 "	.429 "	.664 "	not known.
Carbonic Acid.....	not known.	not known.	not known.	44.605 lbs.

This table shows these soils as rich in plant food, save the organic matter, at a depth of three feet as they are at the surface, even a little richer in Phosphoric Acid, Soda, Potash, Chlorine and Sulphuric Acid. At twelve feet below the surface the amount of plant food is still greater except in organic matter and Phosphoric Acid.

Farmers usually cultivate less than one foot of their soils and when the plant food is exhausted they use fertilizers at great expense of money and labor to supply the plant food. But the farmer on these Missouri soils, when the surface soil is exhausted, has an abundance of the best fertilizers in his subsoil ; and instead of buying

fertilizers and spreading them over the surface, he sets his plow a little deeper and turns them up from his own stores in the subsoil. And when the plants have consumed the supply thus obtained, there is still lower down, enough of the same costly materials to replenish his soil a hundred times ; for it goes all the way down to depths varying from 10 to 200 feet, all about equally rich as the table shows it to be at a depth of twelve feet.

To show the money value of this store of plant food in the subsoil of all these lands, we may reckon the commercial value of the Phosphoric Acid for a single foot in depth on one acre. The second foot of these soils, that is, the subsoil from the depth of one foot to two feet, in every acre, contains 11,157 pounds of this acid. At ten cents\* a pound this would cost \$1,115.70. The next foot below, that is from two to three feet in depth, contains in each acre 13,996 pounds of Phosphoric Acid which could cost \$1399.60.

Thus it is seen that two feet only of these subsoils, contain on each acre as much Phosphoric Acid as could be bought in commercial fertilizers for \$2,515.30.

The soils as above shown, from which these results are obtained, were selected as representative soils from the lands of all grades and from all parts of north and central Missouri.

If we should calculate the commercial value of the other fertilizers, as Potash, Soda, Sulphuric Acid, Chlorine and Organic Matter found in the subsoils of a single acre, and if the calculation be extended to a depth of ten feet or one hundred feet, the result would be somewhat startling. Such a calculation would not fall far short of a demonstration of the often repeated assertion, "Our Missouri soils are inexhaustible."

#### DONATIONS TO THE COLLEGE DURING 1880.

Mr. C. Peabody, a very old and valuable Bean.

Mr. B. J. Hite, his valuable *Cook Stove Heat Fender*.

C. A. Crosby & Co., Spring Tooth Harrow.

Col. Caskie, specimen of Blunt's Prolific Corn.

G. C. SWALLOW, Dean.

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## REPORT OF HORTICULTURAL AND GARDEN DEPARTMENTS.

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Prof. G. C. SWALLOW, *Dean Agricultural College* :

*Sir* : The following report of work done in this department during the year 1880-81 is respectfully submitted :

### WHEAT.

In 1877 a series of field trials of a number of varieties of wheat was commenced on the farm of the Agricultural College. The land selected for the purpose was a field which had been in cultivation for many years, but had received little or no

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\*Phosphoric Acid is valued at twelve and a half cents in commercial fertilizers.

manure and no extra culture except subsoiling in 1874, and again in 1876. The soil was a clayey loam, sloping toward the south, naturally fertile and capable of producing an excellent crop.

In 1874-75-76, the land was cultivated in corn; in 1877 a crop of oats was grown, followed by wheat; the crop harvested in 1880 being the third successive crop of wheat on the same land.

In August, 1878, a portion of the land was manured with a slaughter-house refuse, which was composted with earth in 1876, and was applied at the rate of five two-horse wagon loads to the acre; the remainder of the land was manured with stable manure at the rate of twenty loads to the acre. The wheat was sown so that each variety was grown on land having each kind of manure. The slaughter-house refuse gave the largest straw, but the brightest and the plumpest grain came from the land having the stable manure.

The crop of 1880 showed a slight difference in favor of the stable manure.

In July, 1879, the land was plowed about seven inches deep and was stirred about three inches deep with a corn cultivator just before sowing. On September 28, the wheat was sown with a drill at the rate of one and one-third bushels per acre. No after cultivation was given to the crop.

The following table gives some of the results of the trials made this year, compared with those made in 1878 and 1879. No mention is made in the table of varieties which have given less than fifteen bushels to the acre as an average in these trials.

NAME OF VARIETY.	Date when harvested.			Height—feet.		
	1878.	1879.	1880.	1878	1879	1880
Amber.....	June 21	June 18	June 15	3½	3¾	3½
Amber Straw.....			“ 12			3½
Arnold's Hybrid.....	June 19	June 16	“ 14	4	4	3½
Arnold's Victor.....			“ 18			3
Bull.....			“ 1			2½
Clawson.....	June 21	June 19	“ 21	4½	4½	3½
Deihl.....	“ 21	“ 12	“ 12	3	3½	3½
Dott.....	“ 19	“ 16	“ 12	3½	4	3½
Egyptian.....		“ 20	“ 14		3½	3½
Fultz.....	June 17	“ 12	“ 12	4	3¾	3½
German Amber.....			“ 14			3½
Gold Medal.....	June 24	June 19	“ 17	4	3¾	3½
Jenning's White.....	“ 19	“ 16	“ 15	3	3¾	3½
Kentucky.....	“ 11	“ 18	“ 19	4	3¾	3½
Louisiana.....	“ 21	“ 18	“ 16	3	3¾	3½
Mediterranean, Bearded.....	“ 17	“ 18	“ 12	4	3¾	3½
Mediterranean, Smooth.....		“ 12	“ 12		4	3½
Michigan Wick.....	June 21	“ 18	“ 16	3	3¾	3½
Mold's Red.....		“ 24	“ 22		3	3
Mold's White.....		“ 24	“ 22		3	3½
Muskingum.....	June 19	“ 18	“ 14	3½	3¾	3½
Nursery.....	June 25	June 20	“ 21	3½	3	3½
Odessa.....			“ 14			3½
Oregon Club.....	“ 21	“ 18	“ 16	4	3	3
Post.....	“ 25	“ 18	“ 19	3½	2¾	3
Red Chaff.....			“ 17			3½
Red Lancaster.....	June 18	June 18	“ 14	4	3¾	3½
Red May.....	“ 8	“ 9	“ 5	3¾	3¾	3½
Red Russian.....	“ 19	“ 18	“ 14	3	3¾	3
Sandomirka.....		“ 24	“ 22		3½	3½
Sanford.....	June 24	“ 19	“ 14	4	3¾	3½
Shumaker.....	“ 17	“ 16	“ 12	4½	3¾	3½
Silver Chaff.....	“ 25	“ 19	“ 19	4½	4	3½
Tappahannock.....	“ 10	“ 16	“ 9	3¾	3½	2¾
Touzelle.....	“ 25	“ 24	“ 22	4½	3	3½
Treadwell.....	“ 21	“ 20	“ 22	3½	3½	3½
Turkey.....			“ 17			3½
Velvet Chaff.....			“ 12			3½
Washington Glass.....			“ 18			3½
White May.....			“ 12			3½
White Rogers.....	June 19	June 18	“ 14	4	3¾	3½
Zimmerman.....	“ 15	“ 19	“ 15	3¾	4	3½
Russian, No. 1.....	“ 29	“ 21	“ 22	3½	3½	3½
“ No. 2.....	“ 9	“ 18	“ 9	3¾	3½	3½
“ No. 3.....	“ 29	“ 24	“ 23	3	3½	3½
“ No. 4.....	“ 25	“ 20	“ 22	4½	3¾	3
“ No. 5.....	“ 29	“ 24	“ 24	3½	3	3½
“ No. 8.....	July 3	“ 23	“ 24	4½	3¾	3½
“ No. 9.....	June 29	“ 21	“ 24	4½	3½	3½
“ No. 10.....	“ 29	“ 21	“ 24	4½	3½	3½
“ No. 11.....	July 3	“ 24	“ 24	3½	3½	3½
“ No. 12.....	“ 3	“ 24	“ 24	3½	3½	3½
“ No. 13.....	“ 3	“ 21	“ 22	3½	3	3½
“ No. 14.....			“ 16			3½
A.....			“ 14			3½
B.....			“ 14			3½
C.....			“ 18			3½
D.....			“ 19			3½
Average.....						



In making up the average for 1878, Fultz, Gold Medal and Silver Chaff are omitted, the yield that year having been lessened by accidental causes.

EXPLANATION.—A., Amber; R., Red; W., White; B., Bearded; S., Smooth; s., small; m., medium; l., large.

Many of the varieties mentioned in the table are known by other names in different parts of the State, and below are given a few synonyms: Red Lancaster, known as Lancaster, Mediterranean and Red Sea; Bull, known as Early Michigan, English Bull and Missouri Swamp; Red May, known as Early May, Gold Drop, Tennessee May, Orange, Red May, Yellow Lammas; Zimmerman, known as Democrat, Alabama May, Graham, Walker, Wilson, Late May, Lime, Golden Chaff, Lincoln and New York Premium; Clawson, known as Genesee, White Michigan and Seneca; Mediterranean, smooth, known as Sea Island; Tappahannock, known as Boughton and Golden Amber; Odessa, known as Grass; Mediterranean, known as Swamp, Blue Stem and Lancaster.

This list might be extended much further, and in many cases the same name is applied to entirely distinct varieties. It is probable that the actual number of distinct varieties existing is much smaller than is generally supposed. Each year we receive, from various parts of the country, samples of varieties which are supposed to be different from any we have, but which, upon trial, prove to be identical with some of those already tested.

Other varieties, which at first appear to be different, in the course of two or three years become so much like others that it is impossible to distinguish them from each other, if, indeed, there is any difference. This change of character is most noticeable in varieties which have been sent here from a distance, and which have been grown for years in a soil and climate entirely different from our own. The general tendency of most varieties, when grown here, is to become darker in color. A reference to the above table will show that while we had a large proportion of white varieties in 1878, now we have very few, most of them having changed to amber, while many of the amber colored sorts have become red, and, in a few cases, varieties that were originally white have become red.

From the table it will be seen that in 1878 the time of ripening extended from June 8, to July 3, while in 1879 it was several days shorter, beginning June 9, and ending June 24, maturity having been hastened by drouth during the growing season.

In 1880, although the harvest began more than a week earlier, it was not completed until the 24th, the same date as the previous year.

The average yield of the varieties ripening each day is as follows:

Month.	Day.	1878.	1879.	1880.
June	1.....	.....	.....	18.08
“	5.....	.....	.....	27.84
“	8.....	27.52	.....	.....
“	9.....	23.36	32.46	31.08
“	10.....	20.32	.....	.....
“	11.....	25.76	.....	.....
“	12.....	.....	34.97	36.07
“	14.....	.....	.....	36.03
“	15.....	16.32	.....	37.12
“	16.....	.....	36.36	38.45
“	17.....	22.57	.....	38.38
“	18.....	24.65	31.54	35.04



Month.	Day.	1878.	1879.	1880.
June	19.....	28.98	35.69	34.26
“	20.....	.....	37.17	.....
“	21.....	22.68	31.56	28.67
“	22.....	.....	.....	25.91
“	23.....	.....	32.22	31.79
“	24.....	18.06	27.80	33.85
“	25.....	18.54	.....	.....
“	29.....	17.11	.....	.....
July	3.....	16.28	.....	.....

By this it is seen that from the beginning of harvest to June 21st, in 1878, and to June 20, in 1879, there is but little difference in the yield, but that after those dates, especially in 1878, the yield decreases. The actual decrease was greater than is indicated by the table, as eighteen varieties which yielded less than fifteen bushels to the acre, and are not included in the table, all ripened June 29th, or later, in 1878, and June 21, or later, in 1879.

In 1880, with the exception of the two early varieties, Bull and Red May, there was very little difference between the early and late ripening sorts; one cause of this variation was doubtless that in previous years late ripening sorts were badly affected with rust, while this year they suffered no more than did the earlier sorts.

It will be noticed, also, that nearly all of the late varieties are of Russian origin, and the fact of their having become somewhat acclimated has enabled them to develop better than they have done heretofore.

In 1878 these Russian varieties averaged only 18.22 bushels per acre, while in 1879 they averaged 31.29, and in 1880 had increased to 32.73. No. 14, which has not been included in former reports, was obtained from a few scattering heads noticed in 1878. Although they exhibit a marked improvement over former years, the Russian sorts still have too much straw and are too late in ripening to make them desirable for general cultivation.

The average yield of the 60 varieties was larger this year than ever before, although it was the third successive crop of wheat grown on the land, the thorough cultivation every year, the manuring in 1878 and the favorable season more than making up for the exhaustion of the wheat elements in the soil.

The question, "What variety of wheat do you find to be the best?" is asked almost daily, and is one which it is extremely difficult to answer, owing to the infinite variety of soils and locations, and above all to the differences among buyers of wheat. The Clawson furnishes a very marked illustration of this difficulty. For years millers have been strongly prejudiced against it and would seldom buy it without discount of from 5 to 10 cents per bushel. At the National Millers Association, held in Cincinnati last year, few millers could be found who had any personal acquaintance with the Clawson, and the few who had were about equally divided on its merits. In a very thorough canvass of the St. Louis Board of Trade, made in the fall of 1880, not a single grain dealer could be found who knew any difference between Clawson and any other white wheat, and there were very few who had ever heard of any such variety. Similar inquiries were made at the Cincinnati Board of Trade with like results. Several English millers who were shown samples of the Clawson wheat pronounced it a very valuable variety for mixing with the harder Russian wheat and preferred it to Mediterranean which ranks highest with most American millers. The Fultz has suffered from the millers in the same way that the Clawson has, but with far less reason. In several instances

in this and adjoining counties millers have discounted Fultz 10 cents per bushel, but when offered the same wheat under another name, have taken it at the market rate, and after grinding a portion of it, have been anxious to engage the whole crop, "it made so much better flour than the Fultz." Silver Chaff is not yet extensively grown, but is rapidly coming into favor. The grain is somewhat harder than that of the Clawson.

Champlain and Defiance are two varieties which have been extensively advertised and which have proved very valuable in spring wheats. In 1879 several parties reported equally good results from sowing them as fall wheats, but with us they were almost entirely winter-killed. The few plants which survived gave very fine results, and they will receive a further trial.

Several of the varieties which have succeeded best on the trial grounds have been sown on the farm, and with these Mr. Maddex, the farm superintendent, reports the following results: "In 1879, Clawson, two fields—yield 23 and 26½ bushels per acre. Silver Chaff, 20 bushels. Fultz, two fields—16 and 25 bushels. These crops were all raised on dry white oak ridges which have been in cultivation for many years, and have received almost no manure. On one field where Zimmerman was almost a failure in 1878 Sanford and Smooth Mediterranean were grown and yielded 15 bushels per acre. Mold's White and Mold's Red gave only 11 bushels, and Sandomirka 15 bushels to the acre."

In 1880 the yields were as follows:

Arnold's Hybrid.....	25½
Clawson.....	25¾
Deihl.....	29½
Dott.....	20½
Egyptian.....	18½
Fultz.....	24
Post.....	16½
Shumaker.....	25
Silver Chaff.....	33 <sup>7</sup> / <sub>10</sub>
White Rogers.....	23½
Russian No. 2.....	24½

A little work has been accomplished toward securing improved varieties by a careful selection of seed. Seed from a stool containing eighty-four heads was saved; also from a few heads of extraordinary length. One head containing six grains in a mesh, several heads having uniformly four grains in a mesh, and other unusually fruitful specimens have been sowed by themselves, and from the crops raised from these still other selections will be made for future trials.

#### POTATOES.

The trials of Potatoes commenced in 1878 were continued, but, nearly all of the older and better known varieties were discarded and the work was confined almost exclusively to the production and testing of new varieties which have been grown from the seed either on the College grounds or elsewhere in Missouri. The results so far obtained are very encouraging but, at least three years are required for the development of a new variety, and a still longer time to determine its real value. No full report can be made at present.

## GREENHOUSE.

The greenhouse which had just been completed at the date of my last report, has proved an invaluable addition to the resources of this department, furnishing, as it does, excellent means for illustration in the class-room, besides giving work to quite a number of students, and assisting greatly in the carrying on of garden and experimental work. The greenhouse now contains a large number of plants of economic and commercial importance, and the number of these might be very largely increased if we were able to furnish space for them, but the house is now crowded to its utmost capacity, and many plants are now suffering for want of more room.

## CLASS-ROOM WORK.

Class-room work has been as follows:

Students in Geography.....	83
Students in Botany—Structural.....	120
Students in Botany—Economic.....	31
Students in Entomology.....	26
Students in Horticulture.....	11
	<hr/>
Total.....	271
Number twice counted.,.....	65
	<hr/>
Total number of individuals .....	206

S. M. TRACY,

Prof. of Horticulture and Botany, and Supt. of Garden.

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## Report of Department of Pomology and Forestry.

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Prof. G. C. SWALLOW, *Dean of Agricultural College*:

DEAR SIR:—I herewith submit report of work done in my department from April, 1880, to April, 1881.

*Nursery.*—This was considerably enlarged during the last year, to be able to meet the growing demand for trees by the public. The fact that there is no *general* nursery in the State, where the public, and especially dealers, can be supplied with reliable stock, would seem to make such a nursery an urgent necessity, to supply the planting public with home grown trees, as far as our climatic influences will justify, especially with evergreens, which it is almost impossible to obtain from a distance of any size, and at a suitable time for planting here. It is almost sure death to these to transplant them in the fall, and in the spring they cannot be obtained from the north in time to

transplant, nor are they so well adapted to withstand our severe droughts and scorching winds. I have therefore tried to obtain young stock, and grow them here to transplanting size, an operation which the extreme drought of the last two years, and want of means for irrigation have made very difficult. To get a nursery fairly under way, is always a tedious and expensive undertaking, and although I worked with a view to the strictest economy, the expenses were necessarily larger than the income. But the inventory taken at the end of the year, shows stock on hand, at lowest wholesale rates, to the amount of about \$6,000, as an offset to a deficit of \$2,900, and although too early now, in the midst of sales, to draw a balance, I may safely say that the deficit will be considerably decreased, even with the large additions of young stock which have been made. A recent importation from France has shown me a very cheap source from which to draw supplies, and as the young stock purchased is much better than that obtained at twice the price in this country, I shall depend for most of my supplies of young stock on that trade. The sales in this branch of my department were very lively last Fall, but the early and sudden cold snap in November interfered with many deliveries, and the imperfect manner of transportation by the railroads are a source of heavy loss every year; while the severe and long winter has had a discouraging effect upon our planters, consequently the sales are rather light this Spring. But this is only a temporary disappointment, and will be made up, I feel confident, by increased business next fall. We have handled and sold, during last fall and this spring, about eighteen thousand apples, eight thousand peaches, two thousand pears, cherries, plums, apricots and quinces, ten thousand grape vines, and a corresponding number of small fruits, ornamental stock, etc., besides the permanent plantations on the farm and in the horticultural grounds. During the winter, about 70,000 grafts of apples, pears and quinces have been made, and will be planted this spring. Some 60,000 cuttings of grape vines, and ten thousand cuttings of ornamental trees and shrubs; we have grown a variety of seedlings, especially honey locust, for hedges, and ten acres will be added to the nursery plantations. This has furnished our students with labor during all the time they could spare from their studies, and is thus aiding them in the best manner by giving them instructive employment at remunerative wages. But we need more facilities; the department very much needs a fruit house, comfortable packing shed, and a house for the Superintendent, so that all the labor can be performed under his immediate supervision; it also needs means of irrigation, cellars for taking care of stock, etc. The services of Mr. John C. Teas, an experienced nurseryman, have been secured at very low rates, and this has added to the reputation and facilities of the department. We are now fairly under way, and shall need but little help in the future. But a great deal, in fact *all*, depends on that help being given at the right time, and in the right place.

*Vineyard.*—The vineyard was properly cultivated, and yielded a good crop of grapes, but owing to the abundant crop of fruits of all kinds, these did not sell so readily, nor at such remunerative prices. About \$200 were realized from the sale of grapes. The new vineyard has been trellised, and all the usual operations performed, and the addition of many new varieties will make it a source of increased instruction and profit.

*Orchard and Fruit Garden.*—About one hundred dollars were realized from the sale of small fruits and \$100 from sale of orchard products. This could have been very much increased, as the orchard produced a very fine crop of apples, but as we have no fruit house, and no facilities for keeping them, a great portion of the apples were lost during the extreme winter. This again demonstrates the fact that we must have the facilities to do good and efficient work.

*Hedges.*—The hedges on the place were properly pruned, and new additions made. A piece of buckthorn hedge was planted as an experiment, to which will be added an experiment with the *Pyracantha*, and as about 50,000 honey locust were grown from seed, we shall also extend our plantations of this valuable hedge plant.

*Forestry.*—The different species of *Catalpa* were planted on a piece of waste land, to which will be added other forest trees. They made a satisfactory growth, and I am satisfied that the most durable fence posts can be grown from the *Catalpa Spinosa* in from five to seven years, and in a shorter time from the new *Catalpa* of Mr. John C. Teas, a fact which will be of great benefit to the farmers of the State, and which cannot be impressed upon them with too much force or persistency. Experience shows that every prairie farmer can grow his own timber in a very short time and at a very trifling cost; an interest which is lamentably neglected, and if it was fostered more, it would add millions of dollars to the wealth of the State. If we consider the fact alone, that our railroads are now paying 35 cents for good oak cross-ties, and that 1,200 ties can be grown on an acre of ground in ten years, for which they would gladly pay 50 cents per tie, on account of the imperishable nature of the *Catalpa* wood, it would seem strange that our farmers can not be awakened to the vast importance of the subject. The cost is trifling. Yearling plants can be bought at \$6 00 per 1,000; it will take 2,400, 4x4, to plant an acre, which will not take more cultivation and care in planting than an acre of corn, and this only for two years. The thinnings, after four years, will give them 1,200 good rails or stakes, worth at the lowest estimate, as much as will pay for planting and cultivating, and at the end of ten years they can cut 1,200 railroad ties, worth \$600, while the tops and trimmings will pay all their labor, and give them an abundance of the best fencing material. Can they not see that there is more money in this than in planting corn and sowing wheat?

*Exhibitors of Horticultural products*—I have considered it my special duty to attend to and work for the exhibitions of the fruits of the State, and to awaken an interest for them, as one of the best advertising mediums of the resources of our State. I spent nearly the entire vacation last summer, as far as my time could be spared from actual work and superintendence in my department, to induce our Horticulturists to make a creditable exhibition at the great fruit show of the Mississippi Valley Horticultural Society at St. Louis, which resulted in gaining the sweepstake premiums for the fruits of the State, and showing Missouri to occupy the front rank as a fruit producing State; and this fact, together with former exhibitions in which our State has taken a prominent part, alone enabled us to obtain from our Legislature an appropriation of \$2,500 for two years for the State Horticultural Society; which will furnish the means to still further represent the horticultural interests of the State at the meeting of the Am. Pom. Society at Boston this fall, and other occasions of similar interest.

In the classes of Pomology and Forestry, instructed by me during the winter, thirty students received theoretical and practical instruction, in the lecture room, the work shop, orchard, vineyard and fruit garden, and the work obtained there during spare hours and Mondays, has been a material as well as a practical help to the young men who come here without means, but an earnest desire to obtain knowledge, and the will to work, which will make them useful citizens of our commonwealth. Many of them intend to canvass during the summer vacation for the sale of nursery stock, and I hope that we may thus find a means to counteract the operations of the itinerant tree peddlers, and of gradually instilling better knowledge among the people of the State.

Among the donations of seeds and plants, grafts, etc., received during the year, I will name the Department of Agriculture at Washington, D. C., seeds and cuttings: Jacob Rommel, Morrison, Mo., valuable grafts and grape seedlings; R. F. Hynes, West Plains, Mo., buds of new peaches; G. C. Egging, Superintendent Public Parks, St. Louis, valuable seeds; Geo. W. Campbell, Delaware, Ohio, grape scions; J. W. Prentiss, Pultney, Stuben Co., N. Y., scions of new grapes; C. Kemper, Hermann, Mo., scions of apples; Ellwanger & Barry, Rochester, N. Y., valuable new trees; George Husmann, vines and scions; Nicholas Grein, Hermann, Mo., cuttings of new grapes; N. Bensing, Hermann, Mo., scions of apples; Cleveland Wine Co., Cleveland, N. C., scions of grapes; Hon. Chas. A. Witmore, San Francisco, Cal., grape seeds; and many others.

I think I may safely say that the Department has made satisfactory progress during the last year, although it cannot be expected to obtain its best results until more facilities are furnished. When the Superintendent of the Department has not even a house on the grounds to enable him to keep the work under his eye constantly, when he has no fruit room to store away the products of the orchard, no cellar to store young stock, not even a good packing house to shield the men and himself from the inclemencies of the weather, no means of irrigation to refresh the perishing plants, it becomes a task of no ordinary difficulty to even keep up courage and persevere, while it is an impossibility to do the best of work. Yet I live and labor on, in hopes that a future day may bring a more liberal spirit to our Legislature, and we do the best we can under the circumstances, confident that we are doing *some* good, if not *all* we would desire to do.

Respectfully submitted,

GEORGE HUSMANN,

Superintendent Department of Pomology and Forestry.

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## Farm Department--Report 1880-81.

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PROF. G. C. SWALLOW, *Dean* :

Our crops for last year were about 800 bushels of wheat, a good part of which was distributed for seed, and the remainder sold at from 75 to 90 cents per bushel. 1,600 bushels of corn, of which 400 bushels were sold for seed, including 350 of the Evans variety to the Commissioner of Agriculture at Washington. The remainder was consumed by our stock. 18 tons of hay, 250 bushels of oats, 4 acres of artichokes, which were dug by the hogs.

We have sold 30 hogs and 20 head of cattle.

Our growing crops are 50 acres of wheat, looking well, including 10 varieties, 10 acres of oats, 60 acres of corn, 4 acres of artichokes, 20 acres of timothy meadow and 30 acres of clover.

We have made 100 panels of plank fence and repaired a quantity of rail fence.

Our stock consists of 9 full blooded Short-Horned cattle, including 8 young bulls (which are for sale), 45 grade cattle, 1 year old and upwards, 1 full blooded Alderney bull, and 5 grade cows and heifers, 35 stock hogs and 50 sheep.

Our experiment with corn consisted of 16 varieties. The Evans still proves the best which can be seen by the following comparative table :

CORN TRIAL FOR 1880.

NAMES.	Weight of crop .....	Color of corn .....	Color of cob .....	Color of pith.....	Length of ear .....	Circumference of ear...	Circumference of cob...	How filled out.....	No. of rows in ear.....	No. of kernels in row...	Length of kernel.....	Width of kernel.....	Thickness of kernel....	Weight of cob .....	Weight of corn on ear..
Baden.....	285	W .....	W.....	W ...	9.0	6.2	3.6	Well.....	12	53	.50	.43	.16	1,643	9,661
Burpees Mammoth.....	200	W .....	W.....	W ...	9.3	7.2	4.6	Very well..	14	53	.54	.41	.16	2,841	10,396
Chester County Mammoth.....	272	Y.....	R or W	C W	9.4	6.5	4.2	Well.....	16	50	.56	.37	.18	2,368	9,665
Evans.....	301	Y or Y R	R or W	B W	9.4	6.8	3.7	Well.....	16	60	.60	.37	.16	1,781	10,901
Gold Dust.....	198	Y.....	R or W	C W	9.0	7.0	4.4	Well.....	16	50	.50	.35	.15	2,267	9,488
Golden Dent.....	277	Y.....	R or W	C W	9.8	5.5	3.5	Well.....	12	55	.47	.33	.16	1,287	7,022
Golden Yellow.....	275	Y.....	R.....	C W	9.5	6.4	3.7	Very well..	14	60	.58	.36	.17	1,560	9,584
Illinois Yellow.....	233	R Y.....	R.....	C W	8.6	6.5	3.5	Well.....	14	53	.54	.36	.20	1,649	8,841
Long John.....	280	W .....	R.....	C W	10.0	5.7	3.5	Well.....	12	44	.53	.44	.20	1,691	9,052
Pale Yellow.....	238	Y.....	R.....	C W	9.5	6.8	4.5	Well.....	16	52	.55	.41	.19	1,975	10,581
Proctor Bread.....	281	W .....	W.....	B W	8.0	7.6	4.4	Well.....	20	45	.57	.37	.17	1,868	10,608
Ragans White.....	204	W .....	W.....	C W	8.5	6.3	4.1	Well.....	16	55	.55	.38	.16	1,690	8,542
Ragans Yellow.....	243	Y.....	R.....	B W	8.6	7.2	4.3	Well.....	18	54	.57	.36	.18	1,949	10,842
St. Charles White.....	260	W .....	R.....	C W	8.5	6.7	4.0	Well.....	18	50	.52	.35	.16	1,554	8,341
Thompson.....	269	W .....	W.....	C W	8.0	6.7	3.6	Well.....	14	52	.64	.37	.18	1,560	9,224
Snow Flake.....	220	W .....	W.....	C W	10.0	6.3	4.6	Poor.....	16	48	.48	.33	.19	2,771	9,468

R. B. MADDEX, Farm Superintendent.

## XII. NORMAL SCHOOL.

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 FACULTY.

SAMUEL S. LAWS, LL. D., PRESIDENT OF THE UNIVERSITY,  
*Professor of Metaphysics.*

MISS GRACE C. BIBB, DEAN,  
*Professor of Pedagogics.*

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

GEORGE C. SWALLOW, LL. D.,  
*Professor of Natural History.*

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.*

DAVID R. MCANALLY, JR., A. M.,  
*Professor of English.*

MICHAEL M. FISHER, A. M., D. D.,  
*Professor of Latin.*

A. F. FLEET, A. M.,  
*Professor of Greek.*

JAMES SHANNON BLACKWELL, PH. D.,  
*Professor of Modern Languages.*

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 F. THOMAS, PH. D.,  
*Professor of Physics.*



SAMUEL S. LAWS, LL. D., *President of the University of the State of Missouri:*

SIR:—I beg leave herewith to submit a report of the number of students connected with the Normal College during the year 1880-81 :

FIRST SEMESTER.

Senior Pedagogics.....	17
Junior Pedagogics.....	41
Arithmetic.....	70
	<hr/>
Total.....	128

SECOND SEMESTER.

Senior Pedagogics.....	20
Junior Pedagogics.....	45
Arithmetic.....	62
	<hr/>
Total.....	127
	<hr/>
Total during the year.....	255

The entire number of students pursuing a course strictly professional is *eighty-two*. The number of such students connected with this department was, in the year 1879-80, *seventy-two*, and in the year 1878-9, *sixty*. The attendance of the current year shows, therefore, an increase over the attendance of last year of *nearly fourteen per cent.*, and over that of the preceding year of *nearly thirty eight per cent.*

The growth of interest in the Department has kept pace with the increase in numbers, and has, during the present year, been particularly gratifying. There are enrolled sixteen candidates for graduation, classed as follows :

Academic Seniors.....	3
Seniors of Elementary Class.....	13
	<hr/>
Total.....	16

May the 26th has been selected as the time for the commencement of the Normal College. Pres. J. Baldwin, of the Kirksville Normal School, has accepted an invitation to address the graduating classes on that occasion.

The custom of a separate commencement for the Normal College was, last year, revived after having for some time fallen into desuetude ; it tends to give individuality and unity to the normal work. The exercises at the commencement in May of last year were highly creditable to those taking part in them and to the Department generally.

The address to the graduates was made by G. L. Osborne, President of the State Normal School at Warrensburg. Miss Kate Hayes, of the Academic Senior Class, represented the classes as valedictorian. Miss Jennie Natrass appeared as the special representative of the Elementary Class, and Orations or Theses were presented by Messrs. Hilgeman, Sittou and Gillaspay.

The graduates of the Normal Department, at the commencement, May 25, 1880, were the following :

DEGREE OF PE. B., (Bachelor in Pedagogics.)

Henry B. Hilgeman, Ph. B. '80.....	8.73
William M. LaForce, A. B. '80.....	8.56
William F. Williamson, S. B. '80.....	8.56
Charles K. Sitton, Ph. B. '80.....	8.38
James A. Jones, A. B. '80.....	8.35
Kate Hayes, A. B. '80.....	8.27

DISTRICT SCHOOL DEGREE, PE. P., (Principal of Pedagogics.)

Rufus Gillaspv.....	9.31
William Albert Taylor.....	8.86
David Calbreath.....	8.53
Jennie Cleland Natrass.....	8.26
Andrew Reason Lyon.....	8.02
Noland Taylor.....	7.61
George Henry Nichols.....	7.50
Lewis P. Starke, (Class of 1878.).....	

The figures appended to the names indicate the average scholarship of the students as marked upon a scale of ten. This average is made up from all the studies pursued by the students during their connection with the University.

ACADEMIC NORMAL COURSE.

Students are graduated from two distinct Normal courses, one academic and the other elementary. The higher degree (Pe. B.) is conferred upon regular graduates of the University in one of the four academic courses who supplement their work with two semesters of Normal instruction.

The professional culture given to graduates of the University through their connection with the Normal College, is of the greatest value to the schools of the State, and therefore to the State itself. The establishment of Chairs of Pedagogy in various Universities here and abroad, sufficiently indicates that the importance of the association of professional study with the general scholarship and culture afforded by the higher institutions of learning, is constantly more and more appreciated by those best qualified to decide upon the necessities of educational systems.

To the graduates of the Academic Normal Courses of the University, the State should naturally look for teachers qualified alike by scholastic training and by professional skill to render it effective service in those important positions where directive power is primarily demanded. In the professional work of this class, as compared with that of the elementary class, we may reasonably expect a more thorough acquaintance with the historical development of various systems of education, a more complete apprehension of the principles of scientific pedagogy, a wider general culture, and consequently a more independent power to apply in practical education general principles to particular cases, in which power the real ability of the teacher is most clearly shown.

In order that the students of the Academic Normal Course may receive the full benefit in professional work, resultant from their previous scholastic culture and their mental maturity, and may thereby be better prepared for those positions of responsibility and influence to which they may justly aspire, I would recommend that the present plan of work by which the academic and elementary classes are combined for lectures in pedagogics during their Senior year be abandoned, and that separate courses of lectures be given to the two classes. By the adoption of this plan I am confident that the work of the department will be perfectly adjusted to the educational needs of the State, and that both classes of Normal students will be placed in a position to receive the particular instruction suited to their special needs.

Apart from the considerations already urged, and which are in themselves of sufficient weight, I would recommend the separation of the two classes as tending to obviate a serious difficulty now experienced in the adjustment of the time-table of the Normal School to the table of Synchronistic Curricula. A number of academic Seniors have been unable, by reason of a conflict of studies, to enter the classes in pedagogics, while others have only been able to enter through a highly inadvisable alternation of work during the First Semester.

A separation of the classes will enable us to arrange the hours of lectures in a manner much more satisfactory.

#### COLLEGIATE NORMAL COURSE.

The degree conferred upon completion of the higher normal course is that of Bachelor of Pedagogics (Pe. B.). The time required for the work of this course is six years. Its daily programme, until the senior year, corresponds with that of the four academic courses, as laid down in the table of Synchronistic Curricula; in the last year, however, pedagogics is added.

*First Semester.*—(Two hours per week)—School Economy, Methods of Instruction.

*Second Semester.*—(Five hours per week)—Methods of Instruction, History of Education, Science of Pedagogy.

The academic work required is indicated in the accompanying table of Synchronistic Curricula, which is that of the University proper; that it is sufficiently extended to fit teachers for the highest positions will be at once evident.

#### COMMON SCHOOL NORMAL COURSE.

##### FIRST YEAR.

*First Semester.*—Pedagogics, including Reading, Penmanship and Orthography, taught with reference to methods. School Economy.

Arithmetic—Fundamental Rules, Properties of Numbers, Common and Decimal Fractions, Denominate Numbers, Metric System, Percentage, Simple Interest.

American History and Government—Periods of Discovery, Settlement, Intercolonial Wars, Revolutions, etc.

English Grammar—Language Lessons, Blackboard Exercises, Daily practice in Orthography, Syntax and English Composition, Music.

Geography—Political and Physical.

Drawing (two hours per week)—1. Geometric plane problems. 2. Simple surface representation. One drawing per week from some real object.

*Second Semester.*—Pedagogics—Methods in Language Culture, English Grammar, Geography and Map Drawing and U. S. History.

Arithmetic—Compound Interest, Ratio and Proportion, Partnership, Involution and Evolution, Progressions, Annuities, Mensuration.

Botany—Descriptive, Structural, Systematic and Economic.

Rhetoric and Analysis—Composition, Dictation, Letter Writing, Analysis, Themes.

Essays will be required throughout the year. Students will be expected to illustrate, in practice, methods of instruction.

Drawing (two hours per week)—1. Topographical signs. 2. Lettering. One drawing per week from some real object.

## SECOND YEAR.

*First Semester.*—Pedagogics—Methods of Instruction in Arithmetic, School Economy, (ventilation and warming of rooms, seating pupils, etc., etc.)

Algebra—Elementary.

English History and Literature—Anglo-Saxons, Literary History in Ten Periods, Origin of Literature, etc.

Zoölogy—Elements of Comparative Anatomy and Physiology.

Entomology—Structure and Classification of Insects.

Vocal Music.

Chemistry—General principles, illustrated by experiments, discussion of the elements and their compounds.

Human Anatomy, Physiology and Hygiene.

Drawing (two hours per week)—Elements of ornamentation : 1. Line. 2. Surface : a. Simple surface representation ; b. Color. One drawing per week from real object.

*Second Semester.*—Pedagogics, School Economy—Order of Lessons, Arrangement of Programme, etc., History of Education, Science of Pedagogy.

Metaphysics—Psychology, Ethics.

Plane Geometry—Five Books.

Elements of Physics—Properties of Matter, Heat, Light, Electricity, Electro-magnetism, Electro-dynamic Induction, etc.

Teaching exercises.

Drawing—1. Perspective. 2. Type Forms of Historic (conventional) Ornamentation. One drawing per week from some real object.

Every phase of the work will also be treated with reference to blackboard illustration.

The degrees conferred by the Normal School, are :

I. Principal in Pedagogics (Pe. P.)

II. Bachelor of Pedagogics (Pe. B.)

III. Master of Pedagogics (Pe. M.)

The first is conferred upon successful completion of the two-year course, the second upon completion of the academic course, the third only after due examinations in the five schools of science and in any four of the five schools of language.

For admission to the elementary Normal class there are required entrance examinations in English and arithmetic. The work of this course consists essentially of a year spent in review of the elementary branches, with reference to such proficiency

therein as will meet the requirements of the school law,\* to which is added a year of strictly professional work in methods of instruction, school economy and the history and philosophy of education. The schedule given above represents the course leading to the elementary Normal degree (Pe. P.).

The subjoined time-table has been adopted for the work of the elementary class.

#### FIRST YEAR.

<i>First Semester.</i>	<i>Second Semester.</i>
9-10. Arithmetic and Book-keeping.	9-10. Botany.
10-11. U. S. History and Constitution.	10-11. Drawing. (2 lessons per week.)
11-12. Geography.	11-12. Arithmetic and Book-keeping.
12- 1. Pedagogics.	12- 1. Pedagogics.
2- 3. Drawing. (2 lessons per week.)	2- 3. Rhetoric and Analysis.
3- 4. Grammar.	3- 4. ———.

#### SECOND YEAR.

<i>First Semester.</i>	<i>Second Semester.</i>
9-10. English Literature and History.	9-10. Psychology and Ethics.
10-11. Pedagogics.	10-11. Drawing. (2 lessons per week.)
11-12. Chemistry.	11-12. Physics.
12- 1. Algebra.	12- 1. Geometry.
2- 3. Drawing. (2 lessons per week.)	2- 3. ———.
3- 4. Anatomy, Physiology and Zoölogy.	3- 4. Pedagogics.

A Thesis or Essay will be required of each candidate for graduation in either course, which must be filed with the University Librarian.

#### METHODS OF INSTRUCTION.

Instruction in the Normal Department is given principally in the form of lectures, upon which are based discussions by the class of the points presented; the comparative maturity of mind shown by our students of advanced standing and their earnestness, render these discussions of the greatest value. They cover the practical as well as the theoretical side of pedagogy. A primary aim of all work in this department is the development of independent thought, and students are encouraged to advance frankly and freely their own opinions even where differing materially from those ordinarily held. Incorrect views and crude opinions are rectified with comparative ease through such discussions.

Rosenkrantz's "Pedagogics as a System" has been used with success as the basis of discussion in scientific pedagogy.

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\*"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.

## NORMAL SOCIETY.

The Normal Society, organized early in the First Semester, has held weekly meetings for the discussion of topics connected with education; it has been conducted with dignity and ability, and will, I am sure, prove an important auxiliary to the Normal Department. It is a matter for regret that with the present pressure upon the accommodations of the University no permanent or appropriate hall can be given to this society.

## STATE CERTIFICATES.

A practical business advantage is afforded to graduates of the Normal Department of the University in their receiving from the State Superintendent of Public Instruction, 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 three 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.

## POSITIONS FOR GRADUATES.

While we are unable to promise positions to our graduates, we make every effort to assist them in establishing themselves in their chosen professions. The reports which we receive of the work of our alumni are most encouraging; they seem to indicate that our students leave the University with a laudable ambition to place themselves, through earnest and well directed effort, in the foremost ranks of the profession.

With the purpose of placing Boards of Directors in communication with teachers, we pay special attention to all letters of inquiry from persons desiring to secure the services of competent instructors. Many of our students are teachers of considerable experience, so that suitable selections may be made from their number for nearly all grades of schools.

Letters of inquiry should be addressed to me at Columbia.

All of which is respectfully submitted.

GRACE C. BIBB,  
Dean of Normal Faculty.

### XIII. LAW SCHOOL.

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#### FACULTY.

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SAMUEL S. LAWS, LL. B., (Columbia Col. Law School, N. Y.), LL. D.,  
*President of the University.*

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PHILEMON BLISS, LL. D., DEAN,  
*Instructor in the Law of Real Property, in Equity, in Practice and Pleading.*

HON. BOYLE GORDON, A. M.,  
*Resident Professor of Law, and Instructor in the Law of Contracts.*

JOSEPH G. NORWOOD, M. D., LL. D.,  
*Professor of Medical Jurisprudence.*

LIEUT. FRANCIS P. BLAIR, LL. B.,  
*Assistant Professor of Law.*

HON. ARNOLD KREKEL, U. S. DISTRICT JUDGE,  
*Lecturer upon Federal Jurisprudence.*

HON. HENRY S. KELLY, JUDGE OF THE 29TH CIRCUIT.  
*Lecturer upon Criminal Law, Pleadings and Practice.*

HON. SEYMOUR D. THOMPSON,  
*Lecturer upon the Law of Negligence.*

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#### MEMBERS OF THE LAW SCHOOL.

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##### SENIOR CLASS.

Anderson, James A.....	Arago.....	Nebraska.
Alkire, David S.....	Holt county.....	Missouri.
Alkire, Henry T.....	Holt	“ .....
Babb, Henry B.....	Boone	“ .....

Babb, Jeremiah G.....	Boone county.....	Missouri.
Beazley, Robert H.....	Chariton “ .....	“
Bottom, John T.....	Caldwell “ .....	“
Chapman, Al.....	Scott “ .....	Illinois.
Cole, John B.....	Scotland “ .....	Missouri.
Crumbaugh, James E.....	Boone “ .....	“
Davis, James R.....	Randolph “ .....	“
Denny, Joseph S.....	Howard “ .....	“
Ely, Thomas R. R.....	Atchison “ .....	“
Evans, Henry S.....	Washington “ .....	“
Hickman, James K.....	Louisville.....	Kentucky.
Herndon, William S.....	Platte county.....	Missouri.
Irvine, Leigh H .....	Holt “ .....	“
McGauhy, John F.....	Jonestown....	Mississippi.
McGhee, Frank P.....	Wayne county.....	Missouri.
Peery, Edwin H.....	Grundy “ .....	“
Pharis, Thomas A.....	Bates “ .....	“
Rodes, Joseph H.....	Monroe “ .....	“
Smith, Alvin J.....	Bates “ .....	“
Smith, Andrew J. ....	Fayette “ .....	Illinois.
Smith, Horace A.....	St. Clair “ .....	Missouri.
Shackleford, Walter S.....	Saline “ .....	“
Shackleford, Edwin D.....	Saline “ .....	“
Tapley, Joe., Ph. B.....	Pike “ .....	“
Taylor, Robert H.....	Helena.....	Arkansas.
Taylor, Dewitt C.....	St. Louis county.....	Missouri.
Wingfield, James.....	Saline “ .....	“

## JUNIOR CLASS.

Alexander, John.....	Linn county.....	Missouri.
Bell, Alexis D .....	Ralls “ .....	“
Byrd, Edw'n B.....	Monroe “ .....	“
Cowherd, William S.....	Jackson “ .....	“
Cook, Robert M.....	Grundy “ .....	“
Feris, Forrest G.....	Livingston “ .....	“
Franklin, Charles W.....	Pettis “ .....	“
Hendricks, Wallace.....	Fort Worth.....	Texas.
Kennedy, Lamourcus.....	Warren county.....	Missouri.
Lavelock, George.....	Ray “ .....	“
Lyford, Harry O.....	Atchison “ .....	“
Martin, Douglas.....	Macon “ .....	Minnesota.
Megown, John E.....	Ralls “ .....	Missouri.
Murry, John F.....	Boone “ .....	“
Pickreil, Eugene R.....	Gentry “ .....	“
Short, John F.....	Cole “ .....	“
Trice, Charles Y.....	Clinton “ .....	“
Trice, Henry T.....	Clinton “ .....	“



The following gentlemen received the degree of Bachelor of Laws at the Law commencement March 31st, 1881 :

Alkire, Henry T.	Irvine, Leigh H.
Alkire, David S.	McGauhy, John L.
Babb, Henry B.	McGhee, Frank P.
Babb, Jeremiah G.	Peery, Edwin H.
Beazley, Robert H.	Pharis, Thomas A.
Bottom, John T.	Rodes, Joseph H.
Chapman, Al.	Smith, Andrew J.
Cole, John B.	Smith, Horace A.
Crumbaugh, James E.	Shackleford, Walter S.
Davis, James R.	Shackleford, Edwin D.
Denny, Joseph S.	Tapley, Joe.
Ely, Thomas R. R.	Taylor, Robert H.
Evans, Henry S.	Taylor, Dewitt C.
Herndon, William S.	Wingfield, James.

#### 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. Young practitioners, and such others as pass examination in the studies of the Junior year, will be admitted to the Senior class.

#### COURSE OF INSTRUCTION.

The Law term commences on the second Monday 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 examinations upon the text-books by lectures upon special titles, and by the exercises of a moot court. The attention of those who desire to enter hereafter is specially called to our new course of study.

The course of instruction is extended chiefly by adding to the studies of the Junior year, and no one will be admitted to the Senior class, as candidate for a degree unless he shall be able to sustain an examination upon such studies. 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, the law of real property in part, international and constitutional law, logic and ethics. The text-books will be Broom & Hadley's Commentaries, Parsons on Contracts, Cooley on Torts and Washburn on Real Property, Vol. 1. The instruction in international and constitutional law, logic and ethics, will be principally by lectures, but with reference to, and examinations from, Woolsey's International Law, Creasey's English Constitution, Cooley's Treatise upon the Federal Constitution, Jevon's Lessons in Logic, Wayland's or Haven's Ethics. Inasmuch as the course of the Junior class of 1880-81 was less full than as here laid down, certain studies, as Torts and Vol. 1 of Washburn, will, for the coming year, be pursued jointly by both classes.

The Senior class will study the Law of Evidence, of Pleadings, of Real Property, of Bills and Notes, Medical Jurisprudence and the Elements of the Roman Law. The

text-books used will be Greenleaf's Evidence, Vol. 1, Bispham's Equity, Stephen on Pleading, Bliss on Pleading, Washburn on Real Property, Vols. 2 and 3, Parsons on Bills and Notes, Taylor's Medical Jurisprudence and Sanders' Justinian with Hammond's Introduction. If the class is found pressed for time, Hadley's Lectures, or some other more elementary work, will be substituted for Justinian. Other small and comprehensive works are used for the purpose of reviewing different branches, as Bishop on Contracts, Pollock on Partnership, &c.

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; if successful they will be entitled to admission to the Senior class.

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, the language, the spirit of the profession; this is, 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 Saturday, 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—most 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 will be permitted to argue a cause, if in default in any particular. 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 to the presiding Professor. Essays upon legal topics are also read each week.

#### DEGREE LL. B. (LEGUM BACCALAUREUS).

Those of the Senior class, who, at the close of their term, sustain an examination, will be entitled to the degree of Bachelor of Laws. The examination will be in writing, and the degree will be given or withheld, according to the proportionate number of failures.

Every candidate for this degree is required to file with the faculty a 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. 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, however clear and thorough they may be, but that the student should, as far as possible, be required to study the text-books 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 system has been combined with the other, and, in subjects, which for want of time and proper books, cannot be otherwise taught, it is chiefly relied on. Thus we have, in addition to the daily examinations upon text-books, usually one daily lecture, often two.

For further information address P. Bliss, Dean of Law Faculty, Columbia, Mo.

#### FINAL EXAMINATION.

The final examinations are made in writing by laying before each student a number of questions printed for the purpose and requiring the answers to be written in the presence of the examiner. The following are the questions upon real property, submitted at the last examination, with the answers of one of the best of the graduates, precisely as delivered to the professor. There are a few mistakes which it will take a

\*The act of March 5, 1874 [Laws of 1874, p. 182,] is as follows :

*Be it enacted, etc.,* "That the graduates of the Law Department of the University of the State of Missouri, or St. Louis Law School, shall be entitled to be enrolled as attorneys at law, in all the courts of record in this State, and all the inferior courts thereof, without further examination, on the production by them of their diplomas, or certificate of graduation duly authenticated."

The courts hold that this act, though not embodied in the Revised Statutes, is not repealed. The language of the act should be noted, as by it graduates are "entitled to be enrolled" without any certificate from the circuit clerk. The diploma is itself a "license."

pretty good lawyer to detect, but the paper shows excellent scholarship and the faculty feel gratified to be able to say that the whole examination upon this difficult title of the law shows that most of the class had made a diligent use of their time. Several of the papers were about as good, one or two of them receiving the same mark, as the one here submitted.

#### REAL PROPERTY.

1. Name the different estates of freehold and define each.
2. Give the words of limitation necessary at common law to create a fee and the effect of their omission.
3. Name and define the two principal life estates that arise by operation of law.
4. (a) What is an estate upon condition? (b) Distinguish it from an estate of conditional limitation.
5. (a) Define the two classes of contingent remainders. (b) Give an example of each. (c) How may the remainder become vested and how defeated before being vested.
6. In a contingent and in a vested remainder: (a) What is the precedent estate called? (b) What kind of an estate in each case may or must it be, as to whether freehold or not? (c) Why?
7. In what does an executory devise differ from a remainder?
8. (a) When was the Statute of Uses enacted? (b) What was its object? (c) What was its effect?
9. (a) Name the several conveyances made operative by this statute. (b) How in each does the statute effect the legal title?
10. In a feoffment to uses: (a) In whom was the seisin before the statute? (b) In whom under the statute? (c) How was the change made?
11. A feoffment is made to A and his heirs to the use of B for life, remainder to the use of the eldest son of C and his heirs who has no son, remainder to the use of D and his heirs. (a) What estates pass by the feoffment? (b) By whose seisin, in each case, are the uses supported? (c) What was the ancient and what is Sugden's doctrine as to the seisin which supports the use of the eldest son of C before his birth?
12. A feoffment is made to A and his heirs, to the use of B and C and their heirs whenever, and if they shall intermarry within a year. Where is the legal title before and after marriage?
13. A feoffment is made to A and his heirs: 1st, to the use of the feoffor and his heirs until the marriage of B and C; 2d, to the use of B and C for life, provided and when they shall intermarry; 3d, to the use of their children and their heirs. (a) State the several legal estates created by the feoffment. (b) By whose seisin are they converted into estates? (c) What are the several uses called?
14. (a) Under what circumstances will the statute fail to execute the use? (b) In such case what does the estate become or what is it called?
15. A feoffment is made to A to the separate use of B and an unmarried woman. (a) What estate does B take before and during marriage and after the death of the husband? (b) What estate would B take if the word "separate" were omitted?
16. In a mortgage of land: (a) What are the interests of each party called? (b) What rights has the mortgagor, and how can they be enforced or destroyed? (c) What rights has the mortgagee, and how can they be enforced or destroyed?

17. In actions for a lease for rent: (a) Between whom is there a privity of contract only? (b) Between whom is there a privity of estate only? (c) Between whom is there a privity both of contract and of estate?

18. What estates are created in Missouri by an attempt to create an estate in tail?

19. A limitation in a conveyance is made to the grantee for life, remainder to his heirs forever. (a) What estate is created at common law in the grantee? (b) What in his heirs? (c) What estates are created in Missouri?

20. (a) What formalities as to a conveyance of land are required in Missouri in order to admit the deed to record? (b) What is the effect of recording it without these formalities?

21. What is the effect upon the validity of a regular conveyance if it shall not be recorded?

22. Give the distinctions, if any, between constructive notice, actual notice and actual knowledge.

23. Give two points of difference between the English and Missouri law of descents.

24. Under what circumstances and for what purpose have the probate courts of Missouri jurisdiction in respect to land?

1. (a) Fee simple. (b) Fee tail. (c) Estate for life.

(a) A fee simple is an estate which the tenant holds to himself and his heirs forever, generally absolutely and simply, without mentioning what heirs, but leaving that to his own pleasure or the disposition of the law.—Blackstone. It is the highest estate known to the law, with the absolute power of alienation.

(b) An estate tail is an estate limited to a man and the heirs of his body. It may be further restricted to the heirs male of his body or the heirs female of his body, or to the heirs male or female of his body on a certain wife begotten, thus creating an estate male or female general, or an estate male or female special.

(c) An estate for life is one which the tenant holds for his own life or for the life or lives of another person or persons, or for an indefinite period which may last for a life. The first two are estates of inheritance, the third not of inheritance.

2. The word "heirs" was necessary at common law to create either a fee simple or fee tail, a fee tail being further restricted to heirs "of the body." The omission of them had the effect of giving the grantee an estate for life.

3. The two principal life estates arising by operation of law are Dower and Curtsy. Dower is the provision which the law makes for the widow out of the estate of her husband for her own support and the nurture of her children. It consists of one-third of the lands, tenements and hereditaments of which he was seised in fee simple or fee tail, during coverture. Curtsy is that estate to which the husband is entitled, upon the death of his wife, in the lands and tenements of which she was seised in possession, in fee simple or fee tail, during coverture, provided they have had lawful issue born alive which might have been capable of inheriting the estate.

4. (a) An estate upon condition is an estate granted, to which a condition is annexed, upon the happening of which the estate is to cease, whereupon there is a reversion to the grantor or his heirs.

(b) In an estate upon condition, the estate is not divested by the happening of the condition, but the breach of the condition must be taken advantage of and the estate defeated by an entry made by the grantor or his heirs. In case of an estate upon conditional limitation, the happening of the event upon which it is to be determined *ipso facto*, defeats the estate without any act done by the grantor or his heirs, and the estate immediately goes over to the person to whom it may be limited.

5. (a) Contingent remainders are first, those limited to take effect to a dubious or uncertain person when the event is certain; and second, those limited to take effect upon the happening of a dubious or uncertain event when the person who is to take is certain.

(b) 1. An estate to A for life, remainder to the oldest son of B, B yet having no son.

2. An estate to A for life, and provided B shall survive A, remainder to B in fee.

(c) The remainder may become vested by the uncertain person becoming known or coming *in esse*, or the dubious or uncertain event happening, at any time during the continuance of the particular estate or *so instante* that it determines. The remainder may be defeated before vesting by destroying the particular estate which supports it.

6. (a) The precedent estate is called the particular estate.

(b) In case of a vested remainder the particular estate may be a freehold (not of inheritance) or an estate for years, in case of a contingent remainder the particular estate must be a freehold.

(c) In case of a contingent remainder, if the particular estate were less than freehold, it could not supply the seisin to the remainder when the contingency happened.

7. An executory devise differs from a remainder in that it does not require a particular estate to support it; that it is created only by last will and testament; that by it a fee simple may be limited after a fee simple; that by it a remainder may be limited of chattel interests; that it may take effect *after* the termination of the preceding estate.

8. (a) The statute of uses was enacted in the 27th year of the reign of Henry VIII, 1535.

(b) Its object is said to have been to destroy uses. It is said by another author that its object was to transfer from the courts of equity their control over landed property. Another object was to prevent religious houses from holding property which they held by way of use in evasion of the Statutes of Mortmain.

(c) Its effect was to transfer the legal title to the *cestui que use* to be held by him in such quality, manner, form and condition as he before held in and to the use. It united the legal and equitable title in the *cestui que use*.

9. (a) 1st. Feoffment to uses.

2nd. Covenant to stand seized to uses.

3rd. Bargain and sale.

4th. Lease and release.

(b) In feoffment to uses after the seisin is transferred to the feoffer, the statute transfers the seisin from him and creates a legal estate in *cestui que use*. In covenant to stand seized, the seisin remains in the covenantor until the time when the use is to arise in the covenantee, then the statute transfers the legal estate to him. In bargain and sale, the payment of a consideration raises a use in favor of the bargainee, while the statute executes by transferring the legal title to him. In lease and release, the lessee comes into possession of a term by bargain and sale; after he is in possession, the lessor conveys to him the reversion.

10. (a) In the feoffee to uses.

(b) In the *cestui que use*.

(c) The statute transferred the seisin from the feoffee to the *cestui que use* in such manner, quality, form and condition as he before had in and to the use.

11. (a) B takes an estate for life, the eldest son of C a contingent remainder, D a vested remainder.

(b) The uses in each case are supported by the seisin in A and his heirs.

(c) The doctrine was anciently held by some that the seisin was in abeyance, by others that it was *in nubibus*, by others that enough seisin remained in or returned to the feoffee to supply the contingent use when it arose. Mr. Sugden holds that in this conveyance, operating by transmutation of possession, the seisin in the feoffee is sufficient to supply all the succeeding uses as they arise; that in passing through the feoffee, the seisin acquires the *capacity* of supplying the contingent uses. So the seisin in A would support the contingent use in the eldest son of C before birth.

12. Before marriage the legal title is transferred to A and his heirs, with a resulting use in favor of the grantor until marriage. Upon the marriage of B and C, the seisin in A and his heirs is sufficient to support the use raised in favor of them. The statute then executes the use by transferring the seisin and uniting both the legal and equitable estate in B and C.

13. (a) 1st. A fee simple in feoffor, determinable upon the marriage of B and C.

2nd. A life estate in B and C from and after their marriage.

3rd. A fee simple absolute in their children.

(b) By the seisin of A and his heirs.

(c) The uses are: 1st. Resulting; 2nd. Shifting; 3rd. Springing.

14. (a) According to Mr. Bispham, there are six cases in which the statute does not execute the use.

1st. Contingent uses which are not executed during the suspense of the contingency.

2nd. Uses limited of copy hold lands.

3rd. Devises to uses.

4th. Active trusts, such as to collect the rents and profits of an estate, or to preserve contingent remainders.

5th. Uses limited of chattel interests.

6th. A use upon a use.

(b) In such cases the estate becomes and is called a trust.

15. (a) Before marriage B takes a legal estate; during marriage she takes an equitable estate, her husband being made a trustee in equity; after marriage she again has the legal estate.

(b) Before marriage B would take a legal estate, during marriage the estate goes to the husband during her life, and after her death, provided they have had issue born alive, which might have been capable of inheriting the estate. If she survive her husband, she again takes a legal estate.

16. (a) The mortgagor's right is called the equity of redemption; the mortgagee's right, the right of foreclosure.

(b) The mortgagor has the right to redeem by paying the amount of the mortgage, and to file a bill in court to enforce his equity; his right may be destroyed by a failure to pay the debt before the time which the court allows for redemption has expired. His right may then be destroyed by foreclosure.

(c) The mortgagee has a right to foreclose at the proper time. This right may be destroyed by redemption.

17. (a) Between lessor and lessee.

(b) Between the lessor and assignee of the lessee, or between the lessee and assignee of the lessor.

(c) Between the lessor and lessee.

18. In Missouri an attempt to create an estate tail, creates an estate for life in the first taker, a fee simple in his heirs as tenants in common.



19. (a) The rule in Shelley's case applies here and gives the grantee a fee.  
 (b) His heirs take a fee simple by inheritance and not by purchase.  
 (c) In Missouri the grantee takes a life estate with remainder to his heirs in fee simple.

20. (a) It must be attested by two witnesses, acknowledged before a judge of a court having a seal, or by notary public or justice of the peace, certified by such judge, etc., that the acknowledgment was duly made.

(b) If recorded without these formalities, it does not impart notice.

21. If a regular conveyance is not recorded, it is valid as between the grantor and grantee and their heirs or devisees. It is also valid as to any purchaser who receives a subsequent conveyance from the grantor with actual knowledge of the first conveyance. But it is not valid against subsequent purchasers without notice for a valuable consideration.

22. Actual knowledge is the direct and unqualified knowledge of a fact, and may be included in the definition of actual notice. Actual notice is actual knowledge, or a consciousness of the means of acquiring such knowledge. Constructive notice is such notice as the law fastens upon a person from the facts and circumstances of the case, such as notice implied by the record of deeds of conveyance, etc.

23. By the English law the oldest inherits to the exclusion of the younger, whereas in Missouri they inherit without regard to the law of primo geniture. By the English law, from heirs of equal degree, males are preferred to females. In Missouri they inherit equally.

24. The probate courts of Missouri have jurisdiction over the sale and lease of lands by guardians, curators and administrators. They can have lands sold only for the payment of debts and legacies.



## XIV. MEDICAL SCHOOL.

(Founded 1845.)

## FACULTY.

SAMUEL S. LAWS, M. D., 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., LL. D.,  
*Professor of History and Philosophy of Medicine.*

JOHN H. DUNCAN, A. B., M. D., SECRETARY,  
*Professor of Materia Medica, Physiology and Practice of Medicine.*

WOODSON MOSS, M. D.,  
*Professor of Anatomy and Demonstrator.*

S. M. TRACY, M. S.,  
*Professor of Medical Botany.*

B. F. THOMAS, PH. D.,  
*Professor of Physics.*

J. M. ALLEN, M. D., Liberty, Mo.,  
*Lecturer on Diseases of the Gastro-Intestinal Canal.*

W. P. KING, M. D., Sedalia, Mo.,  
*Lecturer on Gynecology.*

J. E. TEFFT, M. D., Springfield, Mo.,  
*Lecturer on Diseases of the Urinary Organs.*

## EXAMINERS FOR MEDICAL DEGREES.

J. W. PRYOR, M. D., *Monroe District Medical Society.*

W. H. BRYANT, M. D., *Northwestern District Medical Society.*

J. W. TRADER, M. D., *Central District Medical Society.*

PINKNEY FRENCH, M. D., *Linton District Medical Society.*

## MEDICAL CLASS OF 1880-81.

<i>Name.</i>	<i>Residence.</i>
Bagby, Oliver.....	Missouri.
Ballard, Richard Thomas.....	Missouri.
Blackburn, Churchill J.....	Missouri.
Blackwell, Egbert Edwin.....	Missouri.
Bowen, James Knox Polk.....	Missouri.
Boyles, John Marcus.....	Missouri.
Burgwin, Abner Benton.....	Missouri.
Cole Joseph Kennett.....	Missouri.
Cox, Albert Henry.....	Missouri.
Doolittle, Marshall Erwin.....	New York.
Gordon, James.....	Missouri.
Grempp, Soloman Alfro.....	Germany.
Haller, John Panlett.....	Virginia.
Harris, Joseph Edwin.....	Missouri.
Hume, Charles.....	Missouri.
Kemble, William.....	Missouri.
*Lawless, Charles Burrell.....	Missouri.
Lougeay, William Henry.....	Missouri.
Nichols, George Martin.....	Missouri.
Petty, Joseph Wallace.....	Missouri.
Ragan, Sylvester.....	Missouri.
Reed, James Denny.....	Missouri.
Roberts, Fayette Brown.....	Missouri.
Rogers, Archie Bowen.....	Missouri.
Schenck, Franklin Ellis.....	Kansas.
Shock, Leslie Everett.....	Missouri.
Stierberger, Charles Rudolph.....	Missouri.
Sutton, Benjamin.....	Missouri.
Thompson, George Richards.....	Missouri.
Trice, Oliver Cutler.....	Missouri.
Wilcox, William Payne.....	Nebraska.
Williams, John Wilson.....	Missouri.
Wilson, Benjamin Franklin .....	Missouri.
Winn, Albert Clark.....	Missouri.

Regular Students, 34.

## IRREGULAR MEDICAL STUDENTS.

Cox, J. W.....	Missouri.
Dysart, F. T.....	Texas.
Farrar, M. C.....	Missouri.
Norris, W. A.....	Missouri.

Irregular Students, 4.

\*Deceased.

## STUDENTS OF PHARMACY.

Land, John B.....	Missouri.
Rowland, William P.....	Missouri.

Pharmaceutical Students, 2.

Total number of Students, 40.

## GRADUATES OF 1879-80.

Justus Ohage.....	St. Charles county, Mo.
Henry Douglass Grady.....	Miami, Mo.
Millard Payne Sexton.....	Columbia, Mo.
Clinton Henry Lubbock.....	San Jose, Cal.
George Elias Muns.....	Montgomery City, Mo.
William Maurice Moore .....	Paris, Texas.
Bennett Hillsman Clark, Jr.....	Hallsville, Mo.
Benjamin Franklin Carr.....	Mirabile, Mo.
Charles William Chastain.....	Marshall, Mo.

Valedictorian—George E. Muns.

The annual address was delivered by Dr. J. F. Hanna, of Ashley, Pike county, Missouri.

Soon after the University of Missouri was organized and in successful operation, the Curators established a *Medical Department*. This was done at the solicitation of a number of physicians residing in St. Louis, who desired to found a school in connection with, and under the fostering care of, the chief educational institution of the State. This founding of the Medical School was in the year 1845. "The Medical Faculty held their sessions, and delivered their instructions, in the city of St. Louis." This Medical School, familiarly known as McDowell's Medical College, continued for ten years, when, for reasons satisfactory to the Curators and the Medical Faculty, it was deemed best to discontinue the Department for the time, and allow the Faculty to procure from the Legislature an independent charter, empowering them to confer the usual medical degree. During the existence of this University school, (1845-1856), the number of students in attendance averaged one hundred annually.

In 1872 the Curators, at their meeting in December, determined to re-establish the Medical Department, and maintain it permanently, as one of the colleges composing the University. A Medical Faculty was appointed, and on the 17th of February, 1873, the school, thus re-organized, was formally opened for instruction.

The nineteenth course of instruction will begin on the second Monday of September, 1881, and continue until the end of the college year, the first Thursday of June, 1882.

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 text-books. 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.

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 patients 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.

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 his charge during his senior year, a case of labor.

#### GENERAL PLAN OF INSTRUCTION.

Instruction in this school is given by lectures, recitations and clinical teaching. The course of instruction has been greatly enlarged by the addition to the Faculty of four Special lecturers and one professor. The chair of *Medical Botany* has been established with Professor S. M. Tracy of the Agricultural College at its head. G. J. Engelmann, M. D., of St. Louis, Mo., will deliver a course of lectures on Gynecology, and hold clinics in connection therewith during next session. The collection of Medicinal Plants in the Greenhouse will be completed by the opening of the College in the fall, thus giving the students superior advantages for the study of this branch of Medical Science which is too often neglected.

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 is supplied with two superior Magic Lanterns, one of which is for the Calcium Light. For illustrating lectures with the above instrument, there are over 500 slides.

Among the advantages offered by this school, is the privilege granted 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 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 elastic 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 Elastic Man, a complete and accurate model of the male human body. The figure is five feet ten inches in height, and is composed of ninety-two separate parts, which may be detached from one another. It exhibits over two thousand details of the viscera, muscles, nerves, blood-vessels, etc.; in short, all that is usually embraced in a complete treatise on anatomy.

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

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

In addition to the above, are eight uteri, in elastic, 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 resumé 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.

#### PRACTICAL ANATOMY.

Every facility is afforded the student for the study of practical anatomy. Adequate provision is made for a supply of subjects sufficient for any 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 plates used by the late Dr. Crosby in his lectures; 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 in Medicine, on all the branches embraced in the curriculum of the school. They subject to examination 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 Monday in September, 1881; the Junior course will close the 1st Thursday in May, 1882, and the Senior course the 1st Thursday in June. 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 professions and to the institutions granting them diplomas. The fault rests originally with the primary schools, but it is, doubtless, a grave 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 Grammar (Harvey).
- (2.) Rhetoric (Hart).
- (3.) History of the United States (Swinton).
- (4.) Arithmetic (the four fundamental rules, denominate numbers and common fractions).

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 vital 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 student 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 the same year.* Before he is permitted to present himself before the Board of Examiners, he must either have attended two (2) courses of eight or nine months in this institution, or present tickets showing that he has attended *at least one* course in some regular reputable Medical College; and, in any event, must pass a satisfactory examination in the subjects embraced in the Junior course, previous to his entering the Senior class.

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—*Ashurst, Gross, Erichsen.*

PHYSIOLOGY—*Dalton, Flint, Carpenter.*

PRINCIPLES AND PRACTICE—*Flint, Niemeyer, Watson.*

MATERIA MEDICA—*Bartholow, Biddle, Farquharson.*

CHEMISTRY—*Fownes.*

OBSTETRICS—*Schræder, Playfair.*

DISEASES OF WOMEN AND CHILDREN—*Thomas, West, Smith.*

HISTOLOGY—*Frey, Rindfleisch's Pathological Histology.*

PATHOLOGY—*Virchow, Paget, Gross.*

TOXICOLOGY—*Taylor.*

OPHTHALMOLOGY—*Wells, Williams.*

OTOLOGY—*Toynbee, Turnbull.*

MEDICAL JURISPRUDENCE—*Taylor, Wharton and Stillé.*

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 to represent them as valedictorian, on commencement day; in the event that they fail to select a representative, the Medical Faculty will 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

J. H. DUNCAN, M. D.,

Secretary Medical Faculty, Columbia, Mo.



Missouri University

**SCHOOL OF MINES AND METALLURGY,**

Rolla, Phelps County, Missouri.

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ANNOUNCEMENT AND REGISTER.

**FOR THE YEAR ENDING JUNE 9th, 1881.**

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"BOARD OF CURATORS.

JOHN S. CLARKSON, A. M..... Columbia.....	}	Term expires Jan. 1, 1883.
JERRE C. CRAVENS, ESQ..... Springfield ...		
ALEXANDER M. DOCKERY, M. D..... Gallatin.....		

ELDER JOSEPH K. ROGERS, A. M..... Columbia.....	}	Term expires Jan. 1, 1885.
HON. JOHN WALKER..... Howard Co...		
A. M. MILLARD..... Rolla.....		

HON. JAMES S. ROLLINS, LL. D..... Columbia.....	}	Term expires Jan. 1, 1887.
CHARLES C. BLAND, ESQ..... Rolla.....		
WILLIAM H. LACKLAND, ESQ..... St. Louis.....		

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## FACULTY.

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*Adjunct Professor of Mathematics.*

MISS FLORENCE E. WHITING,  
*Assistant in Preparatory Department and Recording Secretary.*

PROF. THOMAS C. THOMAS,  
*Librarian.*

## GRADUATES.

Duncan, Gustavus H., C. E.....	1874	.....	Boulder, Col.
Gill, John H., C. E.....	1874	.....	U. S. Eng. Dept., Washington, D. C.
Pack, John W., M. E.....	1874	.....	Helena, Montana.
Deegan, Francis J., C. E.....	1875	..	Surveyor for St. L. & San Francisco R. R.
Hare, Almon W., M. E.....	1875	.....	Leadville, Col.
Emerson, Cyrus H., C. E.....	1876	.....	Dennison, Texas.
Garvens, Oscar E., M. E.....	1876	.....	Lead City, Dakota Ter.
Greason, John D., M. E.....	1876	.....	Ironton, Mo.
McGrath, John E., C. E.....	1876	.....	U. S. Coast Survey.
Minger, William C., M. E.....	1876	.....	Boulder, Col.
Ohmann-Dumesnil, A. H., M. E.....	1877	.....	M. D., St. Louis.
Pack, James A., M. E.....	1877	.....	Butte City, Montana.
Millsaps, Thomas H., C. E.....	1877	.....	South America.
Brown, Wilton R., M. E.....	1878	}	Assayer of Shakespeare Gold and Silver
			Min. Co., Shakespeare, Grant Co., New Mexico.
Grabill, Lee R., M. E.....	1878	.....	Rosita, Col.
Bean, William Y., C. E.....	1878	.....	Brownsville, Mo.

Coppedge, Lindsay L., C. E.....	1878	.....	Missouri & Western R. R.
Winters, Chas. F., M. E.....	1879	.....	Leadville, Col.
Hoyer, Rudolph C., C. E.....	1879	.....	U. S. Eng. Dept., City of Mexico.
Carson, Arthur C., M. E.....	1880	.....	Butte City, Montana.
Smith, Lorin X., M. E.....	1880	.....	Topog. Eng. Kansas City & Memphis R. R.

## LICENTIATES.

Blow, Peter E. (Anal. Ch.).....	1875	Supt. Granby M. and S. W'ks, Granby, Mo.
McGuire, John (Chem. and C. E.) .....	1875	Ast. Eng. Calumet M., Lake Superior, Mich.
Whiting, Florence E. (Math.) .....	1875	.....Teacher School of Mines.
Winters, Christian R. (Anal. Ch.) .....	1875	.....Leadville, Col.
Blanchard, Eliphalet (Anal. Ch.) . .....	1876	.....Steelville, Mo.
Thiele, Lewis W. (Anal. Ch. and Met.).....	1878	.....Silver Cliff, Col.
Briegel, Gustavus A. (Land Surv.).....	1878	.....Trenton, Mo.
Owen, John R. D. (Book-keeping).....	1878	.....Owen's Mills, Mo.
Tobien, John H. (Book-keeping).....	1878	.....Neosho, Mo.
Wetter, Edward T. T. (Gen'l Chem.).....	1878	.....Milwaukee, Wis.
Bishop, Jennie (Book-keeping) .....	1879	.....Rolla, Mo.
Bishop, Julia (Book-keeping) .....	1879	.....Rolla, Mo.
Hood, Tillie (Book-keeping).....	1879	.....Richland, Mo.
Gallaher, Phillip C. (Book-keeping) .....	1879	.....Rolla, Mo.
Sally, James B. (Book-keeping).....	1879	.....County Clerk's office, Rolla, Mo.
Wishon, Chas. (Book-keeping).....	1879	.....Rolla, Mo.
Lane, Thos. E. (Teacher's Certificate).....	1880	.....Rolla, Mo.
Snelson, W. H. (Teacher's Certificate).....	1880	.....Rolla, Mo.
Steine, Jno. H. (Teacher's Certificate).....	1880	.....Rolla, Mo.

## COURSES OF STUDY.

These Courses are all independent of each other, so that the student who wishes an education and not a Diploma or Certificate may pursue parts of all the Courses.

## TEACHER'S COURSE FOR FIRST CLASS CERTIFICATE. FIRST YEAR.

## FIRST SEMESTER.

Ray's Higher Arithmetic.  
Gen'l Grammar.  
Word-Analysis, *Swinton's*.  
Physical Geography, *Guyot's*.  
English History.  
Anatomy, Physiology and Hygiene, *Cut-  
ter's*.

## SECOND SEMESTER.

Botany, *Gray's*.  
Ray's Higher Arithmetic.  
Gen'l Grammar.  
Word-Analysis, *Swinton's*.  
English History.  
English Literature, *Hart's*.

## SECOND YEAR.

## FIRST SEMESTER.

Book-keeping *Rohrer's*.  
 Algebra, *Ficklin's*.  
 Geometry, *Davies' Legendre*.  
 Physics, *Peck's Ganot's*.  
 Theory and Practice.  
 Map Drawing.

## SECOND SEMESTER.

Rhetoric, *Hart's*.  
 Civil Government, *Townsend's*.  
 Algebra, *Ficklin's*.  
 Logic, *Coppee's*.  
 Chemistry, *Norton's*.  
 Physics, *Peck's Ganot's*.

PREPARATORY AND SPECIAL—FIRST DIVISION—MISS FLORENCE E.  
 WHITING—FIRST AND SECOND SEMESTER.

Hour.	Study.	Remarks.
9—10.....	Ray's Higher Arithmetic.....	The entire subject.
10—11.....	Rhetoric and Comp. (Hart's).....	The entire subject.
11—12.....	Eng. History & Civ. Gov.....	The entire subject.
12— 1.....	Gen'l. Gram. & Word Anal.....	The entire subject.
2— 3.....	Algebra (Ficklin's).....	First Term to Quadratics; 2nd finish.
3— 4.....	Book-keeping (Rohrer's).....	Through Merchant's Acc't.

LITERARY AND SPECIAL—SECOND DIVISION—PROF. R. W. DOUTHAT—  
 FIRST AND SECOND SEMESTER.

Hour.	Study.	Remarks.
9—10.....	German Drama.....	Written & Oral Translation, 80 Lessons.
10—11.....	German Reader and Conver.....	Written & Oral.
11—12.....	German Exercise Book.....	Written & Oral Translation.
12— 1.....	Latin Classics.....	Written & Oral Translation.
2— 3.....	Latin Exercises and Reader.....	Written & Oral Translation.
3— 4.....	Eng. Lit. and Logic.....	The subjects entire.
4— 5.....	Anat., Phys., Hygiene.....	Tuesdays & Wednesdays, entire subject.
4— 5.....	Book-keeping.....	For Banking, Railroad, steamboating, and Mining and Manufacturing Companies—on Thursdays, Fridays and Saturdays.

To those who complete the Teacher's Course and pass a creditable examination thereon, certificates of proficiency will be awarded, and we have the assurance of the State Superintendent of Public Schools that his certificate—first class for two years—will be issued to all those who receive the School of Mines' Certificate on this course. Thus double honors attach to the completion of the Teacher's course. Moreover, to those who do not expect to teach, this course furnishes all the studies required for a first class English education.

The Book-keeping required in this course is that of Merchants' Accounts for Retail, Wholesale and Commission; but to those who desire the fuller course, full instruction will be given in Banking, Railroadng and Steamboating.

Certificates will be issued on a Book-keeper's Course to all those who complete the following studies :

Word-Analysis, English Grammar, Higher Arithmetic, and Book-keeping *in all its forms* for Merchants' Accounts, Banking, Railroadng, Steamboating and for Mining and Manufacturing Companies.

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## PREPARATORY DEPARTMENT.

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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 which the common schools are able and willing to do, and candidates for admission to this department must, therefore, pass examination in the following branches. viz. : Spelling, English Grammar and Arithmetic.

The Preparatory Course is shown in the following schedule :

First Term.—Algebra, to Quadratic Equations, *Ficklin*; Arithmetic, *Ray*; Word Analysis, *Swinton*; Composition, *Swinton*; Physical Geography, *Guyot*; Physics, *Peck's Ganot*; and Drawing, Freehand and Ornamental.

Second Term.—Algebra, finished; English Literature, *Hart*; Logic, *Coppee*; Chemistry, *Norton*; Botany, Structural and Systematic, *Gray*; Rhetoric, *Hart*; and Drawing, Freehand and Ornamental.

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## FOR THE DEGREE OF MINING ENGINEER.

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### FIRST YEAR.

*First Term.*—Chemical Philosophy, General Chemistry, Blowpipe Analysis, Field Practice, Algebra, Drawing, Geometry.

*Second Term.*—General Chemistry, Analytical Chemistry, Determinative Mineralogy, Land Surveying, Physics, Drawing, Algebra, Trigonometry, Mensuration.

## SECOND YEAR.

*First Term.*—Analytical Chemistry, Quantitative Analysis, Mineralogy and Geology, Metallurgy, Higher Surveying, Drawing, Analytical Geometry, Descriptive Geometry.

*Second Term.*—Geology; Analytical Chemistry, Quantitative; Assaying, Metallurgy, Mine Engineering, Steam Engine, Drawing, Calculus, Shades, Shadows and Perspective.

## THIRD YEAR.

*First Term.*—Analytical Chemistry, Quantitative; Metallurgy, Mine Engineering, Mechanism, Stereotomy and Stone Cutting.

*Second Term.*—Analytical Chemistry, Quantitative; Graduation Thesis.

## FOR THE DEGREE OF CIVIL ENGINEER.

## FIRST YEAR.

*First Term.*—Chemical Philosophy, General Chemistry, Blowpipe Analysis, Field Practice, Algebra, Drawing, Geometry.

*Second Term.*—General Chemistry, Analytical Chemistry, Determinative Mineralogy, Land Surveying, Physics, Drawing, Algebra, Trigonometry, Mensuration.

## SECOND YEAR.

*First Term.*—Roads and Railroads, Higher Surveying; Drawing, Topographical; Analytical Geometry, Descriptive Geometry, Analytical Chemistry, Geology, Astronomy.

*Second Term.*—Mine Surveying, Steam Engine; Drawing, Mechanical; Calculus, Shades, Shadows and Perspective, Analytical Chemistry, Quantitative; (optional); Geology, Civil Engineering.

## THIRD YEAR.

*First Term.*—Field Work, Railroad Location, etc., Mechanism, Drawing, Mechanics, Stereotomy and Stone Cutting.

*Second Term.*—Practical Topography, Drawing, Assaying, Graduation Thesis.

## FOR THE DEGREE OF BACHELOR OF PHILOSOPHY.

## FIRST YEAR.

*First Term.*—Chemical Philosophy, General Chemistry, Blowpipe Analysis, Field Practice, Algebra, Drawing, Geometry.

*Second Term.*—General Chemistry, Analytical Chemistry, Determinative Mineralogy, Land Surveying, Physics, Drawing, Algebra, Trigonometry, Mensuration.

## SECOND YEAR.

*First Term.*—Analytical Chemistry, Quantitative Analysis, Mineralogy and Geology, Metallurgy, Higher Surveying, Drawing, Analytical Geometry, Descriptive Geometry.

*Second Term.*—Geology, Analytical Chemistry, Quantitative Assaying, Metallurgy, Steam Engine, Drawing, Calculus, Shades, Shadows, and Perspective.

## THIRD YEAR.

*First Term.*—Analytical Chemistry, Quantitative and Assaying; Metallurgy, Mechanics, Mechanism, Stereotomy and Stone Cutting.

*Second Term.*—Analytical Chemistry, Quantitative; Graduation Thesis.

## OPTIONAL COURSE.

OPEN TO ALL STUDENTS, BUT REQUIRED OF NONE.

Book-keeping, in all its forms, for Merchants' Accounts, Retail, Wholesale and Commission; and for Banking, Railroad and Steamboating.

Latin and Greek, according to the fullest course of first-class Colleges or Universities. The study of these languages may be commenced at the beginning of the first or second semester. The pronunciation given to Latin is either the German or the English, according as the student wishes to continue the study in Germany or the United States.

The principal modern languages, German, French and Spanish, are also taught; and to each the student may devote one, two, three or four years, taking an extended course in reading, writing and conversation. An effort is made to train the *eye*, the *ear*, the *tongue* and the *hand*, so that each student may read at sight any of these languages, understand them when they are spoken, pronounce them properly and fluently, and write them correctly and readily.

In Drawing, those who have a taste for the ornamental can pursue to any length Pen-and-Ink Sketching and Painting in Water Colors and Oil. These branches, although belonging, for the most part, to an æsthetic rather than to a useful education, nevertheless offer to young ladies and to young gentlemen of leisure the means of securing an accomplishment equal in every respect to that of music.

In addition to the course of Ornamental Drawing, those who so desire can obtain instruction in Architectural and Mechanical Drawing.

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## DEPARTMENTS OF INSTRUCTION.

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### MATHEMATICS.

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PROFESSOR THOMAS.

PREPARATORY YEAR—Algebra (Ficklin).

FIRST YEAR—Geometry (Davies' Legendre), Trigonometry (Olney), Mensuration (Vogdes).

SECOND YEAR—Analytical Geometry (Loomis), Calculus (Loomis), Descriptive Geometry (Davies), Shades, Shadows and Perspective (Davies).

THIRD YEAR—Mechanics (Peck), Stereotomy and Stone-cutting (Mahan).

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### GENERAL CHEMISTRY.

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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 semester, and is continued throughout the year. 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 class in general chemistry, and also for entering upon laboratory work, which is commenced the following year.



## FIRST CLASS.

The duties of this class continue throughout the year; there are four recitations each week. Chemical philosophy is first introduced and continued through a part of the first semester, and the application of arithmetic to chemistry is given a prominent place in this semester. Students are required to perform numerical examples, thereby fitting themselves for the solution of many questions constantly occurring in the advanced departments of analytical chemistry.

The remainder of the year is given to a complete course in theoretical chemistry. A careful study is made of the non-metallic and metallic elements, and important compounds of each. The latter part of the course is devoted to organic chemistry, with special reference to the chemistry of vegetable and animal life.

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 ANALYTICAL CHEMISTRY.
 

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## PROFESSOR WAIT.

*First Year.*—Blow-pipe Analysis (Elderhorst's Manual); Qualitative Analysis (Fresenius).

*Second Year.*—Quantitative Analysis (Fresenius); Quantitative Analysis (Fresenius).

*Third Year.*—Quantitative Analysis (Fresenius); Assaying (Mitchell).

Instruction in this Department is thoroughly practical, and extends throughout the first, second and third years. There is a commodious laboratory, supplied with necessary apparatus, also balance room and mineral collection. In the basement are furnaces, which are used in the assay of ores.

## 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 blow-pipe 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 blow-pipe, and enabling him to detect, with almost certainty, 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 given to him, including mixtures of salts, also alloys, ores of lead, copper, zinc, antimony, iron, etc., etc., soils, insoluble silicates and mineral waters.

Determinative mineralogy is also entered upon; the composition of minerals is ascertained by the blow-pipe.

## 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 work commences with the analysis of substances whose compositions are known; there is thus a check upon the accuracy of the student's work.

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) Cerussite; (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) Native bismuth; (31) Regulus; (32) Beryl; (33) Zicon; (34) Illmenite; (35) Chromite; (36) Salpetre soil; (37) 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 domestic valuation of the ores and the most prominent metals.

Special students may enter this department at any time, and may pursue, at their discretion, the study and analysis of any class of ores of 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.

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 METALLURGY,
 

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PROFESSOR WAIT.

The instruction in this department is given by lectures, supplemented by laboratory practice omitting Nos. 14, 15, 16, 32, 33, 36 and 37 of the list given under analytical chemistry, and is illustrated by diagrams, models and specimens. The course is introduced by zinc, and is followed by lead, silver, nickel, mercury, copper, iron and antimony. 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 required 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 solutions 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.

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\*Those in italics are *partial* analyses.

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 PHYSICS.
 

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The apparatus for illustration in this department is already very complete. The instruction, for the present, is divided between Professors Wait, Emerson and Jolley.

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 GEOLOGY AND MINERALOGY.
 

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In the preparatory year, the students have recitations and lectures and physical geography; in the first year, recitations and lectures in descriptive mineralogy, 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 gangues. These exercises are followed, in the second year, 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.

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 CIVIL ENGINEERING.
 

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## 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 semester 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 all its capabilities; the needle compass, the solar compass, the transit instruments, the leveling instrument, the sextant, the barometer, and the various tools used in drawing and plotting. Friday, and sometimes Saturday, of each week, is 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, or described in the books. 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 semester of the second year.

Gillespie's treatise upon Roads and Railroads, forms one of the studies of the Engineering Course.

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## GRAPHICS.

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### PROFESSOR EMERSON.

During the preparatory year, the students are instructed in the elements of drawing, with pen and pencil, according to the principles contained in Chapman's Drawing-book. They are also practiced in freehand drawing. These exercises develop the special tendencies of the student, and enable the Professor to judge in what direction his greatest strength lies, and where his weak points most need to be reinforced.

During the first year, the practice is in topographical drawing, with pen and India ink, representing the lines of contour of the earth's surface, showing the bounding curves which would limit the surface in case of a gradual rise of water; taken at every 5, 10 or  $x$  feet. The hatching lines of declivity are drawn; also, the various conventional representations of surface. The students are exercised in a carefully organized method of drill in printing, in order to acquire a rapid system of lettering—of essential importance in finishing maps, problems, title pages and mechanical drawings. There is also a careful study of the true standards of the three colors, with their secondary and ternary combinations, simultaneous contrasts, harmonies, unisons, aerial perspective, and the important practical application of laying on flat tints. This is followed by applications to colored topography, etc.

The second year's exercises are in construction of problems in descriptive geometry, and in shades, shadows and perspective. The problems are drawn with pen and India ink on demy drawing paper, and all are constructed on mathematical principles, displaying all the difficult problems of the intersection of curved surfaces, and the representations of warped surfaces, having two or three directrices.

In the third year, the subject of stereotomy is taken up, in its applications to the various problems of stone-cutting, and the construction of terre-pleins, ramparts, ramps and embrasures of permanent fortifications. There are also required drawings of bridges, furnaces, machines, their shadows and perspective, as they would appear to the eye, at a finite distance from the perspective plane, mathematically constructed and properly colored.

Those who possess the requisite taste for such subjects, may be exercised in pen, India ink and color drawings of landscapes, figures, etc., and be led to apply their acquirements to natural history.

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## MINE ENGINEERING.

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### PROFESSOR EMERSON.

This is taught entirely by lectures. The subjects of systems and attack and exploitation 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, the field and office work of the geological department, and by extended instruction in assaying and analytical chemistry, and in drawing plans and section of mines, and the result of the 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 all 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 semester, for incidentals and for the use of the library. Special and partial students are subject to the same charges; an exception, however, is made against those devoting their time to analytical chemistry or assaying. Such pay a small additional fee for chemicals consumed. All laboratory students furnish their own blow pipes, platinum crucibles and apparatus, silver and gold solutions, alcohol for heating purposes, and pay for apparatus damaged or broken, while in their service. A deposit, covering the value of the apparatus issued, is required to be placed in the hands of the treasurer by each laboratory student. This deposit, less the value of the breakage, 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 diploma, and a fee of \$1 for the certificate of proficiency.

The courses of study will be rigidly enforced on all students, candidates for the degrees of the institution. The professional degrees awarded are Civil Engineer (C. E.), Mine Engineer (M. E.), and Bachelor of Philosophy (Ph. B.). Students, not candidates for degrees, or special students, are admitted at any time, and are allowed the fullest liberty in the selection of their studies, provided always, that such shall have the equivalent of at least sixteen recitations, weekly. To these classes of students, certificates of proficiency are granted, on satisfactory examination being passed. These certificates and the diplomas are issued only at the public commencement.

## ADMISSION.

For admission to First Year studies, students must be at least sixteen years of age, and must pass satisfactory examination in all the regular studies of the Preparatory Year.

Special students, in any department, are admitted without previous examination.

Before matriculation and entrance upon the duties of the school, the treasurer's receipt for entrance fee, and for the incidentals of the semester, must be shown to the Director, and a card, properly endorsed, be procured from him. The Secretary of the Faculty will then place the student's name upon the roll, and furnish him with all necessary information.

The collegiate year begins on the third Monday in September, and an examination for admission to the *regular* course is held on Monday and Tuesday of the same week. There is no suspension of exercises, other than for examination, between the two semesters of the year.

Excellent boarding, at places approved by the Faculty, can be obtained at from \$2.50 to \$3.00 per week. A list of such places can be seen on application to the Secretary. The expenses for board may be reduced somewhat, by a judicious system of clubbing in rented rooms. The school has no dormitories under its control.

Patrons will please notice the following estimates :

Tuition, per term of five months.....	\$10 00
Board, fuel, washing, lights, etc.....	65 00
Books, from \$10 to \$15.....	12 50
Contingent expenses for laboratory students.....	10 00
	\$97 50

From this estimate it will be seen that no student needs over \$97.50 per term, and most students only \$87.50.

Parents should let their sons and daughters have very little pocket money ; they do not need much.

#### 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 Atlantic and Pacific Railroad, one hundred and thirteen miles southwesterly from St. Louis. The locality is pre-eminently healthy, 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 occurrence 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 eighth 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 equipments, 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 well furnished with apparatus, instruments, and other appliances for practical instruction and demonstration. It has a full supply of excellent survey-

ing and engineering instruments, physical apparatus, embodying the newest forms for illustration and research, together with diagrams and models for the illustration of metallurgy, and for engineering, topographical and ornamental drawing. The geological, mineralogical and technical collections are all rapidly increasing, and are already rich in specimens and products illustrative of the mineral industries of Missouri. 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. A good selection of technical periodicals is supplied to the reading room, and strong efforts will be made to keep the collection of these and of the books, up to the progress of the several departments. The same may be safely, promised for the apparatus, collections, models and other adjuncts to the proper working of a school of this character.

The class and other rooms of the building are comfortably furnished, well lighted and well ventilated, and are heated by hot-air flues, from furnaces in the basement. 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, the office, library, reading and mathematical rooms; and in the third story, are the engineering room, those of the professors of applied mathematics and English, and a large drawing room, with ample accommodations for upwards of eighty students. The basement contains the assay furnaces and other appliances for metallurgical work.

With regard to the equipment, organization and effective character of the work of the school, the following from the official report of the visit and examination of the Committee on Mines and Mining, of the Twenty-Eight General Assembly, may be cited:

“We do not intend to eulogize this Institution with high-sounding phrases, nor do we mean to underrate the difficulty that each undertaking meets with, during its incipient stage; but with pride we acknowledge the unanimous opinion of your Committee, that this school is highly worthy of the people of the great State of Missouri, and in full coincidence with the intent which led to its creation. We may look forward with well-founded hopes that, by the practical working of this school, our dormant mineral wealth will meet the attention of the entire civilized world.

“The force of professors employed to teach the various branches of learning, has been selected with more than usual care, and their ability and devotedness justify the highest expectations.

“Analytical Chemistry, Mineralogy, Geology, Metallurgy, Mathematics, pure and applied; Drawing, artistic and mechanical; Civil and Mine Engineering, Military Tactics, etc., form the main branches of study in this Institution.

“The apparatus, mathematical and philosophical instruments, are all of the latest and most approved kind, and their selection shows excellent tact; the laboratory is in good working order, and the library, consisting mainly of technical works, contains a large number of rare volumes.

“The morals of the students are vigilantly looked after, and the remarkable progress made by them is not only noteworthy, but also a source of gratification to your Committee.

“The maps of surveys and mines, the drawings of furnaces and reduction works, prepared by the more advanced students, display art and mastery on the subject of their study and labor.

“A remarkable feature of the school consists in combining theory with practice.

EIGHTH COMMENCEMENT OF THE SCHOOL OF MINES.

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THURSDAY, JUNE 9th, 1881.

PROGRAMME.

PRAYER—MUSIC.

CONFERRING Degrees and Certificates..... President Laws.  
 ADDRESS on part of Graduates..... Mr. E. B. Summers.  
 ANNUAL Oration..... Col. A. W. Slayback.

MUSIC.

DEGREES CONFERRED.

CIVIL ENGINEERS.

SMITH, LORIN X., Rolla, Mo.—Subject of Thesis: “*Interoceanic Transit.*”  
 SUMMERS, EDWARD B., Kentucky.—Subject of Thesis: “*Location, Construction and Drainage of Common Roads.*”

MINING ENGINEERS.

WILSON, W. W., Rolla, Mo.—Subject of Thesis: “*Metallurgic Treatment of Argentiferous Zinc and Lead Ores.*”

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CALENDAR.

1881.

September 19, Monday..... Winter Semester begins.  
 December 22, Thursday..... Close for Christmas Holidays.

1882.

January 3, Tuesday..... Exercises resumed.  
 January 30, Monday..... Half-yearly examination begins.  
 February 4, Saturday..... Half-yearly examination closes.  
 February 6, Monday..... Summer Semester begins.  
 May 29, Wednesday..... Yearly examination begins.  
 June 6, Tuesday..... Yearly examination closes.  
 June 8, Thursday..... Annual commencement.



## XVI. SCHOOL OF ENGINEERING.

## FACULTY.

SAMUEL S. LAWS, LL. D., PRESIDENT,  
*Professor of the Sciences of Mind.*

THOMAS J. LOWRY, S. M., C. E., DEAN,  
*Professor of Civil and Topographical Engineering.*

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

GEORGE C. SWALLOW, M. D., LL. D.,  
*Professor of Geology.*

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

LIEUTENANT FRANK P. BLAIR,  
(Detailed from the Regular Army,)  
*Professor of Military Science and Tactics.*

CONRAD DIEHL,  
*Professor of Free-hand and Topographical Drawing.*

P. BLISS, LL. D.,  
*Professor of Law.*

S. M. TRACY, M. S.,  
*Professor of Economic Botany.*

## 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 or action of the engineer is so broad and diversified that it is impossible for any one to become proficient in all the various specialties into which the profession has been subdivided, by social necessities and common consent. 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. 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—Surveying and Astronomy.

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 and 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

ENGINEERING: TABLE OF SYNCHRONISTIC CURRICULA.

10-100

COURSES. Their Degrees.	Course in Civil Engineering. C. E.	Hour.....	Course in Topographical Engineering. Top'l Eng'r.	Hour.....	Course in Surveying and Astronomy. Surveyor and Astronomer.
SECOND SEMESTER.	Project and Thesis..... Drawing design of structure $\frac{3}{4}$ Hydraulic Engineering ..... Civil Engineering ..... Law of Contracts..... Economic Geology $\frac{1}{2}$ .....		Drawing, Project and Thesis. Law Contracts..... Geodesy ..... Hydrography and Hydraulic Engineering .....		Chart and Thesis ..... Drawing ..... Observatory Astronomy..... Geodesy..... Road and R. R. Surveying.....
FIRST SEMESTER. SENIOR YEAR.	Mechanical Drawing $\frac{1}{2}$ ..... Mineralogy and Logic $\frac{1}{2}$ ..... Steam Engine $\frac{1}{2}$ ..... Quantitative Analysis..... Civil Engineering..... Applied Mechanics $\frac{1}{2}$ .....		Colored Topography $\frac{1}{2}$ ..... Mineralogy and Logic $\frac{1}{2}$ ..... Magnetic and Meteorological Surveying $\frac{1}{2}$ ..... Hydraulic Engineering ..... Chart Projections $\frac{1}{2}$ ..... Navigation, Maritime and Coast Surveying.....		River Surveying..... Drawing ..... Astronomy, Spherical and Practical..... Method of Least Squares ..... Geodesy.....
SECOND SEMESTER.	Qualitative Analysis and Blow-piping $\frac{3}{4}$ ..... Sextant Astronomy $\frac{1}{2}$ ..... Descriptive Geometry—Shades, Shadows and Perspective.. Chemistry..... Theoretical and Applied Mechanics .....		Sextant Astronomy $\frac{1}{2}$ ..... Elements of Mechanism $\frac{1}{2}$ ..... Geological Surveying, Economic Geology and Physical Geography..... Shades, Shadows and Perspective..... Triangulation, Topography and Topographical Drawing .....		Geological, Magnetic and Meteorological Surveying. Pen and Colored Topography Sextant Astronomy $\frac{1}{2}$ ..... Maritime and Coast Surveying
FIRST SEMESTER. JUNIOR YEAR.	Descriptive Geometry..... Road, R. R., and Higher Surveying ..... Chemistry and Laboratory.... Calculus, and Method of Least Squares .....	III II	Free-hand Drawing $\frac{1}{2}$ ..... Method of Least Squares $\frac{1}{2}$ ..... Descriptive Geometry ..... Chemistry and Laboratory.... Land, Road and R. R. Surveying .....	III	Triangulation and Topography Free hand Drawing, Shading and Perspective ..... Chart Projection $\frac{1}{4}$ ..... Topographical Drawing ..... Land Surveying .....

are very complete. Students taking the course in topographical engineering will have an opportunity, and be required to perform work as accurate 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 surveying and astronomy is intended to fit students for trigonometrical, topographical, geological and magnetic surveying, practical astronomy on land, nautical astronomy and navigation, maritime surveying, and the surveys of rivers, lakes, bays and coasts—and thereby prepare them to assist in the government surveys of our coasts, lakes and great rivers of the Mississippi basin, and also the geodetic topographical and geological surveys of our territories, all of which are now under way. It will be observed that this course makes a specialty of the *surveys* of the lands, the waters and the heavens [practical astronomy], and the *location* of positions, on land and water, by observations on either terrestrial or celestial objects—and that the student is not made acquainted with engineering *construction*.

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 engineering 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 en-

large, by careful reference and judicious reading, their acquaintance with the subjects presented in the text-books and lecturers.

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 specially asked to the reports of Professors Schweitzer and Ficklin (in this catalogue).

Our present professional force and facilities for instruction are such that we can offer a complete theoretical and practical treatment of the above great subdivisions of engineering, surveying and astronomy.

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## REPORT.

To S. S. LAWS, LL. D., *President*:

SIR:—I submit the following report of the Engineering Department for the year ending June 2, 1881:

Senior class.....	{	Regulars.....	6
	{	Irregulars.....	1
Junior class.....	{	Regulars.....	6
	{	Irregulars.....	4
Sophomore class—Irregular.....			24
Total.....			41

In addition to the regular professional work with the above classes, I taught, during the second semester, the class in mechanics, consisting of eleven academic and five engineering students.

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.

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-foot contour lines with the greatest

accuracy. This system of triangulation and plane-table topography, thus begun, will next year be extended over the agricultural farm; and after that, it is hoped, will be gradually expanded till it eventually covers the entire State of Missouri.

Prof. F. P. Blair has rendered valuable assistance in the engineering work of this department. He has instructed the class in descriptive geometry during the entire session, and with admirable success.

Through the kindness of Major C. R. Suter and Lieut. S. S. Leach, of the U. S. A. Engineer Corps, and Senators Vest and Cockrell, and Representatives Clark and Buckner, this department has, during this and last sessions, received a complete set of charts of the Mississippi river from the mouth of the Illinois river to the Gulf of Mexico; also a complete set (in duplicate) of the reports of the Chief of Engineer U. S. A. from 1871 to 1880 inclusive; and also copies of other important engineering pamphlets and books issued by the U. S. Government.

Mr. C. P. Patterson, Supt. U. S. Coast Survey, presented to the University Library this session, a complete set of the charts of the U. S. Coast Survey, numbering 315; and the library has placed these charts in the engineering room for the use of the department.

From "The Missouri Valley Bridge and Iron Works," Leavenworth, Kansas, this department has received this year, a complete set of drawing and working plans of the bridge and roof trusses manufactured by that company.

The department is also under obligations to Prof. G. C. Swallow, LL. D., for coast survey charts and photographs of bridges.

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. The progress of the class in this subject is highly gratifying.

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 demand engineering and chemical skill, has already increased, and promises to further increase the number of students in this department.

Very respectfully and truly yours,

THOMAS J. LOWRY,  
Dean of the Faculty.

## XVII. SCHOOL OF MILITARY SCIENCE AND TACTICS.

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PROFESSOR BLAIR.

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The total number of students enrolled in this department was fifty-one (51).

The conditions attached to entrance were continuance in the department during one scholastic year, attendance to be regulated as in the other departments, and finally the purchase of a uniform.

This latter amounted in all to something less than twenty-three dollars *per capita*. As the uniforms were worn almost habitually, the ultimate effect was to throw no extra burden of expense on the student.

For the purposes of instruction in drill, the students were organized into a company of infantry and two detachments of artillery. They were then instructed in the school of the soldier, school of the company, and skirmish drill in infantry tactics; target practice; and in the service of foot batteries in artillery tactics.

During the winter months, when the weather was unfit for drill, instruction was given in the main principles of strategy and grand tactics, the conduct of armies on the march and in the field, the practical application of those principles by the great commanders in their campaigns and battles, and the elements of permanent and field fortifications.

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## XVIII. SCHOOL OF ART.

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PROFESSOR DIEHL.

FIRST YEAR.

1.—Recognition, naming, and representation of all surface-forms by which regular solids are bounded. 2.—Laying out of 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 sensations 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 con-

struction. 4.—Representation of projecting and inverted surfaces by gradations of light, in light, shade and shadow. 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. 5.—Style in ornament. 6.—Orders of Greek architecture. 7.—Gothic tracery. 8.—Anomalous vagaries harmonized by art. 9.—The line, considered as the only means for the portrayal of motion and emotion. 10.—Pictorial representation of objects at home—*one per week*.

The expenses incident to this study are :

1. Drawing-book.....	10 cents.
2. Package practice paper, per 20 sheets.....	10 cents.
3. No. 4 Pencil (Anchor 5 cents, Faber 10 cents).....	05 cents.
4. Three cakes of water-colors.....	60 cents.
5. One box instruments.....	50 cents.
6. Three brushes.....	15 cents.
7. Manual, Linear drawing No. II.....	75 cents.

Total..... \$2 25

The book and paper will, when properly used, last one year; the water-colors from two to three years.

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## REPORT.

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SAMUEL S. LAWS, LL. D., *President of the University of the State of Missouri:*

DEAR SIR:—In this, as in my last report, I would respectfully present. That towards the end of the first semester there was a great falling off of students in my Department; but, whilst in the year of organization of the work, it was on the part of students who had entered upon the study optionally, i. e., of such as did not have the study laid down in their course, this year it was occasioned by the fact adduced by a preliminary examination, that of a probable failure to make a passing grade.

It does not lie in the power of a teacher to go beyond a comprehensive presentation of the subject matter under consideration, its mastery, or rather its assimilation depends on the earnest individual effort on the part of the student.

The lack of this latter initiative may be ascribed to three causes, viz: 1. Want of preparation for the work; 2. Exaggerated notions of the difficulties attending the study; 3. Absence of a just appreciation of the importance and value attaching to the mastery of its elements, greatly owing, no doubt, to the lack of precedent.

The amount of work laid down for the year in an Academic Course, is greater than it would be for classes in the Common Schools, and hence the same amount of time for class-drill can not be expended in the former, that is necessary for the younger pupils of the latter.



The practical work, including ‘Dictation Exercises,’ and practice in the process of pictorial representation has been attended with greater success than has that of “Geometric Construction.” To compensate for deficiency in the latter, however, that work which to the best of my information has never been attempted on a general scale, outside of professional Art Schools, to wit : The “pictorial imitation of real objects,” has met with a success that surpassed my most sanguine expectations. Many of the returns made, are studies of so faithful a nature that they would do credit to professional Art Students; and many of their authors are both prepared and desirous to enter upon professional art work, but owing to the lack of room, models and other appliances, this advantage cannot be extended to them. One of the Students, Mr. E. Pollard, has made a more intelligent effort in “blocking out” and “massing” the surface of a plaster cast, than I have witnessed on the part of any professional art student as a first effort.

Respectfully Submitted,  
 CONRAD DEIHL,  
 Professor of Art,

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## XIX. COMMERCIAL SCHOOL.

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### BOOK-KEEPING.

Prof. J. P. Royal, a practical accountant and an experienced teacher of book-keeping, has been engaged to take charge of this Department, and as the appropriation by the State Legislature is inadequate to meet all the expenses of the University, it is necessary for the student taking this branch, to pay an extra charge for his instruction.

The grade obtained in this department is accepted by the Faculty as part of the students school work.

The course of instruction embraces single-entry and double-entry book-keeping as applied to wholesale and retail merchandising, jobbing, importing, shipping, commission, manufacturing, farming, company accounts, the opening and closing of books partnership settlements and mercantile forms, including drafts, notes, bills of exchange, accounts-current, accounts-sales, etc., together with the most modern and approved forms of books in their adaptation to the various kinds of business.

Oral and individual instruction is given each day. No text-book, from which a student may copy his work, is used, no elaborate treatise to study, but he is given a printed card containing the fundamental rules, definitions and principles; and he is furnished 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. Thus the actual work of the counting house is 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.

#### EXPENSES.

Tuition per semester is \$10 payable in advance. Students pursuing a regular course in the University, whose curricula include book-keeping, are admitted at half rates. All stationery needed is furnished by the teacher free of charge.

Persons who desire to do so, may enter as *special students in book-keeping*, without joining other classes in the University, and, by devoting their whole time to it, may acquire, in a very short time, a thorough knowledge of the subject.

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### REPORT.

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S. S. LAWS, LL. D., *President State University:*

DEAR SIR: I have the honor to submit to you the following report of the work done in the Department of Book-keeping for the year ending June 2, 1881:

During the first semester forty-seven students were enrolled, twelve of whom attended only a portion of the time, varying from two to fourteen weeks; eleven were awarded certificates, twice as many more became fairly proficient, and fourteen entered the second semester to complete a more elaborate course than could be accomplished in one semester.

Forty-six students entered during the second semester, of whom ten completed the more condensed course required for the Normal degree; eight are entitled to certificates for work already accomplished, and twenty-eight are candidates of whom twenty-three will probably be entitled to certificates by the close of the term.

To each student who completes the course and attains a grade of eighty-five, is awarded a neatly printed certificate, containing a colored print or cut of the University building in the back ground, with these words:

“UNIVERSITY OF THE STATE OF MISSOURI.

\* \* \* \* Has completed a condensed course of

DOUBLE-ENTRY BOOK-KEEPING

In this Institution, and I believe he is now competent to correctly conduct the books of any ordinary mercantile business.

Columbia, Mo., \_\_\_\_\_ 1881.

J. P. ROYALL,

Teacher of Book-keeping.”

The following is a list of those to whom certificates were awarded during the first semester:

Banks, Wm. R.	Merritt, J. J.
Baumgartner, J. P.	Miller, Chas. B.
Bellows, Geo. P.	Mosby, W. S.
Campbell, H. F.	Wright, Lincoln
Land, J. B.	Winning, W. E.
Lavelock, Geo. W.	

The following are entitled to certificates for work accomplished prior to April 18, 1881:

Dayton, Wm.	Hines, Wm.
Donlin, W. J.	Lanpher, Wm.
Fultz, J. C.	Potter, Chas.
Gates, G. W.	Tucker, John S.

The following is a list of candidates who will probably complete the course and be awarded certificates at the close of the year:

Alexander, Curtis	Bedford, A. C.
Barnes, T. M.	Conkiing, M. R.
Dusenberry, R. D.	Reid, G. M.
Gauldin, J. B.	Shireman, Frank
Gungoll, Emil	Shelley, I. R.
Hays, W. L.	Turk, J. C.
Harris, John H.	Tucker, John S.
Henderson, Frank L.	Williams, W. P.
Heskett, J. W.	Windsor, John W.
McMacken, Chas.	Webb, J. G.
Norris, Walter H.	Youmans, Frank A.
Pollard, Enos.	

23.

Respectfully yours,  
 J. P. ROYALL,  
 Teacher of Book-keeping.

UNIVERSITY LIBRARY.

To S. S. LAWS, LL. D., *President of Missouri State University:*

SIR:—The following is submitted as the fifth annual report of the Librarian of the University:

ACCESSIONS FOR 1880-81.

SOURCE.	B.....	P.....	SOURCE.	B.....	P.....
Academy of Medicine, N. Y., in ex.	.....	1	Agricultural College, Kas., in ex.	.....	1
Agricultural Board, Conn., in ex.	1	.....	Alumni Society, M. S. U.	.....	1
Agricultural Board, Ill., in ex.	1	.....	Amherst College, in ex.	.....	1
Agricultural Board, Kansas, in ex.	1	1	Ark. Ind. Uni., in ex.	.....	1
Agricultural Board, Ky., in ex.	2	.....	Athenæan Society, pur'd.	9	.....
Agricultural Board, Mass., in ex.	1	.....	Ayer and Sons.	.....	3
Agricultural Board, Mich., in ex.	4	.....	Bates, J. P.	.....	1
Agricultural Board, Mo.	1	.....	Boston University, in ex.	.....	1
Agricultural Board, N. Y., in ex.	1	1	Bowditch, H. J.	1	.....
Agricultural Board, N. C., in ex.	1	.....	Bowdoin College.	.....	1
Agricultural Board, Penn., in ex.	1	.....	Brockhaus, F. A.	.....	2
Agricultural Board, Tenn., in ex.	1	.....	Brown, T. S.	.....	1
Agricultural Board, Verm't, in ex.	1	.....	Christian College, in ex.	.....	1

## ACCESSIONS FOR 1880-81—Continued.

SOURCE.	B....	P....	SOURCE.	B....	P....
Cockrell, F. M.....		6	St. Johns College, in ex.....		1
College of the Holy Cross, in ex.....		1	St. Louis Law School, in ex.....		1
College of our Lady of Angels, in ex.....		1	St. Louis University, in ex.....		1
Cornell University, in ex.....		1	St. Louis Public School Lib.....		1
Dep't of Public Work, Chicago.....		1	Shanklin, W. S.....	1	
Downey, S. W.....		1	Sinnickson, R.....		1
Drury College, in ex.....	2	8	Smithsonian Institute.....	2	
Edgar, G. P.....		1	Stevenson, R. F.....	1	
Fair Association Sweet Springs..		1	Swallow, G. C.....	4	
Foote, A. C.....		1	Swarthmore College, in ex.....		1
Franklin College, in ex.....		1	Switzler, W. F.....	6	
Gillman, H.....		1	Syracuse University, in ex.....	1	
Hamilton College, in ex.....		1	Todd, R. L.....	27	52
Harvard Club.....		1	Trinity College, in ex.....		2
Hayes, S.....	7		U. S. Bureau of Ed.....	2	1
Historical Society of Wis.....		2	“ Bureau of Navigation.....	1	
Howard University, in ex.....		1	“ Bureau of Statistics.....		5
Hudson, H. N.....		1	“ Dept. of Agri.....	2	
Ill. Ind. Uni., in ex.....		1	“ Dept. of Engineering.....	7	1
Jefferson Med. College.....		2	“ Dept. of Interior.....	51	4
Johns Hopkins Uni., in ex.....		6	“ Dept. of State.....	2	
Jovino, F. De H.....		1	“ Life Saving Service.....	1	
Kansas City Ac'y of Science, in ex		1	“ Mil. Academy.....		1
Ky. Bapt. Theol. Seminary, in ex..		1	“ Naval Observatory.....		1
Laboratory M. S. U.....	25		“ Patent Office.....		1
Laws, S. S.....	1		“ Postal Department.....	1	
Library Asso. Hartford in ex.....		2	“ Treasury Dept. charts, 315	1	1
Lincoln Institute, in ex.....		1	“ War Department.....		2
Madison University, in ex.....		1	University of Alabama, in ex.....		1
Mahn, L. H.....		1	“ of California, in ex.....		1
McAnally, D. R.....		1	“ of Indiana, in ex.....		1
Medical Dept. Uni. of Pa., in ex..		2	“ of Michigan, in ex.....		2
Medical Sect'y Howard Uni. in ex		1	“ of Maine, in ex.....		1
Mer. Lib. Asso. of N. Y. City.....		1	“ of Mass, in ex.....		1
Missouri Secretary of State.....	2		“ of New York, in ex.....		1
Missouri Valley Bridge & Iron Works..... charts 14			“ of Penn., in ex.....		2
Monmouth College, in ex.....		1	“ of Rochester, in ex.....		2
Nipher, F. E.,..... charts 2			“ of the South, in ex.....		1
Oberlin College, in ex.....		1	“ of Vermont, in ex.....		1
Olivet College, in ex.....		1	“ of Wash'ton Tr., in ex.....		1
Ontario Agri. College, in ex.....	2		“ of Wisconsin, in ex.....		2
Palmer, K.....		1	Unknown.....	3	
Patterson, C., Supt. of Coast Sur'y Office.....		27	Vanderbilt University, in ex.....		1
Penn. State College, in ex.....		1	Walker, J. H.....		2
Phelps, J. S.....		1	Wesleyan University, in ex.....		2
Purchased.....	1		Westminster College, in ex.....		2
Rollins, J. S.....	25	75	Wilson, E.....		1
St. Charles College, Md., in ex....		1	Winchell, N. H.....		1
			Wisconsin State Nor. School, in ex		1
			Womans Med. Col. N. Y., in ex....		1
			Total.....charts 331	204	283

## PERIODICALS FOR THE CURRENT YEAR.

Albany Law Journal.	*Industrialist, The.
*American Baptist Flag.	*Journal-Democrat, The.
American Journal of Education.	*Journal of the Telegraph.
American Journal of the Medical Sciences.	*Kentucky Live Stock Journal.
*American Law Register.	*Lexington Register.
American Law Review.	*Library Journal.
American Library Journal.	London Quarterly.
American Naturalist.	*Mexico Intelligencer.
*Ashland Bugle.	*Missouri Statesman.
†Barnes' Educational Monthly.	New England Journal of Education.
Blackwood.	*Official Gazette, U. S. Patent Office.
*Boone County Sentinel.	*Peoples Tribune.
British Quarterly.	Popular Science Monthly.
*Bulletin of the Ess. Inst.	*Richmond Conservator.
*Canton Press.	*Rocheport Commercial.
*Carrollton Democrat.	*Saline County Democrat.
*Carthage Banner.	Scribner.
*Central Baptist.	*Spectator (St. Louis.)
*Christian Statesman.	*St. Joe. Daily Herald.
Coleman's Rural World.	St. Louis Daily Times.
*Columbia Missouri Herald.	†St. Louis Globe-Democrat.
†Congressional Record.	St. Louis Post-Dispatch.
†Detroit Free Press.	St. Louis Republican.
Edinburgh Review.	*Troy Free Press.
Engineering Journal.	*Weekly Bulletin, Y. M. C. A., Kan sas City
Harpers' Monthly.	Westminster Review.
*Independence Sentinel.	Westliche Post.
*Industrial World and Com. Ad.	

## LIBRARY MATTER.

	Books.	Pam.
University Library.....	10,665	12,767
University Library, accessions, 1880-81.....	204	233
Athenæan Society Library.....	341	
Athenæan Society Library accessions 1880-81.....	10	
Union Literary Society Library.....	346	
Union Literary Society Library accessions, 1880-81.....	2	
Columbia Library.....	809	
Total in General Library .....	12,877	13,050

It will be noticed from this and pervious reports, that the accessions for the last four years have been very meagre indeed. The number of volumes *purchased* by the University during this time being only *forty-one*. During the current year only one

volume, "The History of Missouri," was added by purchase. The most valuable accessions during these years were the Columbia Library, the Athenaeum and Union Literary Society collections. The arrangements that brought about the transfer of these libraries to the University Library were perfected in 1878, by the former Librarian, Mr. Scott Hayes. By means of this change the Association and the Societies are relieved of the expenses of a librarian and the annoyance arising from frequent changes of the same, while the University Library is enriched by the matter especially suited to the general reader.

The accessions to the two Society Libraries by purchase alone for the last *two years* number one hundred and eight. The greater number of the accessions to the University Library have been from the Departments at Washington. In addition to the annual reports of the different departments, which are invaluable as books of reference but add little to the reading matter, we have received from Mr. C. P. Patterson, Superintendent U. S. Coast Survey, a complete set of charts numbering three hundred and fifteen. These charts have been arranged in suitable cases made according to specifications furnished by the department. The Librarian is under obligations to the above departments for *special matter* which was furnished with accuracy and dispatch.

Nearly two hundred volumes, some of the choicest matter in the collections, are withdrawn for repairs. About one-half of this number belong to the University Library, and will perhaps be replaced on the shelves before the opening of the next term. For the rebinding of the remainder which belong to the Columbia Library, no means are just now available.

The accessions to the Society Libraries will doubtless continue to increase. Under the present arrangements twenty per cent. of all moneys collected is set aside to be expended by their own committees for books.

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 from the University Library collection for use outside of the room.

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 books 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.

Books and papers are not permitted to be taken from the room, except by members of the faculty—each member being entitled to six books for two weeks.

Books and Pamphlets are catalogued on cards, which are arranged alphabetically by authors, in a case of drawers. This catalogue may be consulted by any person.

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 vols., 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.

#### CIRCULATION OF BOOKS.

Drawn by members of Faculty.....	394
Drawn by members of Athenæan Society.....	175
Drawn by members of Union Literary Society.....	284
Drawn by members of Columbia Library.....	161
Drawn for use in Reading Room.....	14,834
	————— 15,848

#### COMPARATIVE CIRCULATION OF BOOKS.

Years.....	1874-5	1875-6	1876-7	1877-8	1878-9	1879-80	1880-1
Summer Vacations.	250	281	419	282*	442	980	439†
School Terms.....	9,780	14,635	14,499	15,887	15,887	13,947	15,409
Totals.....	10,030	14,916	14,918	16,169	16,329	14,927	15,848
Students Enrolled..	396	321	399	418	444	484	558

\*Library closed for six weeks.

†Library open three days of each week.

It is hoped that the appropriation to the Library will be increased. A certain sum should be set apart annually for the purchase of books. Professors and students are constantly checked in their work by lack of material which the Library should supply.

Several new departments have been opened up in the last few years, which demand a class of books not heretofore needed.

Respectfully submitted,

IDA HAYES,  
Ass't Librarian.

J. H. DRUMMOND,  
Librarian.

## UNIVERSITY ANNOUNCEMENTS.

#### SYNCHRONISTIC TABLE.

(See pages 146-7).

This is a time-table and programme of the class room work for both students and Faculty.

1. 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.

2. It does not embrace the Law, Medical, Agricultural, Normal, Engineering and Art 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.

3. The four Academic courses and degrees are—

TABLE OF ACADEMIC

PRESCRIBED CURRICULA. THEIR DEGREES	1. COURSE IN ARTS. <i>Artium Baccalauréus-a.</i> A. B.	Hour.....	2. COURSE IN SCIENCE. <i>Scientiæ Baccalauræus-a.</i> S. B.	Hour.....
SIXTH YEAR. (Senior.) TWELFTH SEMESTER.	Geology and Phys. and Pol. Geography..... Metaphysics—Ethics & Ontology.....	II. I.	Geology and Phys. and Pol. Geography..... Metaphysics—Ethics & Ontology.....	II. I.
ELEVENTH SEMESTER.	German & Mod. European Hist. ½ Anglo Saxon, Theory of Rhet. and Resumé..... ½ Anct. and Oriental Hist. and Semitic Literature..... Mineralogy and Paleontology..... Metaphysics—Psychol. & Logic.....	VI. IV. II. I.	Laboratory—Quantitative Anal. Astronomy (completed)..... Mineralogy and Paleontology..... Metaphysics—Psychol. & Logic.....	V. II. I.
FIFTH YEAR. (Junior.) TENTH SEMESTER.	French and Med'l History..... Latin and Greek..... Chemistry and Laboratory..... Political Economy.....	V. IV. III. I.	Laboratory—Qualitative Anal. Chemistry..... Mechanics..... Political Economy..... Art (Tuesday and Friday).....	III. II. I. IV.
NINTH SEMESTER.	Zoology, Hu. Anat. & Physiol. Latin and Greek..... Chemistry and Laboratory..... English Literature.....	VI. IV. III. I.	Zoology, Hu. Anat. & Physiol. Chemistry and Laboratory..... Calculus..... Eng. and Amer. Literature.....	VI. III. II. I.
FOURTH YEAR. (Sophomore.) EIGHTH SEMESTER.	Latin and Greek..... Polit. Science..... Physics..... Analytical Geometry.....	IV. III. II. I.	Entomology & Econ. Botany..... Polit. Science..... Physics..... Analytical Geometry.....	IV. III. II. I.
SEVENTH SEMESTER.	Latin and Greek..... English History..... Physics..... Algebra (completed)..... Art (Tuesday and Friday).....	IV. III. II. I. V.	English History..... Physics..... Algebra (completed)..... Art (Wednesday).....	III. II. I. VI.
THIRD YEAR. (Freshman) SIXTH SEMESTER.	Spherical Trig. & Sph. Astron. Latin..... Greek..... Botany..... Art (Tuesday and Friday).....	IV. III. II. I. VI.	German..... Spherical Trig. & Sph. Astron. Elocution and Themes..... Botany..... Art (Tuesday and Friday).....	VI. IV. II. I. V.
FIFTH SEMESTER.	Plane Trigonometry and Solid Geometry..... Latin..... U. S. History..... Greek..... Art (Tuesday and Friday).....	IV. III. II. I. VI.	French..... Plane Trigonometry and Solid Geometry..... U. S. History..... German..... Art (Tuesday and Friday).....	V. IV. II. I. VI.
SECOND YEAR. FOURTH SEMESTER.	Latin..... Analysis and Rhetoric..... Plane Geometry..... Greek..... Art (Tuesday and Friday).....	VI. V. IV. III. II.	French..... Plane Geometry..... German..... Art (Tuesday and Friday).....	V. IV. II. III.
THIRD SEMESTER.	Elementary Algebra..... Greek..... Latin..... Art (Tuesday and Friday).....	IV. III. II.	German..... Analysis and Rhetoric..... Elementary Algebra..... Polit. and Phys. Geography..... Art (Tuesday and Friday).....	VI. V. IV. III. II.
FIRST YEAR. SECOND SEMESTER.	Greek..... Arithmetic and Book-keeping* Latin.....	VI. III. II.	English Grammar..... Arithmetic and Book-keeping* Art (Tuesday and Friday).....	VI. III. I.
FIRST SEMESTER.	Language Lessons & Exercises. Arithmetic..... Latin.....	VI. III. II.	Language Lessons & Exercises Arithmetic..... Latin.....	VI. III. II.

\*Book-keeping twice a week.



SYNCHRONISTIC CURRICULA.

<p>3 COURSE IN LETTERS. <i>Literarum Baccalaureus-a.</i> L. B.</p>	<p>Hour .....</p>	<p>4 GIRLS COURSE IN ARTS. <i>Artium Domesticarum Baccalurea.</i> A. D. B.</p>	<p>Hour .....</p>
<p>Geology and Phys. and Pol. Geography.....</p>	<p>II.</p>	<p>Art (Tuesday).....</p>	<p>IV.</p>
<p>Metaphysics—Ethics &amp; Ontology.....</p>	<p>I.</p>	<p>Literary Criticism (Tues. and Thurs.), Kindergarten Training and Home Education (Sat.).....</p>	<p>III.</p>
<p>½ Anc. and Oriental Hist. and Semitic Literature.....</p>	<p>VI.</p>	<p>Geology and Physical Geography—General Review of the Natural History Course.....</p>	<p>II.</p>
<p>½ Anglo Saxon, Theory of Rhet. and Resumé.....</p>	<p>IV.</p>	<p>Political Economy.....</p>	<p>I.</p>
<p>Mineralogy and Paleontology.....</p>	<p>II.</p>	<p>Art (Wednesday).....</p>	<p>VI.</p>
<p>Metaphysics—Psychol &amp; Logic.....</p>	<p>I.</p>	<p>Ancient and Oriental History &amp; Semitic Literature ½.....</p>	<p>IV.</p>
<p>Spanish &amp; Italian (Alternate).....</p>	<p>VI.</p>	<p>Anglo Saxon, Theory of Rhetoric and Resumé of the English Course ½.....</p>	<p>II.</p>
<p>Entomology &amp; Econ. Botany.....</p>	<p>IV.</p>	<p>Greek Life, Ancient and Modern (Saturday).....</p>	<p>II.</p>
<p>Chemistry and Laboratory.....</p>	<p>III.</p>	<p>English Literature.....</p>	<p>I.</p>
<p>Political Economy.....</p>	<p>I.</p>	<p>Domestic Chemistry and Household Economy.....</p>	<p>V.</p>
<p>Zoology, Hu. Anat. &amp; Physiol.....</p>	<p>VI.</p>	<p>Art (Tues. &amp; Fri.) Italian (Wed., Thurs. &amp; Sat.).....</p>	<p>IV.</p>
<p>French.....</p>	<p>V.</p>	<p>Zoology, Ent. and Econ. Botany and Floriculture.....</p>	<p>IV.</p>
<p>Chemistry and Laboratory.....</p>	<p>III.</p>	<p>English and U. S. Conts. and Political Science.....</p>	<p>III.</p>
<p>Eng. and Amer. Literature.....</p>	<p>I.</p>	<p>Vocal Music.....</p>	<p>VII.</p>
<p>French.....</p>	<p>V.</p>	<p>Art.....</p>	<p>V.</p>
<p>Polit. Science &amp; Eng. &amp; U. S. Constitution.....</p>	<p>III.</p>	<p>Domestic Chemistry &amp; Economy.....</p>	<p>III.</p>
<p>Physics.....</p>	<p>II.</p>	<p>English History.....</p>	<p>II.</p>
<p>Analytical Geometry.....</p>	<p>I.</p>	<p>Mineralogy ½.....</p>	<p>I.</p>
<p>Semitic Languages ½ (alternate with 11th Semester).....</p>	<p>IV.</p>	<p>Metaphysics, Psychol. &amp; Logic.....</p>	<p>II.</p>
<p>English History.....</p>	<p>III.</p>	<p>Music.....</p>	<p>VII.</p>
<p>Physics.....</p>	<p>II.</p>	<p>Art (Tuesday and Friday).....</p>	<p>VI.</p>
<p>Algebra (completed).....</p>	<p>I.</p>	<p>French.....</p>	<p>V.</p>
<p>Art (Tuesday and Friday).....</p>	<p>V.</p>	<p>Chemistry and Laboratory work.....</p>	<p>III.</p>
<p>Spherical Trig. &amp; Sph. Astron. Latin.....</p>	<p>IV.</p>	<p>Elocution &amp; Themes (Wed. &amp; Thurs).....</p>	<p>II.</p>
<p>Elocution and Themes.....</p>	<p>II.</p>	<p>Metaphysics, Ethics &amp; Nat. Theology.....</p>	<p>I.</p>
<p>Botany.....</p>	<p>I.</p>	<p>Vocal Music.....</p>	<p>VII.</p>
<p>Art (Tuesday and Friday).....</p>	<p>VI.</p>	<p>German.....</p>	<p>IV.</p>
<p>Plane Trigonometry and Solid Geometry.....</p>	<p>IV.</p>	<p>Chemistry.....</p>	<p>III.</p>
<p>Latin.....</p>	<p>III.</p>	<p>United States History.....</p>	<p>II.</p>
<p>U. S. History.....</p>	<p>II.</p>	<p>Art (Tuesday and Friday).....</p>	<p>I.</p>
<p>German.....</p>	<p>I.</p>	<p>Latin.....</p>	<p>VI.</p>
<p>Art (Tuesday and Friday).....</p>	<p>VI.</p>	<p>Rhetoric.....</p>	<p>V.</p>
<p>Latin.....</p>	<p>V.</p>	<p>Spherical Trig. and Sph. Astronomy.....</p>	<p>IV.</p>
<p>Analysis and Rhetoric (cont'd).....</p>	<p>VI.</p>	<p>Art (Tues. and Fri.), Book-keeping (Wed., Thurs. and Sat.).....</p>	<p>I.</p>
<p>Plane Geometry.....</p>	<p>IV.</p>	<p>Vocal Music.....</p>	<p>VII.</p>
<p>German.....</p>	<p>III.</p>	<p>Composition and Elocution.....</p>	<p>V.</p>
<p>Art (Tuesday and Friday).....</p>	<p>VI.</p>	<p>Algebra Completed, Plane Geometry.....</p>	<p>IV.</p>
<p>Latin.....</p>	<p>II.</p>	<p>Art (Tuesday and Friday).....</p>	<p>III.</p>
<p>Analysis and Rhetoric.....</p>	<p>III.</p>	<p>Latin.....</p>	<p>II.</p>
<p>Elementary Algebra.....</p>	<p>VI.</p>	<p>Botany.....</p>	<p>I.</p>
<p>Latin.....</p>	<p>II.</p>	<p>Book-keeping.....</p>	<p>VII.</p>
<p>Art (Tuesday and Friday).....</p>	<p>III.</p>	<p>Vocal Music.....</p>	<p>VI.</p>
<p>German.....</p>	<p>VI.</p>	<p>Anat. Physiol. and Hygiene.....</p>	<p>IV.</p>
<p>Analysis and Rhetoric.....</p>	<p>V.</p>	<p>Elementary Algebra.....</p>	<p>III.</p>
<p>Elementary Algebra.....</p>	<p>IV.</p>	<p>Art (Tuesday and Friday).....</p>	<p>II.</p>
<p>Latin.....</p>	<p>I.</p>	<p>Latin.....</p>	<p>I.</p>
<p>Art (Tuesday and Friday).....</p>	<p>II.</p>	<p>Calisthenics ½.....</p>	<p>IV &amp; VII.</p>
<p>English Grammar.....</p>	<p>VI.</p>	<p>Landscape Gardening and Horticulture ½.....</p>	<p>VII.</p>
<p>Arithmetic and Book-keeping*.....</p>	<p>III.</p>	<p>English Grammar.....</p>	<p>VI.</p>
<p>Latin.....</p>	<p>II.</p>	<p>Art (Tuesday and Friday).....</p>	<p>III.</p>
<p>Language Lessons &amp; Exercises. Arithmetic.....</p>	<p>VI.</p>	<p>Arithmetic (2nd Division).....</p>	<p>I.</p>
<p>Latin.....</p>	<p>III.</p>	<p>Calisthenics ½.....</p>	<p>IV &amp; VII.</p>
<p>Language Lessons &amp; Exercises. Arithmetic.....</p>	<p>VI.</p>	<p>Language Lessons and Exercises.....</p>	<p>VI.</p>
<p>Latin.....</p>	<p>II.</p>	<p>Geography.....</p>	<p>III.</p>
<p>Arithmetic.....</p>	<p>III.</p>	<p>Art (Tuesday and Friday).....</p>	<p>II.</p>
<p>Latin.....</p>	<p>II.</p>	<p>Arithmetic, (2nd Division).....</p>	<p>I.</p>

I. The course in *Arts*; degree A. B., Artium Baccalaureus-a. This is the old fashioned college or classical course, only slightly modified. Latin and Greek complete.

II. The course in *Science*; degree S. B., 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.

III. The course in *Literature*; degree L. B., Literary Bachelor or Bachelor of Literature. 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.

IV. The course in the *Fine and Domestic Arts* for young ladies; degree A. D. B., Artium Domesticarum Baccalaurea. Only young ladies will be graduated with this degree. The course in *form-study* (drawing) is here complete; Anatomy, Physiology and Hygiene, and Music, are more prominent; Italian and Laboratory work with domestic economy are distinctive. 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 is fully equal to either of the other courses, and the special culture, with reference to the practical aims of a true education of woman, excels them.

4. 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.

5. 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.

6. No student shall 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.

7. 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 two hours to prepare each recitation. Eight hours of preparation, and four hours of recitation, will be twelve 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 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.

8. 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 June, 1879.

9. In the professional schools, it will be noted that the medical course has been graded, and for the Senior class 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.

10. a. The synchronistic curricula (pp. 146-7), are the settled Academic courses for recommendation for the Academic degrees.

b. The 990 hours work in English and the 540 hours in Latin, are fixtures in the course in letters, and 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 UNIVERSITY TOWN.

The University is situated near the centre of the State, at Columbia, Boone county, in a beautiful and picturesque limestone region, on the elevated rolling table-land, a few miles back from the north side of the Missouri river. Were the selection of the sight to be made anew (p. 11,) 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 conduct, 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 cases 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 rolls.

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 can not 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 before having their cards signed by any Professor, and obtain a certificate of competent knowledge of English.

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 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 with four hours work a day, except when the prescribed course requires more or less, then any additional studies shall be taken only by approval of the Faculty, on application thereto.

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, or 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 library 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 respectful 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.

SECRET SOCIETIES.

WHEREAS, The interests 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*, 1. That all our students should be discouraged from joining such secret societies.

2. That as a means of protecting the students against this evil or of relieving them therefrom, the following pledge shall be hereafter taken from each student upon matriculation, to wit: I, the undersigned, do hereby pledge my word and honor that I will not, so long as a student of the University of the State of Missouri, unite with any so-called secret society or club; that is to say any society or club not known and approved by the Faculty of said University; or, if already a member of any such society or club, I, the undersigned, do hereby pledge my word and honor that I will withdraw from the same and give no attention thereto whilst a student of the Missouri University, other than may be necessary for winding up and closing out its affairs and terminating its existence, within the said University, within the present collegiate year.

Faculty action, Sept. 11, 1880.

[Signed].....

Witness .....

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 it is so. The Curators are thereby wisely exempted from a needless and incompetent responsibility, and nothing unreasonable is devolved upon 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 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 the 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 its government. They come to obey and to 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 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 exercise. 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.

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 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 dismissal 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.

☞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.

#### 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 students.

## 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 to 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 the 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 of 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 absences 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 presiding officer 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 cancelled.

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, *i. e.*, when cancelled, shall be reported as *excused absences*, and recorded with the reason for cancellation; absences of the second kind 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.

7. The class roll shall be called before entering on any class room exercise.

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 the 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. All students not absent on leave or sick, must account for their absences from chapel every Tuesday morning, and those sick or on leave will be excused only during the continuance of such reason. The reason for absence from chapel must be given in writing, signed by the student's name, and delivered in such manner as the Faculty may designate.

12. In making their reports to the Secretary of the Faculty, the Professor shall use a prescribed blank.

Unexcused absences, once reported, can only be excused by Faculty action.

Every unexcused absence from chapel or from class rolls, counts two demerit marks.

#### GRADING AND CLASS STANDING.

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 10 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 marking absences.

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 classes :

1. If the failure arises from the fact that the student has too many studies, let him be excused by the Faculty from some of them.

2. If the student is "doing no good" in any department, and the failure arises from want of application or from bad health, let him be sent home. (See catalogue, page 153.)

3. If the failure in any class arises from a 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 is none, let him drop him from his department, and report the fact to the Faculty at their next meeting.

#### 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 semester, in February and 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 ordinary language they have about the following meaning: 100 is perfect; 90 excellent; 80 very good; 70 good; 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 caused by demerits. Each unexcused absence from University duty counts two demerits, and misconduct is demerited according to its aggravation.

3. Students are graded, on department, 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 159 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 expenses of several of our most studious members to have been no more than one hundred and fifty dollars 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." 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 assigning them to the classes for which they may be qualified.

In order to meet the deficiencies in 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: Practical

English grammar, arithmetic and geography ; and every student must receive a grade of at least 6, according to general rule, before being admitted to examination for the next higher class or for graduation.

c. That the Secretary of the Faculty be instructed to carry out the provisions of these resolutions, in so far as their practical workings are concerned, by directing the students to report to the Professor of English, before having their cards signed by any Professor.

On the occasion of these 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.

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 exercises, other than for examination between the two semesters of the year, and during the holidays.

3. A general examination of all the classes is held during the ten days preceding commencement, for the purpose of ascertaining the 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, be re-examined on such subject at the time of the regular class examination. *The final grade thus attained 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 a time for his examination.

3. The re-examination provided for in the preceding rules shall be limited to subjects pursued by the student during the scholastic year immediately preceding the proposed examination.

4. All private examinations granted under the rule, *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, but must pass the public examination of their classes, or lose their class standing.

Each candidate for graduation is required to prepare a thesis, oration or essay, which may be delivered or not, at the discretion of the Faculty, and a copy of the same, on thesis paper, must be filed with the University Librarian, to be kept in the archives.

Students in the course in science will hereafter be required to present, instead of an oration, an inaugural thesis or essay upon a scientific topic for graduation.

#### 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 Art, 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.

On the subject of students who desire certificates to show their attainments, it has been decided instead of individual members of the Faculty giving testimonials—

1. That a graduate be referred to his diploma.
2. That 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 session, 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 commencement day.

#### BOARDING.

Board in private families, with lodging, washing and fuel, may be obtained 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 everything, 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 garden, will be allowed from ten to fifteen cents per hour, 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 to keep 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 Co., 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 and 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 \$3.50 each.....	\$17 00
Furniture for room :	
Bedstead.....	\$2 25
Mattress.....	3 00
Stand-table.....	1 75
Wash stand.....	2 00
Chairs, 2.....	1 00
Lamp, etc., etc.....	2 00
<hr/>	
Total.....	\$12 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
<hr/>	
Total expenses for school year.....	\$93 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 expenses 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 were 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 his furniture, at least in part, from home. All may bring bed-clothing, and had better do so.

Very young students, or those incapable of taking care of themselves, 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, in the manner specified above, it is my will that they pay over the same to Alexander Persinger, Gilpin S. Tuttle and James W. Dally, 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.

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 now amounts to (\$27,000) twenty-seven thousand dollars, held by the county court of Boone county, invested in Boone county 8 per cent. bonds. At 8 per cent. the interest will be \$2,160.00; and the three-fourths available for aiding students, \$1,620.00.

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 twenty-five marks of demerit will be considered such discipline, and falling below the required standard of scholarship, in any study, such failure.

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 about 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, 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 attain his professional education, it would be unnatural to suppose that, by any implication, the "indigent" and worthy professional student would be excluded.

Whether the one-fourth of the interest must annually be added to the principal of this fund, will ultimately become a question of great magnitude, which may 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 representation, 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 13th, 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 11 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 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 such terms, and under such rules as may be prescribed by the Executive Committee.



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 and Law, "to receive instruction in the same manner as other students," without the payment of tuition fees.

2. That said resident graduates shall have the privilege 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, then 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 undergraduates.

#### 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 "Anthenæan," 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 21st, 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 young women also have a literary society. (See Ladies Department, page 66.)

#### UNIVERSITY PERIODICALS.

The literary societies, by editors selected annually, have, during the past nine years, published a monthly periodical, designed not merely as a record of University affairs, but also as a literary, educational and philosophical publication. The lady students also publish a quarterly magazine, which has been in progress for two years. These periodicals have been creditably conducted, and will, by the experience of the past years, no doubt, be greatly improved during the coming year.

## 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 shall have incurred twenty-five demerit marks, he will not be permitted to appear and take part in any public exercise in the University.

## VALEDICTORIAN.

The academic class, and each professional class, choose its own valedictorian.

Rule for election of academic valedictorian, and class representation :

1. That the valedictorian shall be elective.
2. That only those shall be eligible as valedictorians who take one or more of the following degrees, viz: A. B., S. B., A. D. B., L. B.
3. That the right to vote for valedictorian be accorded to candidates for graduation with any of the above named degrees.
4. That an essay or thesis be required from 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 co-workers 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 an edition not earlier than that of 1864.

## PRIZES.

IN ORATORY—\$50 GOLD MEDAL.—Founded by Mr. James L. Stephens, a retired merchant of Columbia, and annually awarded for the best oration of Senior class.

IN DECLAMATION.—*The Literary Societies*, to best speakers in declamation contest.

IN PHYSICS.—\$10 in money, by Charles Dachsel, engineer, Jefferson City, Mo., for best *Thesis on Steam Engine*.

IN THE AGRICULTURAL COLLEGE.—*Harris Medal* to Senior class, for “*Best Essay on Dairy Stock,*” or “*Indian Corn.*” *Swallow Prize*, for “*Best Oral Examination on Pruning,*” to Freshman class.

Subject for “*English Medal,*” 1882, is “*The Death of Cromwell.*”

The heads of the several departments dispense prizes and distinctions in their discretion.

#### CO-EDUCATION.

For thirteen years girls have been admitted to the classes of the Missouri University. This experience is decidedly 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, comports 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—thirteen years of experience here, in the Missouri University, favors 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 66.)

#### 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 vacation, 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 were, by lot, distributed among the members of the Faculty.

#### 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 Orator for the present year is O. L. Houts, S. M., Class of '70, of Warrensburg, Missouri.

The objects of this Society are the promotion of education, especially in the halls of 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: S. C. Douglass, Pres.; J. V. C. Karnes, 1st V. P.; Prosser K. Ray, 2d V. P.; Scott Hayes, Sec., and J. S. Clarkson, Treas.

Prof. Thomas J. Lowry, with R. W. Gentry as associate, represent the Association in the columns of the *University Missourian*.

## CALENDAR.

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### 1881.

September 12, Monday.....All Academic and Prof. Schools open.  
 November 12, Saturday ..... Athenæan Society open session.  
 November 26, Saturday ..... Union Literary Society open session.  
 December 17, Saturday .....Close for Holidays.

### 1882.

January 3, Tuesday.....Reopen.  
 January 17, to January 21 .....Examination at the close of 1st Semester.  
 January 24, Tuesday.....Second Semester begins.  
 February 18, Saturday.....Exhibition of Young Ladies' Society.  
 February 25, Saturday.....Societies appoint Prize Declaimers.  
 March 4, Saturday.....Inter-Society Contest.  
 March 30, Saturday.....Law School closes.  
 April 15, Saturday.....Prize Declamation Contest.  
 April 22, Saturday.....Contest for Stephens Medal.  
 May 6, Saturday... ..Exhibition of Athenæan Society.  
 May 20, Saturday.....Exhibition of Union Literary Society.  
 May 28, Sunday.....Baccalaureate Discourse.  
 May 30, Tuesday.....Curators meet.  
 May 30, Tuesday.....Address before Societies.  
 May 31, Wednesday.....Oration before Alumni.  
 June 1, Thursday.....Commencement.

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# APPENDIX.

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## MEMORIAL.

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COLUMBIA, Mo., February 22, 1881.

*To the Honorable, the General Assembly of the State of Missouri :*

The undersigned members of the Board of Curators of the University of the State of Missouri, now in session at Columbia, beg leave respectfully to state that, without any solicitation on their part, they were appointed to the position they now hold as members of this board. They regarded it as a trust of great responsibility. It is an office of much inconvenience to each one of them, and without any remuneration whatever. They have accepted the position which they hold from a sense of duty, being willing to devote so much of their time and labor in looking after a State institution, in which they have no more interest than any member of the Legislature, or any other citizen of the State. Four out of the nine of their number are graduates of this institution of more than twenty years' standing; they are presumed to know something of the history, the struggle for existence, the growth, the present prospects and the wants of the University. They are willing to co-operate with the authorities of the State, in extending the advantages and usefulness of the institution, but their resignations will be handed in whenever an intimation is made that a different class of men are needed to fill their places. They believe the affairs of the University have been conducted with ability, efficiency, economy and great success during the administration of President S. S. Laws and his corps of able and faithful professors. They see and believe the institution has reached a period in its history, when, with reasonable aid and assistance on the part of the Legislature, its usefulness will be greatly extended, and it will become, in a short period of time, one of the best and most valuable institutions of its kind in our country. Is it desirable to have such an institution at all? If not, the better plan would be to close its doors, wind up its affairs, if it can be legally done, and thus relieve the Legislature, the Curators and the public, of all further concern in regard to it. On the other hand, if the conclusion is arrived at that it is best, in the language of the Constitution, for the General Assembly to "*aid and maintain the State University with its present departments,*" this board is unanimously of the opinion that it ought to be done in a reasonably liberal manner, comporting in some degree with the character and dignity of the State, in order to meet the wants and aspirations of the sons and daughters of the commonwealth, who are seeking to endow themselves with that better education and intelligence fitting them to discharge aright the duties of citizenship; and all the more readily *from the fact* that the University of the State is the only institution of the kind recognized in the Constitution, and with a solemn pledge of *sixty years* standing in the same instru-



ment on the part of the people and their representatives, to "support and maintain it." Shortly after the meeting of the present General Assembly, this board, through its president, made a report to your honorable bodies, stating in clear and explicit terms, the present wants of the institution, with some of the reasons why those wants should be supplied. That report is lying upon your desks, and no one has been able to deny or contradict the arguments and considerations therein presented in favor of meeting its recommendations.

If this board, which has the immediate control and government of the institution, does not know what its wants are, then nobody can state them, and the simple question is, whether we shall go forward, or stand still or retrograde. To ignore the board, is in fact to abandon the institution to inexperience and chance. The unanimous sentiment of this board is that these demands should be reasonably met, and that Missouri, in all matters of public education, should march forward to the high destiny which awaits her; and this board presents, in as few words as possible, some considerations why this should be done:

*First*—This University was located forty-two years ago, and the State of Missouri has done far less for its support and maintenance than any other State in the American Union has done for similar institutions bearing the same relation to such States.

*Second*—So far as furnishing proper sites for necessary college buildings and the erection of buildings thereon, the people of the State, with the exception of \$10,000 given for the erection of the president's house, which had been destroyed during the war by fire, have never been taxed a dollar, either for the *erection, the repairing or the equipment of such buildings*, which were absolutely required, and without which there could be no institution; this heavy burden the State has imposed upon the people of certain localities, to the extent of hundreds of thousands of dollars, and otherwise relied upon means furnished by the general government; but when these donations have been made and these commodious buildings have been erected at an enormous cost to others, the State has accepted deeds of general warranty to these lands and these buildings, and now holds the titles thereto in fee simple, as her own absolute property.

This board may well ask, is this either right or magnanimous, or just? And especially is it right or magnanimous, or just, when it is remembered that the General Assembly of Missouri, when it accepted the Agricultural College lands under the act of Congress, July 2d, 1862, solemnly pledged itself by a resolution unanimously passed March 17, 1863, that it or the State would *furnish, erect, preserve and keep in repair, any and all building or buildings necessary for the use of said Agricultural College*. The State has never done anything of the sort; it has never furnished even the most insignificant building for this great and important department of the University, although the attention of the General Assembly has regularly been called to this important matter during these last eight or ten years, but there has never been a favorable response to these just and legal demands upon the State. The Agricultural and Mechanical Departments have been crowded into other buildings erected long years ago (but not by the State) for other University purposes; and these, together with the Normal Department, the Department of Natural History, the Department of Civil Engineering, the Art Department, the English Department, the Department of Chemistry, the Department of Physics, the Department of Philosophy, the different Departments of Language, Ancient and Modern; the Department of Mathematics and Astronomy, and the Professional Departments at Columbia, are all crowded into a few buildings wholly inadequate to accommodate the professors and five or six hundred students, young men and women, who are now in attendance upon the Institution, and with a prospect, if proper legislative support is extended, of larger and still increasing numbers.

The Curators know of no way of compressing two bushels of corn into a half bushel measure; their only recourse is to appeal to the sense of justice, to the intelligence and liberality of the General Assembly of the State. The people will sustain you; the freemen of Missouri are in favor of maintaining our "*Free Public School System*," and of which the departments above spoken of constitute a most important part. There is the pledge of the whole people, without distinction of party, in their written Constitution. Read Art. 11, State Constitution; subject, "Education." When our State prisons need more room, buildings are at once erected and paid for by the State; when larger accommodations are needed to take care of your deaf and dumb, your blind and insane, palaces are at once erected and paid for by the State, but for these there is no constitutional pledge or guarantee. These institutions are unknown in the Constitution. When your State Capitol needs enlargement or repairs it is at once done. Why, then, should that institution, standing at the head of our public educational system, planted in the Constitution from the very beginning and continued in every Constitution down to the present time, constituting thus a solemn covenant, made by the founders of our State Government with the Fathers of the Republic when Missouri was admitted into the family of States, that the State would "aid and maintain it," and which can only be done by appropriating sufficient means, annually, for its support, and the furnishing of ample buildings necessary for the reasonable accommodation and convenience of such of the youth of Missouri as may seek to obtain a liberal education within the walls of her State University? Why, we ask, should this institution, the oldest, and perhaps, after all, the most important amongst them, continue to be given the go by and utterly neglected? There is nothing so fatal to the success of literary and scientific institutions as to leave them in constant doubt and uncertainty as to whether they will receive the annual appropriations necessary for their support and maintenance. The Board of Curators look to the Constitution, and there, in sections 5 and 6 of Art. 11, the guarantee and the pledge, broadly given, are found that the Legislature will do these things.

In Sec. 6 of Art. 11 of the Constitution of Missouri, after describing what constitutes the "Public School Fund" of the State, it provides: "*The annual income of which fund, together with so much of the ordinary revenue of the State as may, by law, be set apart for that purpose shall be faithfully appropriated for establishing and maintaining the free public schools and the University in this article provided for, and for no other use or purposes whatsoever.*"

Can the English language make anything plainer than this?

The Board of Curators cannot distrust the Legislature; they must repose implicit faith in that body, that its members will meet faithfully the obligations and pledges imposed by the Constitution itself, and with a fair understanding of these matters they have every confidence that the General Assembly will fulfil its duties in this regard in the most liberal and enlightened manner.

This Board states as a fact that, considering the point of usefulness attained by the University of the State of Missouri, after a hard struggle of almost a half a century, it has cost the people of the State far less than any other similar Institution has cost the States in which they are located. This Board will go farther still, and make the broad statement that, with the exception of Nevada and Colorado, there is not another State in the Union, however young or scant of means, that has not made larger and better provision in the way of buildings and endowments from their respective treasuries than the great and powerful State of Missouri, now a member of the Union for more than sixty years! If this be true it presents a picture of indifference and neglect not creditable (far from it) to the enlightened conduct of our educational affairs. Is Missouri so feeble, so poverty-stricken, that this state of things must continue? It is

for the General Assembly of the State to answer these questions. This Board have no power in the premises, except to coöperate and to recommend as it is their legal duty to do.

It has been charged, by persons ignorant of the facts, that this is an extravagant institution; that it is intended for the rich, and not for the sons and daughters of the middle classes and those in humbler life. Men who say these things speak without knowledge or wisdom. This University is a State institution; it is intended for the whole people without sect or party; it is designed to educate and lift up to a better sphere of life and usefulness the masses of the people. Every son and daughter of the commonwealth, no matter in what obscurity and poverty they may have first seen the light of day; and this board will go farther, and state there is no institution of learning of equal advantages upon the American continent where young men and young women may be well educated for a less sum of money. Running back through a series of many years, the different boards of government of the institution, under the guidance of experience and enlightened educators, have pursued a policy whereby all the advantages of the institution might be fully enjoyed by the young men and young women of the humblest means; a system of boarding in clubs has been in existence for years, so reducing the cost as to exclude no one worthy to receive an education. Tuition fees, by acts of the Legislature, have been reduced in nearly all the departments, whereby students entering the institution are admitted to equal privileges and advantages of use of library, admittance to University lectures, as well as enjoying all the training and instruction of the different recitation rooms. Many of the young men coming from different parts of the State of limited means, and who are preparing themselves for the pursuit of agriculture, and other industrial and mechanic arts, pay their way largely by useful labor and employment upon the *farm*; and yet with these facts so plainly stated, and so easily understood by even "*the wayfaring man*," we hear it said, and repeated, the University of Missouri is intended for the rich! Can there be any statement more sublimely ridiculous?

We have before us a communication from Prof. Swallow, Dean of the Agricultural College, showing that during the year 1880 there was paid out for labor to students in the Horticultural Department, the Department of Pomology and Forestry, for work in the nursery and vineyard, the sum of \$3,450.50, thus enabling 70 or 80 students of limited means to pay their way, and pursue their educational object in the University of the State, and yet we hear it said, and constantly repeated, that the University is intended for the rich alone.

The rich can go where they choose to educate their children, either at home or in foreign lands. It is our duty and our province to provide for the education of all; those who may live in proud palaces, and those who may inhabit the "*lowly thatched cottage*," for the sons and daughters of those who may be basking in the sunshine of wealth, and at the same time for those equally meritorious sons and daughters of the humblest sunburnt peasant. This is what freedom means; this constitutes the true glory of our free institution; this is genuine democracy; this is true republicanism; this is what education ought to mean in Missouri under our free system of public schools, as provided for in the constitution and laws of the State. As Prof. Huxley puts it, "*The State work of education is like a ladder with the lower end in the gutter and the upper end in the University.*" Every child of the State possessing energy, talent and ambition, may commence at the lowest and reach the topmost round of this ladder.

Said Madame DeStael to Napoleon: "*Pour instruction upon the heads of the French people; you owe them that Baptism.*" So say we to our common mother, the State, you owe this baptism to every son and daughter of the commonwealth.

Not to weary your honorable bodies further, the Board of Curators close this memorial with the following recommendations as necessary for the further and complete success of the State University.

1st. The passage of Senate bill No. 88, which, if the claim therein referred to is ever realized, will make ample provision to meet the reasonable wants of the different departments of this University. See page 9 of report. And also provide fairly for the wants of those institutions composing a distinct part of our public educational system. This claim, given by the State for educational purposes, would greatly strengthen the prospect of its settlement and collection, and at the smallest possible cost.

2nd. The passage of a bill appropriating \$80,000, according to careful plans and estimates made by President Laws and Mr. C. B. Clark, an able architect of St. Louis, for the extension of the main University edifice, which, when completed, will afford ample room to meet present pressing demands for room, and also reasonable accommodations for all the Departments of the University for a series of years to come. In the opinion of this board, in utilizing present improvements here, this would be the cheapest and best investment the State could possibly make, and this board further regards it as absolutely essential to the farther growth and expansion of the institution, now so full of hope and bright promise.

3rd. There are other bills in regard to the attendance of curators, in reference to an annual board of visitors—and in regard to the encouragement of donations to our public school funds which ought to be passed. If the General Assembly distrust the judgment of this board in regard to the recommendations above made by them, they can easily obtain further light through committees of their body, or by the General Assembly coming and seeing for themselves; and with these reasonable recommendations faithfully carried out, this board, representing every part of the State, expresses the opinion that under the direction of the able, efficient, learned and liberal President Dr. Laws, with the aid of his faithful colleagues, we will have in Missouri one of the best *public school systems*, and crowning the whole a State University equal to any in the Mississippi Valley, and of which every intelligent citizen of the State will be justly proud. All of which is respectfully submitted.

JAMES S. ROLLINS, President.

JERRE C. CRAVENS, Vice-President, Springfield.

ALEX. M. DOCKERY, Gallatin.

W. H. LACKLAND, St. Louis.

J. K. ROGERS, Columbia.

JOHN WALKER, Jefferson City.

CHAS. C. BLAND, Rolla.

JNO. S. CLARKSON, Columbia.

Attest: R. L. TODD, Secretary.

The following admirable bill, carefully drawn and prepared by the President of the Board of Curators of the State University, was passed by the last General Assembly of the State, and is now the law of the land.

It will probably remain upon the Statute Book for a great many years to come. It was a law greatly needed; it invites contributions to the Public School fund of the State by those who have means, and are willing to make such, and under the most favorable conditions.

The great difficulty with persons benevolently inclined to make such donations heretofore, was, that they knew not how to make such investments perfectly safe. This bill remedies this difficulty. It is drawn precisely in accordance with Sec. 6, Art. 11 of the Constitution of the State of Missouri, and any person 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, to be disposed of by him according to the terms of the law.

Under Sec. 7 of this act the State of Missouri is constituted the custodian and trustee of all such funds, and pledges itself for the safe keeping, investment and due application of the same, with the interest thereon, and the annual income on which funds shall be faithfully appropriated in carrying out the purposes and wishes of such grantor, donor, deviser or testator, according to the instrument of writing making such grant, gift, devise or bequest.

We repeat this is an admirable bill, and we hope that before many years the Public School fund will be largely increased from private sources, and from persons residing in and out of the State of Missouri:

**AN ACT** to encourage and increase the public school fund of the 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.

*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 the 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 deviser 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 the same to the Public School Fund, and if the same be in money, or after the property is converted into money, it shall be securely invested and sacredly preserved as a part of the "Public School Fund," as provided for by the Con-

stitution 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, reinvested, 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, reinvested 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, deviser 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.



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