REPORT

TO HIS EXCELLENCY, THE GOVERNOR.

THE THIRTY-EIGHTH

# MISSOURI UNIVERSITY CATALOGUE,

1879-1880.

FOUNDED, 1820—ORGANIZED, 1840.

## PLATE I.

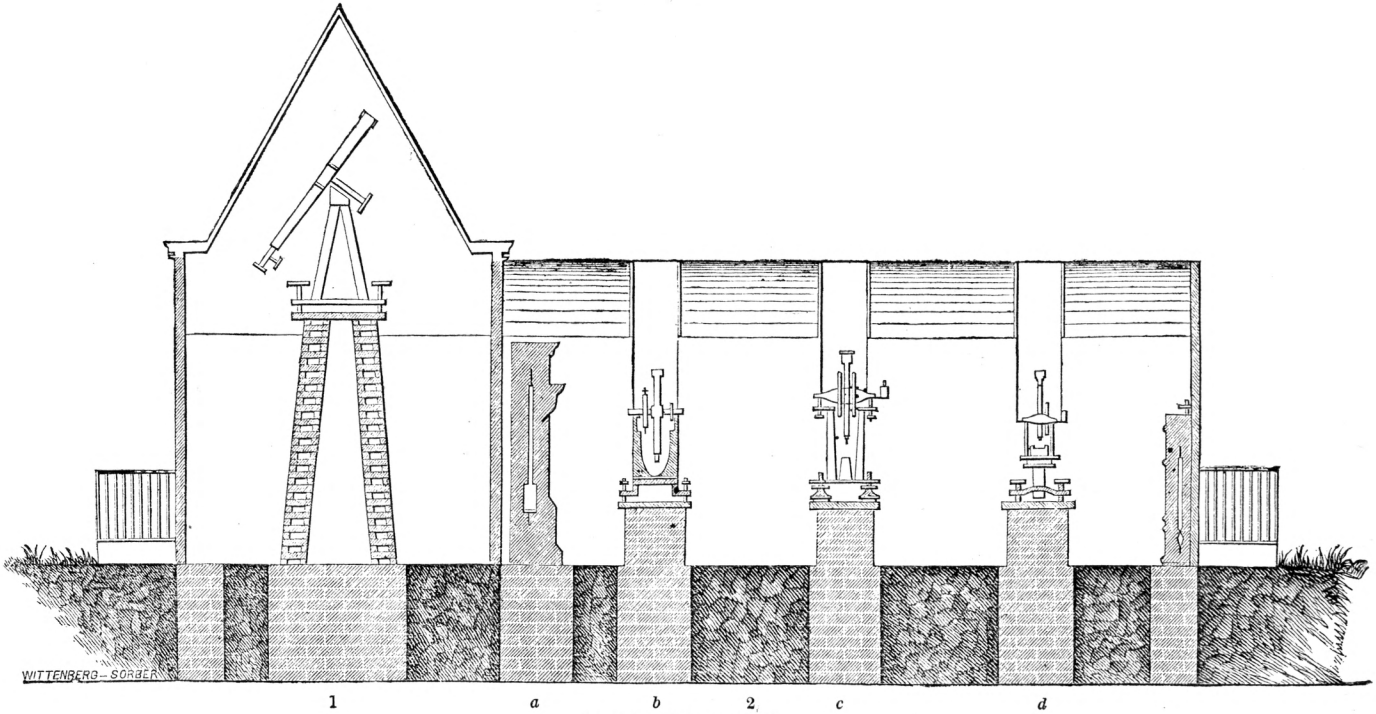
1. *The main edifice,* which faces north and is somewhat cruciform; nave E. and W. 157xtransept (extension S. 25x81, and N. colonnade vestibule 20x81, and steps 7x81, making total depth N. and S.) 108x81. This structure is massive and imposing; 3½ lofty stories in height, with a basement cellar and an 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.



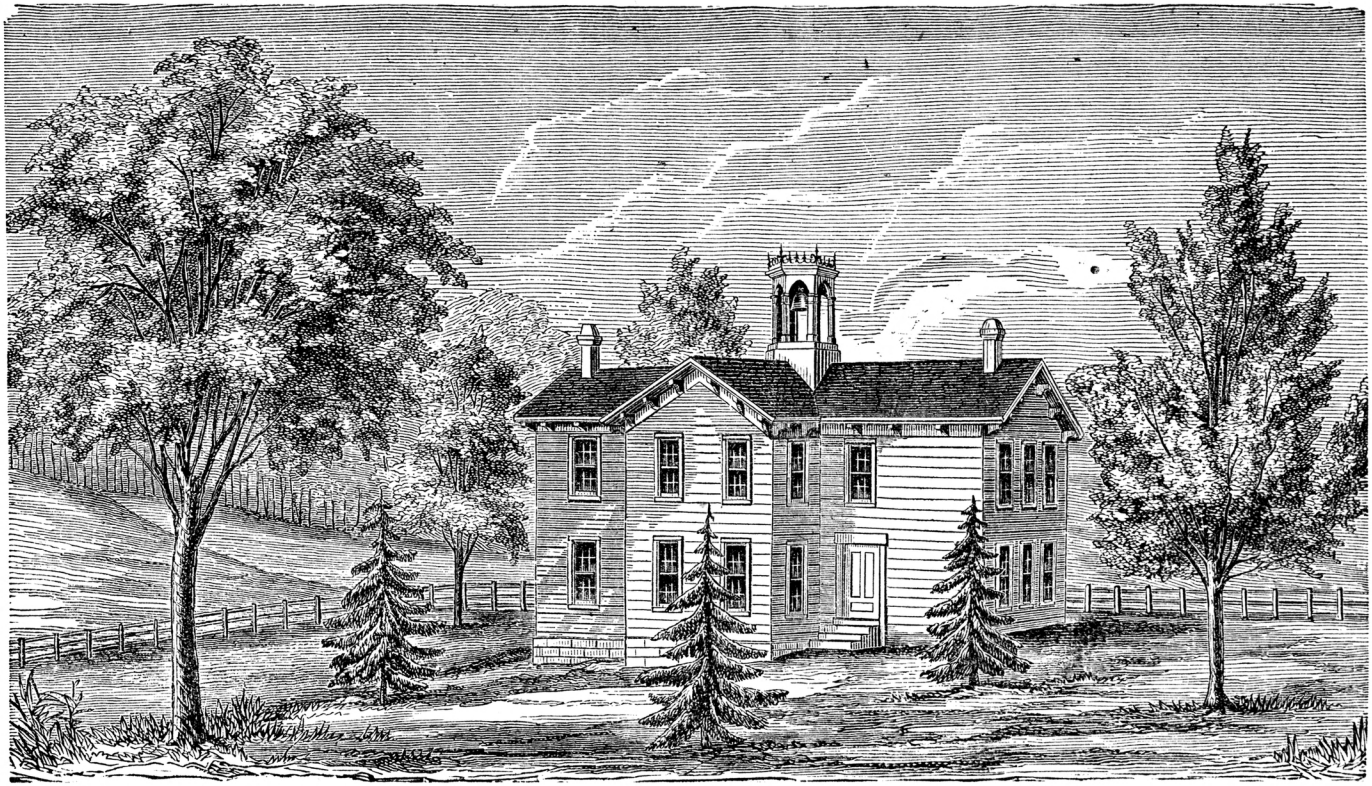

THE OBSERVATORY.

(See School of Mathematics and Astronomy.)

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.

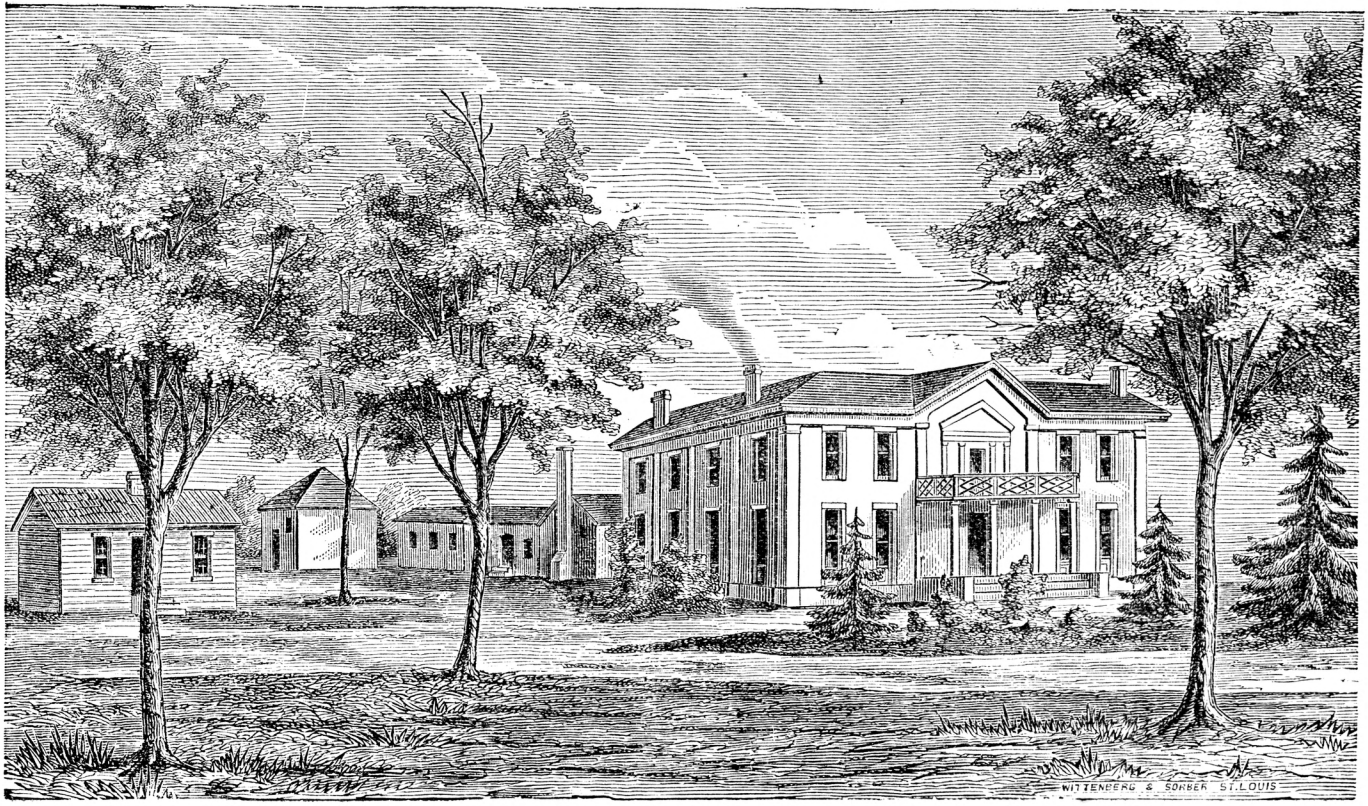
THE ENGLISH AND ART SCHOOL is two stories and cruciform; nave, 73x22; transept, 60x25. It is in the northwest corner of the Campus, and fronts east.

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.
5. The Office of the Proctor and Post Office.

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

PLATE IV.

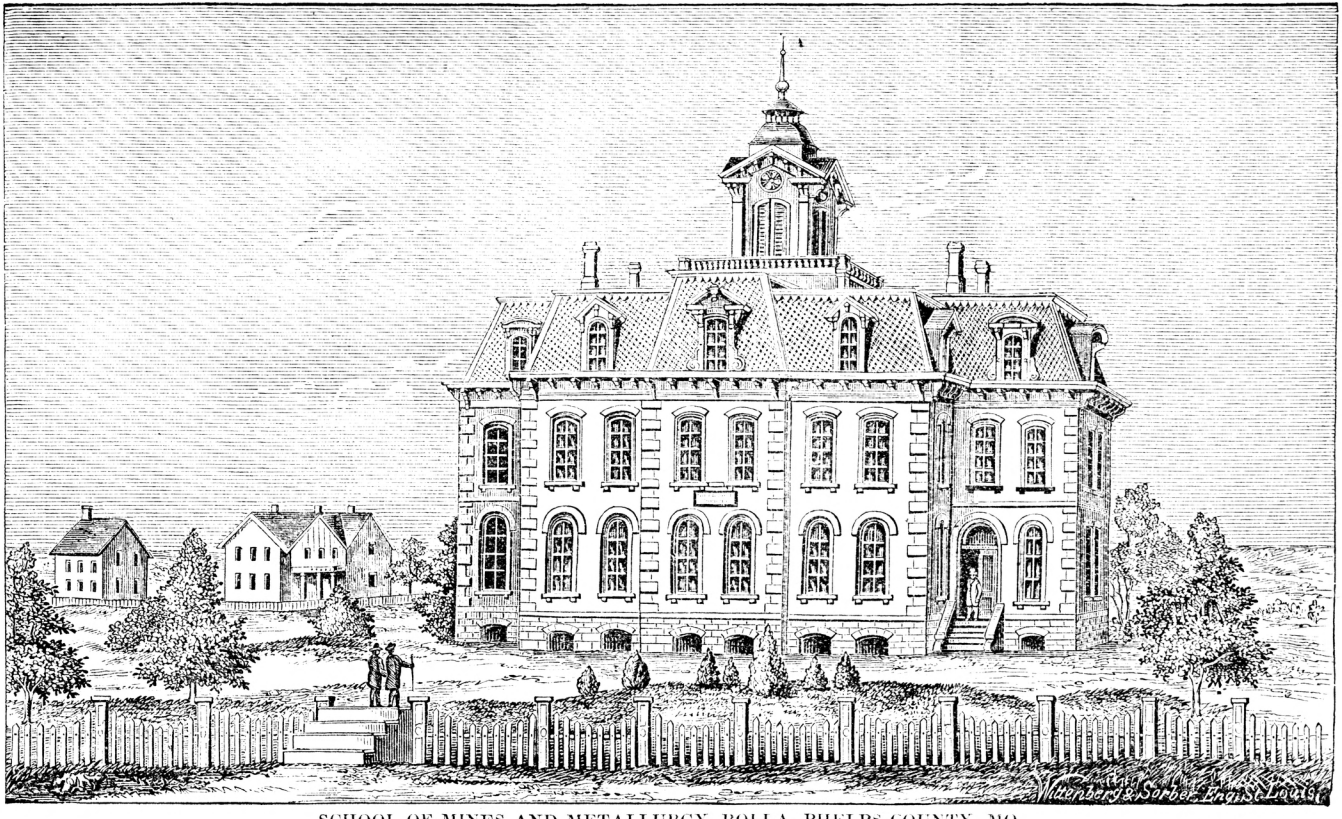



AGRICULTURAL COLLEGE FARM-HOUSE.

## PLATE IV.

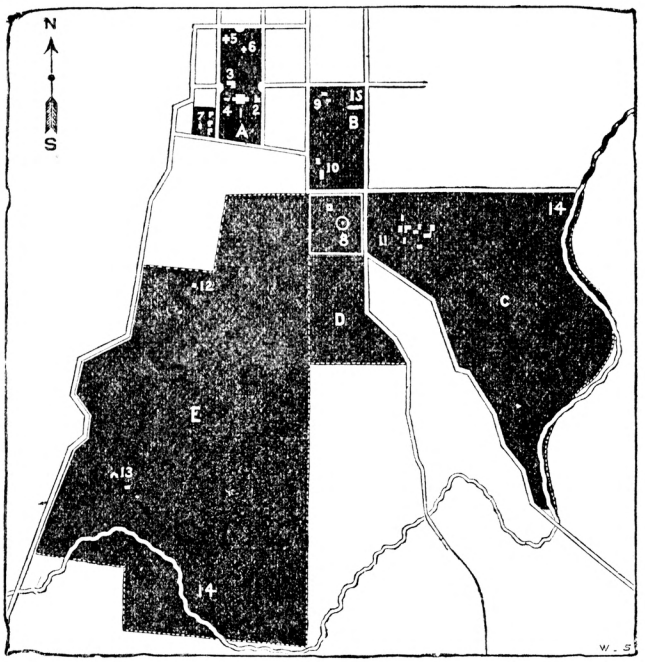
This house fronts west 52x44, with vestibule 18x10, and back extensions 116. There are twenty rooms, besides 2 cottages, 2 barns with stables, ice-house and other out-buildings. It was built by Wm. W. Hudson, formerly President of the University. It is a large and excellent house, and beautifully located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

PLATE V.




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 Hinkston 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,

**1879—1880.**

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FOUNDED, 1820—ORGANIZED, 1840.

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JEFFERSON CITY:
CARTER & REGAN, STATE PRINTERS AND BINDERS.
1880.

# Announcement for 1880-1881.

The Academic, Agricultural, Normal and Engineering Schools will open the 2d Monday (13th) of September, 1880. The Law and Medical Schools will also open September 13th.

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, 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, 1881.

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 JOHN S. PHELPS:

SIR: As required by the act of Congress, approved July 2, 1862, entitled "An act donating public lands to the several States and Territories," and also an act of the General Assembly of the State of Missouri, approved February 24, 1870, entitled "An act to locate and dispose of the congressional land grant," I herewith have the honor to present the report of the Board of Curators of the State University for the year ending June 3, 1880.

In the reports, accompanying this communication, of the President of the University, and also of the Professors having charge of the various Departments of the Institution, you will find a full statement, exhibiting the progress and condition of the several colleges or departments of instruction in the University, the course of study pursued in each, and the number and names of the officers and students.

During the collegiate year just ending, the progress of the Institution has been marked and satisfactory. The number of students has been greater than at any other period since the organization of the University.

In the general character of the students, male and female, in attendance, their devotion to the course of studies prescribed, their general deportment and observance of discipline, have justly received the commendations of their teachers, and tended to strengthen the confidence of an enlightened public in the value and utility of the State University, and its capability to meet all the demands of higher education in the State.

As to the importance of sustaining this Institution of learning, standing as it does under our Constitution and laws, at the head of our State educational system, and commending it at the same time to the patronage of all the people of the State, it could receive no stronger endorsement than that given by the Missouri Press Association which met in Columbia on the 27th day of May, 1879, and when its enlightened representatives had a full opportunity to witness and to study the character of the instruction given, and the work performed here in all the various Departments of the Institution than the following resolution, which was unanimously passed by said Association:

"*Resolved*, By the Missouri Press Association now assembled in Columbia, that we have been most favorably impressed with the advancement made here, in pressing forward our educational interests; commending as we do any institution in the State,

devoted to the sacred cause of education, whether public, private or denominational, we only discharge a duty devolving upon us, in expressing the just pride which we feel in sustaining the University of the State of Missouri, at this time in a most prosperous condition; and we commend it most cordially to the liberal patronage of the people of all the counties of the State, and urge upon the General Assembly the necessity of providing for a larger endowment of the Institution, and all its Departments, blending it more intimately with the common schools of the State, and all other institutions forming a part of our State system of education under the Constitution and laws, in order that the sons and daughters of Missouri may enjoy at least equal advantages of practical education and enlarged liberal culture, to those enjoyed by the youth of any other State in the Union."

As our population and wealth increase, and the great body of the people feel a more earnest interest in the education of their children, so a larger provision must be made to meet the increasing demands.

As the University grows in the greatly increased number of its students, the facilities for their comfort, and accommodation must be proportionately enlarged.

At this time the buildings of the University are not sufficient to meet the public demands. The Chapel and Library Hall need to be enlarged at once, which could be done at a very small expense to the State, estimates of the cost thereof having already been carefully made, and a bill having passed the Senate at the last session of the General Assembly, but which, for the lack of time, was not considered in the House. The large farm adjoining the University Campus, and which was a gift to the State by the people of Boone county, for the uses and purposes of the Agricultural and Mechanical Departments of the Institution needs to be improved and put in the most perfect order, that it may meet the wants of this most valuable Department, and which may be done at a small cost to the State, by appropriating a portion of the prison labor confined at Jefferson City, for that purpose.

What the University most needs is a certain and steady annual income commensurate with the demand arising from the public patronage, and which comes from every quarter of the State.

This can only be obtained by increasing the permanent endowment of the Institution, and the Curators can look to no other source for this aid than the State, whose Institution it is; and, under all the Constitutions which have existed and under which we have lived since its admission into the Union in 1820, does not the obligation to provide such endowment rest fairly upon its General Assembly? And it occurs to me that this obligation is socially binding upon Missouri, when I state the fact, that the General Assembly has never appropriated a single dollar out of the State Treasury as a part of the fixed and permanent endowment of the State University, except a small sum which was appropriated by an act approved March 11, 1867, for the purpose of aiding to rebuild the President's house, which had been accidentally destroyed by fire. All that property which constitutes its permanent endowment, and which is invested in bonds, came from the Government of the United States, and its spacious buildings, the main University edifice, the Agricultural and Mechanical building, the Campus and the improvements therein, the six hundred and forty acres comprising the Agricultural College farm, with all the improvements thereon, and which now belongs to the State, were donated by the citizens of Boone county in order to insure the location of the State University in their county, and considering the time and circumstances when these donations were made, they were acts of munificence rarely met with in our country.

It seems to me that these facts furnish a strong argument, and constitute a powerful claim on the part of the Institution upon the State, to provide an ample endow-

ment to meet its pressing wants, in order to accommodate the sons and daughters of Missouri, who are crowding its halls to avail themselves of the advantages of education and culture that are offered here.

Within the last year a spacious Observatory has been erected upon the College Campus, and a fine Telescope purchased, approved by skillful and scientific men, the original cost of which, in Germany, was between three and four thousand dollars, and all of which has been done without charge to the University fund. For this munificent donation to the State and institution the people of Missouri are indebted to the liberality of Dr. Laws, the present learned and able President of the University.

It is a lamentable fact that few States in the American Union have been more backward than Missouri, with all her boasted wealth, in making ample provision for those higher institutions of learning, recognized in the Constitution and laws of the State as a part of our public system of education. Institutions established for the purpose of preventing crime, of promoting the intelligence, social order and public morals of the entire community have been meagerly supported in our State, whilst penal institutions have lavished upon them the most liberal expenditures.

In the stirring words of President White of Cornell University: "Talk," says he, "of economy; go to your State legislators, what strange ethics in dealing with the public institutions. If asked for money to found an asylum for idiots and lunatics, for the blind, or the deaf and dumb, you will find legislatures ready to build palaces for them. Millions of dollars are lavished upon your idiots, and deaf, and dumb, and blind, and lunatics. Right glad," he exclaims, "I am, it is so. [This noble sentiment is endorsed by every benevolent heart.] But when you come to ask aid even in measured amounts for the development of the young men and women of the State, upon whom are to rest its civilization, and from whom are to flow out its prosperity for ages to come, the future makers of your laws and preservers of your free institutions, how are they left to the most meager provisions for all their preparation."

The wealth of a State is in its intellect, its cultivated intellect, and the wisest economy on the part of our legislators and statesmen is to make such ample provision as will enable every child of the State, however obscure its birth or humble its parentage, to enjoy the best advantages of moral and intellectual culture.

We hear it frequently said by weak-minded persons that colleges and universities are intended mainly for the benefit of the rich, the aristocratic of the land. No greater mistake was ever made. If there is any class whom our colleges and higher institutions especially benefit, it is the great, wide-spread, hard-working poor and middle classes who are to do the work of future generations, who cannot, like the rich, send their children to distant and costly institutions.

By colleges here at home they are able to rise to a level with the sons of wealth—to rise above them, and they do so. Of all our institutions our colleges and universities are the most democratic—the most republican—most of all, they are the institutions of the people, and for the people, and least of all should their boards of control hesitate to call upon the legislatures for support.

Here in Missouri, by the fundamental law, the University is to be supported by the State, as much so as either the Judiciary or the Legislature itself. No State has better understood how to raise up great men among her sons than Virginia. Since the organization of the Virginia University, now one of the foremost institutions of our country, and founded in 1825, only a few years after our own University was established, the State has given to it between two and three millions of dollars; she has provided tuition for twelve or fifteen hundred students, known as State students, and

has boarded a large number free of charge, and it is estimated that the amount brought into and retained in the State by the University is not less than fourteen millions of dollars.

Even in the days of her adversity and poverty she forgets not her University. The annual appropriations now made for the support of the University proper amount to thirty thousand dollars, besides making ample provision for Washington and Lee, and other public institutions of learning. Here is an example worthy to be imitated by the intelligent and liberal minded legislators of our State.

The Board commending these views and recommendations, ask your sympathy and co-operation in aiding them to carry out these noble objects.

I have the honor to remain,
With very high regard,
Your obedient servant,
JAMES S. ROLLINS,
*President B. C. M. S. U.*

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CITY OF JEFFERSON, MO., May 1, 1880.

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.

JOHN S. PHELPS

A copy. Attest;
MICH'L K. MCGRATH, Sec'y of State.

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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.

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 science*," 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.

## 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, Coooper, 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 conveyances of land and subscriptions of money—to be void if the University was not located at the county seat of the county in which they were made.

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

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

"The commissioners, appointed by law to select a site for the 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. It is also an interesting reminiscence, that the only surviving member of the locating commission, is His Excellency, John S. Phelps, the present Governor of Missouri, under whose order this catalogue is issued. May this not be an auspicious omen, and encourage the reasonable hope that the University will achieve a merited and hitherto unattained distinction, under the intelligent and fostering care of his administration. As an augury of this consummation, so devoutly to be desired, the following extract may be given from his campaigning address, bearing in mind that Governor Phelps was chosen, by an overwhelming majority of more than fifty thousand votes, to the highest office in the gift of the people, whilst these words were ringing in their ears, to wit:

"Besides these natural advantages possessed by us in so eminent a degree, we can, with pride, point to *our system of education*, commencing with *our common schools* and ending with *the University* of the State.

"The colored people, but recently kept in ignorance by the servitude which enchained them, now have all the advantages, equally with the whites, of our common

school system.* And, in addition thereto, we have established a Normal School—the Lincoln Institute—for the purpose of educating colored teachers for that race; and it is to be desired that the colored people shall furnish persons competent and well qualified to teach in the common schools, where their children are to be educated. This Normal School, the School of Mines, the Agricultural College, and the STATE UNIVERSITY have received, *and I trust will continue to receive,* the fostering care and support of the State government.

"And here let me say that, during the last few years, it has been a frequent remark that those who preceded us did not care to see sustained in this State a system of common schools. This is unjust to the memory of the true and able statesmen who preceded us.

"Long prior to the civil war, a system of common schools, with provisions equally as wise and beneficent as those contained in our present laws, was established.

"The people of this State increased the taxes 33⅓ per cent. in order to apportion these taxes to the support of common schools in every county in the State. Those taxes are still continued, and are paid by the people without a murmur.

"Thus, long ago, the common schools were liberally endowed, and if the system was not as prosperous as at the present time, it was in part due to its infancy, and the fact that the State, at that time, was sparsely inhabited.

"And for the purpose of encouraging those who desire to qualify themselves to be teachers, we have established four Normal Schools. All of these seminaries of learning have received the liberal support of the State, and will require and should receive further aid.

"And as another evidence that the people of this State at an early day manifested a deep interest in the education of the rising generation, we point with pride to our State University, established just forty years ago. It has greatly merited, and has received the fostering care of the Legislature of our State, and I trust the day is not far distant when its reputation, as a seminary of learning, will equal the reputation of Harvard or Yale."

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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 the 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 system which has vexed so many of the States.

# CORPORATION.

"The University is hereby incorporated and created a body politic, and shall be known by the name of THE CURATORS OF THE UNIVERSITY OF THE STATE OF MISSOURI."

| | | |
|---|---|---|
| HON. JAMES S. ROLLINS, LL. D. | Columbia | Term expires Jan. 1, 1881. |
| CHARLES C. BLAND, ESQ. | Rolla | |
| WILLIAM H. LACKLAND, ESQ. | St. Louis | |
| 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. |
| *WILLIAM E GLENN, M. D. | Rolla | |
| HON. JOHN WALKER | Howard Co. | |
| A. M. MILLARD | Rolla | |

## OFFICERS OF THE BOARD.

HON. JAMES S. ROLLINS, LL. D. ..... President.

*WM. E GLENN, M. D. ..... Vice-President.

ROBERT L. TODD, Secretary.

ROBERT BEVERLY PRICE, Treasurer.

## SCHOOL OF MINES.

### EXECUTIVE COMMITTEE.

*WM. E. GLENN, M. D., Chairman ..... Rolla.

JERRE C. CRAVENS, ESQ. ..... Springfield.

CHARLES C. BLAND, ESQ. ..... Rolla.

C. H. FROST, Treasurer ..... Office at Rolla.

PROF. R. W. DOUTHAT, Secretary.

*Deceased.

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.)

---

SAMUEL SPAHR LAWS, A. M., M. D., LL. D.,
*President and Professor of Metaphysics*

JOSEPH G. NORWOOD, M. D., LL. D.,
*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 of 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 W. 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.*

SCOTT HAYES, S. M., AG., M.,
*Librarian.*

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

---

* 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.*

EDWIN J. JOLLEY, (M. S.,)
*Adjunct Professor of Mathematics and Librarian.*

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 of Semitic Literature and 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,
*Lady Principal.*

CONRAD DIEHL,
*Professor of Art, Aesthetical and Industrial.*

# STUDENTS.

## ABBREVIATIONS.

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

## UNDER-GRADUATES.

| *Names.* | *Residences.* | *Schools Attended.* |
|---|---|---|
| Agee, George Sparrel | Osage county | A., Law. |
| Alexander, Curtis | Nodaway county | M., E., N. H. |
| Angell, Mary Etta | Boone county | M., L., Bk., E., Ger. |
| Anthony, Caruthers | Madison county | L., E., C., N. H. |
| Armstrong, Frank Charles | St. Louis city | E., Ph., M., D. |
| Arnold, Albert Lee | Callaway county | E., M., N. H. |
| Arnold, John Pleasant | Callaway county | E., N. H., M. |
| Austin, Frederick Henry | Caldwell county | Law. |
| Austin, Robert S. | Boone county | Med., L. |

| *Names.* | *Residences.* | *Schools Attended.* |
|---|---|---|
| Bagby, Oliver | Franklin county | Med., D. |
| Bailey, Andrew | Linn county | G., L., D., M., Ger., N. H. |
| Baker, James Bartlett | Linn county | L., C., Ly., Anat., M. |
| Banks, Jane Moore | Boone county | C., L., F., E., G., N. H. |
| Banks, Mary Robert | Boone county | N. H., G., M., L., D , Ger. |
| Barnes, Thomas Moncey | McDonald county | N., M., E., P. S. |
| Barret, Benjamin Grover | Denver, Colorado | E., Ph., M. T. |
| Bascom, Walker | Lafayette county | P. S., Ph., L., N. H. |
| Bass, E. Everette | Boone county | M., L., A., P. S. |
| Bass, Maggie E | Boone county | F., Ger., M., E. |
| Bates, Edward Prewitt | Boone county | M., Ger., N. H., E., F., M. T. |
| Bauerlein, Frank | Jackson county | M., Ph., L., G., P. S., E., M. T. |
| Beattie, Thomas Jefferson | Cass county | M., N. H., L., E., D. |
| Beattie, William Hays | Boone county | E., M., A. |
| Beazley, James Doyle | Boone county | M., E., N. H., A. |
| Beazley, Thomas Lyttleton | Boone county | L., Ph., M., G., N. H. |
| Bedford, Wilson Hackney | Boone county | L., M. |
| Belcher, John N | Boone county | D., E., L., Bk., N., P. S., N. H., M. |
| Bennett, William | Cooper county | N., M., E., Ph. |
| Birney, Milton | Schuyler county | M., C., Ger., E., Ph. |
| Blackburn, Churchill J | Saline county | G., L., M., E. |
| Bland, James Augustus | Clinton county | Ph., F., N. H., Sur., E., M., C., D |
| Blanks, James Garland | Lockhart, Texas | Ger., P. S., Span., M., L., E. |
| Bollinger, Moses E | Bollinger county | M., E., D., A., L. |
| Boulton, Walter Emmet | Boone county | Ger., F., M., E., N. H., D. |
| Bowser, William Arthur | Oquawka, Ill | Law. |
| Bradford, Austin | Boone county | M., L. |
| Bradford, Joel | Boone county | M., L. |
| Bradley, Andrew Jackson | Marion county | M., N., E., D., N. H. |
| Brannan, Thomas | St. Louis | M., E., L., Span., G. |
| Branson, Benjamin F | Maries county | M., E., L. |
| Brashear, John C | Audrain county | L., G., E., M. |
| Brashear, Joseph Green | Audrain county | L., M., D , E., G. |
| Brashears, Davenport Claribel | Cincinnati, Ohio | F., Ger., L., M., D., N. H. |
| Brasher, Asa D | Ray county | M., N. H., A., E. |
| Brasher, Dora | Ray county | N. H., E., Ph., M. |
| Brasnehen, Thomas M | Linn county | Ger., M., P. S., L. |
| Brink, John Robert | Nodaway county | L., E., Ger., M. |
| Brown, Katie C | Boone county | N. H., N., E., M., Bk. |
| Brown, Robert Hunter | Columbus, Ky | N. H., Ger., M., L., P. S. |
| Broyles, Sophronia | Nodaway county | P. S., M., L., D., N. |
| Bruton, Philip | Boone county | Ms., S., Ger., N. H., F., S. |
| Bryan, John Martin | Vernon county | M., L., N. H., E., A., F. |
| Buckner, Alonzo Columbus | Boone county | M., P. S., Ger., N. H., E., F., M. T. |
| Buford, Price | Madison county | E., P. S., M., D., N. H. |
| Buis, Charles Lane | Andrew county | M., L., F., E. |
| Bull, Henry Ruff | Lafayette county | G., L., Ph., M., P. S., E., D. |
| Bulla, Charles D | Gentry county | L., M., E., N. H., Span., M. T. |
| Burroughs, Annie Laurie | Boone county | E., M., Ph., N., N. H., Anat. |

| *Names.* | *Residences.* | *Schools Attended.* |
|---|---|---|
| Buzzard, Halleck | Daviess county | L., N. H., P. S., E., M. |
| Byrd, Edward R. | Monroe county | F., P. S., M. E., N., N. H. |
| Calbreath, David | Callaway county | E., Span., N. H., N., Ms., C., Ph., Ger., F., M. |
| Canniff, George William | Ivy, Ill | L., C., M., D., Anat., M. T. |
| Cannon, John Edward | St. Charles county | M., L., Bk., E, N. H., D., P. S. |
| Carlisle, Ellena Bruce | Boone county | P. S., Ph., M., N. H, L, E |
| Carlisle, Edward Thomas | Boone county | M., E. |
| Carr, Benjamin Franklin | Caldwell county | Med. |
| Carter, Joseph Wesley | Boone county | L., E., M., C. |
| Cave, Ed | Audrain county | M. F., P. S. |
| Chamberlain, Jas. Vanderbilt | St. Louis city | L., G., M., D. |
| Charles, Charles William | Saline county | Med. |
| Chastain, Edward Neville | Benton county | Med. |
| Chiles, Walter | Lafayette county | N. H., L., E., M., G. |
| Chowning, Charles W | Monroe county | M., L., G., E. |
| Chowning, John Liter | Monroe county | M., L., N. H., Ger., D. Sur. |
| Christie, Cassius Westwood | Lewis county | G., L., F., P. S., C., E., Anat., Ph., M. T. |
| Christie, Ezra E | Harrison county | Med. |
| Clark, Bennett Hillsman | Boone county | Med. |
| Clark, Richard Gentry | Boone county | A., M., E. |
| Clayton, Frank Ford | Boone county | M., E., D., P. S., N. H. |
| Clayton, Jennie | Murfresboro, Tenn | N. H., C., Ph, Ms., Anat. |
| Cochran, Charles Chandler | Boone county | L., M., Ph., P. S., N. H., S., M. T. |
| Cochran, Owen Win | Boone county | N. H., L., P. S., N., E., M. |
| Coffin, Nathan Emery | Des Moines, Iowa | Ph., M., Ger., Sur., D., M. T. |
| Coffman, George Williamson | Ray county | E., M., L, P. S. |
| Conklin, Mathew Rothery | St. Louis | L., G., D, M., E. |
| Conrad, Daniel E | Bollinger county | L., M., Bk., E., G., D. |
| Conrad, George E | Bollinger county | L., Ph., G., M. |
| Cook, Henry G | Boone county | N. H., E., M., Bk., A. |
| Cook, Robert Milton | Grundy county | M., Ph., F., L, G., E, M. T. |
| Cooper, Aubert Jennings | Opelika, Alabama | Ger., L., M., E. |
| Cooper, Benjamin Alston | Opelika, Alabama | P. S., L, Ph., M., N. H., E. |
| Cooper, John Meredith | Saline county | Ph., M., P. S., L, G., E., N. |
| Coots, John W | Platte county | Law. |
| Cottingham, Robert Curtis | Randolph county | N. H., M., Ph., L., Sur., D, E. |
| Cowherd, William Strother | Jackson county | L., G., P. S., N. H., Ger., F., M. T. |
| Cox, Albert Henry | Boone county | M., L., E., D., C. |
| Cox, Henry Jefferson | Lawrence county | N. H., G., L., A., M., E., Anat. |
| Crane, Benjamin Rush | Callaway county | C., Ly., P. S., Ph., E., Anat. |
| Crittenden, Henry Huston | Johnson county | P. S., C., L., G., F., N. H., Anat., M. T. |
| Croswhite, James Henry | Randolph county | L., N. H., M., G., E. |
| Cullen, John | Cole county | Med. |
| Curtright, Charles Hardin | Boone county | E, G., C., F., P. S., L., M., N.H., Anat. |
| Dabbs, John Calvin | McDonald county | E., N. H., M., L. |
| Davis, Fannie Clara | Boone county | N. H, N., M., Bk., E. |

| *Names.* | *Residences.* | *Schools Attended.* |
|---|---|---|
| DeFrance, Wesley Halliburt'n | Adair county..... | E., L., G., M., Ph., M. T. |
| Denham, Jas. Montgomery..... | Boone county..... | M., L., E., N. H. |
| Denham, William Henry..... | Boone county..... | M., E., L., N. H. |
| Dennis, Mary ..... | Boone county..... | N., N. H., E., M., Bk., D. |
| Denny, Joseph Snoddy ..... | Howard county..... | Law, L., Ger. |
| Devier, Hiram Kyle ..... | Boone county..... | E., M., Bk., L. |
| Diven, Clarence Leslie ..... | Boone county..... | F., Ger., L., G., M. |
| Donlin, William J..... | Nodaway county..... | M., E., Ger., L. |
| Dooley, James Henry..... | Monroe county ..... | E., M., Bk., P. S., C. |
| Dorsett, Palemon Howard..... | Boone county..... | G., M., E., L. |
| Dorsey, Frank Blair..... | Livingston county..... | Med. |
| Downs, Loyd Sanford..... | Fayette county, Ill ... | M., Bk., N. H, E., N. |
| Drummond, Joseph Hudson... | Johnson county..... | Ms., N. H., F., Ger., S. |
| Dunham, George Albert..... | Harrison county..... | G., L., M., E., D. |
| Dyson, Dunbar S..... | Boone county..... | E., N. H., L., M., G. |
| Earl, Franklin Bascom..... | Daviess county..... | L., Ph., M., Sur., N. H., Ger., E. |
| Edwards, Carr..... | St. Charles county.... | M., Ph., P. S., D., Sur., Ger. |
| Elliott, Sarah Anslie ..... | Boone county..... | E., M., N., N. H. |
| Ellis, Overton Gentry..... | Nodaway county..... | M., N. H., L., F., E., Ger. |
| Ely, Thomas Richard Rupe.... | Atchison county ..... | Law. |
| Emerson, Cyrus Garrett..... | Phelps county..... | Law. |
| Estes, Ambrose..... | Boone county..... | E., A., M., D. |
| Evans, Lanius Duane..... | Boone county..... | L., G., F. |
| Farrow, Robert Leroy..... | Callaway county ..... | E., M., N. |
| Farrow, Maddie..... | Callaway county ..... | N., M., E. |
| Faulk, David W..... | Logtown, La..... | F., Ger., L., M., E., M. T. |
| Faulk, William H..... | Logtown, La..... | M., Bk., L., P. S., E. |
| Felker, Thomas A..... | Maries county..... | M., L., P. S., E., D. |
| Fenton, Georgie Irene..... | Boone county..... | E., N. H., P. S., D. |
| Ferris, Forrest G..... | Livingston county.... | Ger., L., P. S., A. H., E., M. T. |
| Ficklin, Octavia ..... | Boone county..... | Ph., N. H., P. S., M., D., E., Ger. |
| Ficklin, Nellie..... | Boone county..... | L., F., M., D. |
| Field, Sarah Josephine..... | Boone county..... | L., Ger., M., D. |
| Fink, Jacob ..... | Helena, Ark..... | L., Ger., Eng., M., D. |
| Finley, David Caldwell..... | Clay county..... | G., L., M., E. |
| Finney, Frederick S..... | Andrew county ..... | M., E, N. H., P. S. |
| Fisher, Samuel Blair..... | Boone county..... | L., D., N. H. |
| Ford, Dixie Anna..... | Howard county..... | Ger., L., M., F. |
| Foster, Theo. DeClermont..... | Lincoln county..... | Ph., M., N. H., L., E. |
| Fowlston, George..... | Henry county ..... | E., M., N. H., A., D. |
| Fox, James Braden..... | Monroe county..... | M., Ph., P. S., N. H. |
| Freeman, William Howard..... | Carlinville, Ill..... | P. S., E., M., D. |
| French, Charles W..... | Boone county..... | L., M., Bk., D., E. |
| Freund, Jacob A. C..... | Sullivan county..... | Ms., C., N. H., F., E., L., G., M. |
| Fults, Jacob Christopher..... | Ivy, Ill ..... | E., P. S., M., A. |
| Gaynor, John..... | Rulo, Neb..... | Law. |
| Gaitskill, Harry Stuart..... | Monroe county..... | M., E., N. H., D. |
| Gamble, Carrie Cute..... | Cole county..... | Ph., L., M., N. H., D., E. |
| Gamble, Mary M..... | Cole county..... | L., Ger., E., M. |

| *Names.* | *Residences.* | *Schools Attended.* |
|---|---|---|
| Gauldin, Joshua Battel | Saline county | L., E., M., G. |
| Gehring, Gustave | St. Charles county | Ph., M., C., Sur. |
| Gentry, Benajah Pitts | Boone county | G., L., M., C., P. S., D. |
| Gentry, Lula Wyatt | Boone county | M., L., E. |
| Gentry, North Todd | Boone county | L., M., E., G., N. H. |
| Gentry, Overton H | Jackson county | C., Ly. |
| Gentry, Oliver Perry | Boone county | L., M., P. S., E., M. T. |
| George, William B | Nodaway county | M., E., P. S., Ph., N. H. |
| Gibbons, James Hord | Lafayette county | N. H., A., M., E., D. |
| Gillaspy, Rufus | Boone county | N. H., N., Ms., C., Ph., L. E., M. |
| Givens, Olie | Pike county | G., L., P. S., M., D., M. T. |
| Glenn, Moses Ferguson | Boone county | E., M., N. H. |
| Goldsberry, Edward Brooke | Macon county | E., Ph., L, G, M. T. |
| Gordon, James | Boone county | Med. |
| Grady, Henry Douglass | Saline county | Med. |
| Grass, Henry | Gasconade county | N., N. H., M., E. |
| Grasty, Charles H | Audrain county | M., G., L., F. |
| Graves, Charles Thompson | Holt county | M., E, Ph. |
| Graves, Guin | Boone county | M., L., G., E., D., N. H |
| Gray, Benjamin Franklin | Moniteau county | G., P. S., L., Ph., E., M., M. T. |
| Gray, James M | Jackson county | Law, E., M. |
| Green, Evan Deaver | Livingston county | Ly., Ph., C., Ger., Span., D., Civ. Eng., Ms. |
| Gremp, Christian C | Freudenstein, Ger | M., L., E., G., N. H. |
| Gremp, Charles M | Freudenstein, Ger | E., M., N. H, L., G. |
| Gremp, Henry J | Freudenstein, Ger | G., M., L., E., N. H., D |
| Gremp, Solomon A | Freudenstein, Ger | Med. |
| Griffith, Willard | Carroll county, Ky | N. H., L., Ph., F. |
| Guitar, David | Boone county | Ger., M., A., P. S, D., C. |
| Halley, John James | Callaway county | Med. |
| Handley, Eugene Simpson | Lafayette county | E., M., Ph., A., N. H., D. |
| Harbaugh, Charles Edgar | Clay county | E., M., P. S., Span., A., N. H. |
| Hardesty, Frank | Lewis county | N. H., L., E., M. |
| Harris, Joseph Edwin | Montgomery county | Med. |
| Harrison, Andrew J | Utah Territory | M., N. H., E. |
| Harwood, Ripley Barksdale | Dallas, Texas | M., C., Sur., D. |
| Hayes, Frank | Boone county | M., L., E., D., G. |
| Hayes, Gretta | Boone county | P. S., Ph., M., L., G., E. |
| Hayes, Kate | Boone county | Ms., N. H., N., F., Ger., S., M. |
| Hays, William L | Cooper county | M., E., Ph., N. |
| Henderson, George | St Louis county | N. H., M., P S., Ger., E., F. |
| Henderson, Robert Pericles | Osage county | M., D., Ger., Sur., D., L. |
| Hendrick, James Perry | Lafayette county | N. H., A., E., M. |
| Hendrix, Thomas Garnett | Boone county | L., G., E., M., Ph. |
| Henry, Edward Parker | Boone county | Ger., M., N. H., L., E., D. |
| Hewitt, Don Elkanah | Audrain county | Med. |
| Hewlett, Columbus Eli | Barry county | E., M., N. H., P. S. |
| Hickam, Louis N | Boone county | E., M., Bk., A. |
| Hickman, Cornelia | Bates county | L., G, M. |
| Hickman, James K | Louisville, Ky | Law., M. T. |

| *Names.* | *Residences.* | *Schools Attended.* |
|---|---|---|
| Hickman, New. Hollingsworth | Louisville, Ky..... | M. T., L , M., P. S., G., E., Ger., Anat. |
| Hickman, Walker ..... | Bates county..... | L., G , P. S., M., Ph., E. |
| Hilgeman, Henry Bernard..... | St. Louis city..... | M. T., Ms., S., Anat., M., C., N., N. H. |
| Hill, Kimball..... | Bates county..... | Med. |
| Hill, Lewis Price..... | Linn county..... | M., G., L., E., D., N. H., Span. |
| Hillhouse, Daniel Beal..... | Lawrence county..... | N., M., E., A. |
| Hitt, Joel Ingram..... | Audrain county..... | M., Ph., P. S., Sur., L. |
| Hoge, Moses Woods..... | Cooper county..... | Med. |
| Hoge, William McGuffey..... | Cooper county..... | Ms., F., N. H., Ger., S., E., N., Span. |
| Holt, Albert Gilmer..... | Clay county..... ..... | E., M., Ph., D. |
| Holtcamp, Henry..... | Lafayette county..... | M., L., Ger., N. H. |
| Hood, Clifton Rodes..... | Greenville, Miss..... | E., M., L., G. |
| Hopper, Cicero Adolphus..... | Saline county..... | N. H., N., E., P. S., Anat. |
| Horine, George Lunceford..... | Columbia, Ill..... | Ms., L., P. S., E., M., Anat., M. T. |
| Horine, Nellie Waller..... | Columbia, Ill..... .... | P. S., C., Ph., N., N. H. |
| Hubbard, Edward Sylvester... | Harrison county..... | L., M., E., G., D. |
| Hubbell, Finlay David..... | Boone county..... | Ger., M., E. |
| Huffaker, Thomas S..... | Linn county..... | N. H., Ph., M., L., P. S , Ger. |
| Hume, Carrie Lee..... | Boone county..... | M., D., E., Ph., N. H. |
| Hume, Sallie Wood..... | Boone county..... | M., E., D., N. H. |
| Hunton, McGehu Dandridge.. | New Orleans, La..... | M., Ph., L., E , P. S. |
| Hurst, Daniel Morgan..... | Buchanan county..... | M., P. S., N., E. |
| Hurt, Leonidas B..... | Macon county..... | M., N. H., A., E., D. |
| Hurt, William Ambrose..... | Chariton county..... | Ger., Ph., M., Sur., N., D. |
| Hurt, William C..... | Chariton county..... | E., M., N. |
| Husmann, Annie Cecelia..... | Boone county..... | N., N. H., D., M., Bk., E. |
| Husmann, George Charles..... | Boone county..... | L., M., N. H., A., D., E. |
| Husmann, Josephina Louisa... | Boone county..... | N., N. H., D., M., Bk., E. |
| Jackson, Almino Frances..... | Boone county..... | N. H., N., M., E. |
| Jackson, Price..... | Boone county..... | N. H., N., M., E. |
| Jacobs, Alice..... ..... | Boone county..... | N., M., E. |
| Jameson, Hiram P..... | Lincoln county..... | E., M., P. S., D. |
| Jameson, Sallie Reid..... | St. Louis city..... | N. H., Ph., L., M., Ger. |
| Johnston, George Washington | Cooper county..... | Ms., F., N. H., Span., Ger., S., E , N. |
| Jones, James A..... | Jackson county..... | Span., F., N. |
| Kelley, Samuel Harlan..... . | Andrew county..... | L., Ph., F., M., E., Anat., N. H. |
| Kirtley, Jennie..... | Ralls county..... | M., E., Ph., N., N. H. |
| Kirtley, Richard Edwin..... | Ralls county..... | Law. |
| Kyle, Richard..... | Nodaway county..... | E., N. H., M., Ph. |
| LaForce, William Mosby..... | Jasper county..... | Ms., N. H., N., L., G., N., Ger. |
| Land, John B..... | Saline county..... | E., M., L., G. |
| Latham, Josie Bacon..... | Boone county..... | Ms., N. H., C., G. |
| Lawless, Charles Burrell..... | Saline county..... | L., M , Ger., C. |
| Lee, Mosby Arnold,..... | Lafayette county..... | E., M., N., Ph., P. S., N. H. |
| Leedom, John M..... | Schuyler county..... | Med. |
| Leedom, T. P..... | Schuyler county..... | Med. |

| *Names.* | *Residences.* | *Schools Attended.* |
|---|---|---|
| Lockhart, George L | Lafayette county | M., L., E., Sur., N. H. |
| Loeb, Hana Wolf | Boone county | N., H., G., L., M., D., E. |
| Lonsdale, Frank Stewart | Boone county | M. T., C., P. S., F., L., Anat., G., E., N. H. |
| Lonsdale, Kate Victoria | Boone county | Ph., N. H., M., P. S., E., N. |
| Lougeay, Ida E. P | Boone county | N., M., E., N. H. |
| Lovelace, William Greene | Montgomery county. | Ms., F., N. H., Ger., S. |
| Loy, Milton Byron | Cedar county | E., M., Ms., L. |
| Loy, Thomas T | Cedar county | Law. |
| Lubbock, Clinton Henry | San Jose, Cal | Med. |
| Luckett, Fenton E | St. Charles county | M., L., E., P. S., N. H. |
| Lucky, Marion Cortz | Lawrence county | G., N. H., L., Ph., M., A., Ly. |
| Lyon, Andrew R | Knox county | M., N., Ph., Sur., E., L., C. |
| Lyon, Albert W | Knox county | N. H., M., E., N., C. |
| McAfee, Cornelia Lawson | Boone county | N., M., D., E. |
| McAfee, Jennie Moore | Boone county | N. H., Ger., L., M., E. |
| McAfee, Lucy Dade | Boone county | N., M., N. H., Ger., D. |
| McBaine, James Benjamin | Boone county | N. H., M., D., L., E. |
| McClanahan, Benjamin H. | Boone county | G., L., Ph., N. H., M. |
| McCue, James Livingston | Daviess county | E., L., Ph., M., N. H. |
| McDonald, Alexander | Buchanan county | Ph., N. H., M., L., Ger., M. T. |
| McGary, Susie | Callaway county | M., E., N., Anat., N. H. |
| McGhee, Franklin Pierce | Wayne county | Law, M., Ms. |
| McKanna, Isabel | Moniteau county | N., M., E. |
| McLean, William Oldham | Franklin county | M., G., P. S., Ph., E., L., G. |
| Maddex, Ida May | Boone county | M., D., E., N. H. |
| Maddex, Sallie | Boone county | N. H., N., M., Bk., E. |
| Manness, Marquis Hurkalum | Lamar Co, Texas | Med. |
| Manwarring, Charles William | Boone county | L., A., N. H., M., E., D. |
| Marsh, John W | Moniteau county | Med. |
| Martin, Charles P | Boone county | M., Bk., E., D. |
| Massey, Thomas E | Clay county | E., P. S., M., N. H., Span. |
| Maupin, Annie Cornelia | Boone county | M., D., E., Ph., L., N. H. |
| Maupin, Irwin | Franklin county | Med. |
| Maupin, Isabel Lemon | Boone county | C., F., N., P. S., M., E., Ph. |
| Maupin, Julia Fristoe | Boone county | N. H., M., Bk., N., E. |
| Merritt, John James | Montgomery county. | Ger., L., P. S., M., E. |
| Meyer, George Washington | Holt county | M., N. H., L., E. |
| Meyer, Willard P | Holt county | N. H., L., E., M., Bk., Ms. |
| Miles, George Washington | Rawlins Co., Kan | M., L., E., G., C. |
| Miller, Charles B | Boone county | E., N. H., M., D., M. T. |
| Miller, Carrie Gamble | St. Louis city | E., M., L. |
| Miller, James Oliver | Smithton, Ill | E., L. |
| Miller, Pryor C | Daviess county | Ph., E., P. S., L. |
| Mitchell, Charles P | Jackson county | D., C., M., Sur., Ly., M. T. |
| Monnig, Joseph Anthony | Gasconade county | P. S., N. H., M., C., E. |
| Moore, Joseph Willis | Linn county | N. H., P. S., L., M., C., E. |
| Moore, Mary Ruth | Clay county | Ger., C., P. S., M., F., Anat., N. H. |

| *Names.* | *Residences.* | *Schoools Attended.* |
|---|---|---|
| Moore, W. Maurice | Paris, Texas | Med. |
| Morris, John Wesley | Holt county | M., L., N. H., D., E., M. T. |
| Morse, Fred Hamilton | Boone county | M., D. |
| Mosby, William Shortridge | Montgomery county | L., Ger., E., M. |
| Mosley, Charles Louis | Gentry county | N. H., G., M., L., E. |
| Mowder, Frank Charles | Caldwell county | L., P. S., E., M. |
| Moyer, Charles Hunter | Linn county | M., D., E., N. H. |
| Muns, George Elias | Montgomery county | Med. |
| Nattrass, Jennie Cleland | Greene county | P.S., M., N., Ph., C., E., Ger., N. H. |
| Neilson, Thomas Percival | Boone county | L., M., E. |
| Nichols, Anna R. | Boone county | E., M., Ph., N. |
| Nichols, George Henry | Macon county | M., N., E., Ph., C., N. H., Sur. |
| Nowerski, Broneslaw Jozef | Boone county | L., D., E., M., Bk. |
| Nuckles, Melville Green | St. Clair county | Med., Span. |
| O'Hage, Justus | Germany | Med. |
| O'Mahoney, Daniel | Boone county | L., G., E., M., Ph., M. T. |
| Otto, Leonard Henry | Boone county | Ph., M., L., P. S. |
| Overstreet, James Moses | Linn county | Ms., L., M., P. S., C. |
| Overstreet, John William | Macon county | E., N. H., Ph., M. |
| Owen, Walter Edwin | Henry county | M., C., P. S., Ger., E., M. T. |
| Patterson, James Lucius | Lewis county | M., D., Bk., E., Ger., C. |
| Patton, Harry W. | Vincennes, Indiana | Law, M. T. |
| Pauley, William Arthur | Boone county | E., M., Bk., D. |
| Payne, Joseph T. | Pettis county | M., D., L., Sur. |
| Pendleton, LaFayette | Warren county | M., E., L., Ph., N. H. |
| Penney, Walter Dunn | Cape Girardeau Co | Law. |
| Pharis, Thomas Akeman | Bates county | Law. |
| Pharr, James R. | Pike county | M., L., G., E., C., M. T. |
| Phetzing, Uriah G. | Lafayette county | Law. |
| Phillips, Hiram | Boone county | D., Top'l Eng., Ms., N. H., C., M. T. |
| Phillips, J. Leslie | Boone county | Sur., Top'l Eng., D., Ms., N. H. C., M. T. |
| Pierce, Isaac Thomas | Knox county | N. H., E., A., D. |
| Pigott, William Trigg | Cooper county | Law., M. T. |
| Porter, David White | Holt county | L., M., Bk., E., M. T. |
| Potts, Luther Emmett | Boone county | D., E., M., Bk., N. |
| Potts, Lilburn Henry | Boone county | N., M., E., L. |
| Powers, John | Henry county | Med. |
| Prigmore, Russell Young | Lafayette county | N. H., L., G., N., E., M. |
| Pulliam, Lawson | Saline county | E., P. S., M., D., N. H. |
| Quarles, Lafayette | Boone county | M., Ph., G., L., D., E., N. H. |
| Raboteau, Bert C. | St. Louis city | M., Ph., Ger., E. |
| Raboteau, Junius B. | St. Louis city | E., M., N. H., D., M. T. |
| Ralph, Emmett Darwin | Spearfish, Dakotah | M., P. S., E., L., N. H., M. T. |
| Randolph, James Orville | Montgomery county | L., G., P. S., M., E. |
| Rathbun, George S. | Lafayette county | L., E., Ph., M., Ger., N. H. |
| Rea, Robert Wilson | Andrew county | Ph., P. S., L., M., E., N. H. |
| Reed, Benjamin Franklin | Lincoln county | Law. |

| *Names.* | *Residences.* | *Schools Attended.* |
|---|---|---|
| Reed, Lida | Randolph county | L., M., Ph., E. |
| Reid, Laura Ella | Boone county | N., M., E., P. S. |
| Reynolds, Samuel Morehead | Henry county | M., G., Ger., L., M. T. |
| Reynolds, Sterling Price | Callaway county | M., Ph., P. S., L., G., E., N. H. |
| Rice, John Franklin | Randolph county | M., L., E., G. |
| Richardson, James H | Quincy, Ill | L., N. H., Ger. |
| Ridge, Thomas S | Jackson county | L., M., G., E., M. T. |
| Robb, Marcus H | Cape Girardeau Co | Ms., L., F., C. |
| Roberts, Alice | Boone county | M., N., Ph., E., N. H. |
| Roberts, Fayette Brown | Boone county | Med. |
| Roberts, Preston J | Jackson county | Ph., N. H., M., L., E. |
| Robertson, Sallie Austin | Randolph county | E., M., N. H. |
| Rogers, Archie Bowen | Boone county | Med., L. |
| Rogers, Charles D | Audrain county | Sur., D., P. S. |
| Rogers, James Wallace | Boone county | M., A., E., N. H. |
| Rollins, Jarrot Laban | Boone county | G., L., M., N., E., N. H., D. |
| Roper, George Washington | St. Charles county | L., N. H., M., E. |
| Rouse, William H | Monroe county | E., M., Bk., P. S., C. |
| Rowden, Robert L | Maries county | M., E., P. S., L., D. |
| Rowland, William P | Macon county | Ger., C., Ly., L., Sur., D. |
| Rozzelle, Wesley Houston | Caldwell county | Ger., P. S., Ly., M., E. |
| Ruge, Julius P | Warren county | Med. |
| Runyan, Lee J | Boone county | E., M., Bk., D., N. H. |
| *Rupard, James William | Boone county | L., G., M., E. |
| Russell, Edgar | Caldwell county | C., Ph., P. S., Sur., M., Ger. |
| Russell, John Constantine | Mississippi county | M., E., L., Ph. |
| Russell, Joseph J | Mississippi county | Law. |
| Russell, Linnie Eolia | Boone county | Ms., N., Ph., M., C., N. H. |
| Russell, Walter Thomas | Boone county | A., C., N. H., M. T. |
| Salmon, William Lee | Boone county | E., M., P. S., N. H. |
| Sames, John R | Audrain county | L., M., E., G., N. H. |
| Samuel, Swan Eugene | Callaway county | E., M., Bk., N., N. H., P. S. |
| Sayre, Farrand | Lewis county | M., N., F., D., P. S., E., N. H., M. T. |
| Scearce, Oscar P | Clinton county | Ph., N. H., A., M., E., M. T. |
| Schenck, Franklin Ellis | St. Marys, Kansas | N. H., Ph., M., L., E. |
| Schrantz, Ashnah B | Holt county | L., E., P. S., Sur., M. |
| Schrœder, Charles | Franklin county | M., Ph., N., E., L. |
| Schwabe, James Webb | Boone county | L., E., G., M., Bk., N. H. |
| Schwartz, Henry Christian | Warren county | P. S., L., N. H., E., G. |
| Schwettmann, Fred | Benton county | M. T., N. H., A., D., M., Bk., Ger., E. |
| Scott, Wallace William | Boone county | M., E., P. S., N. H. |
| Searcy, Effie D | Boone county | L., F., D., N. H., E. |
| Searcy, Jefferson Beauregard | Boone county | L., Ger., M., Span., M. T. |
| Sexton, Lida | Boone county | M., F., D., E., N. H. |
| Sexton, Millard Payne | Boone county | Med. |
| Sexton, Nallie | Boone county | M., P. S., C., Ly., N. H., E., F. |
| Shackleford, Walter Sly | Cooper county | L. |
| Sheetz, James Lucas | Clay county | Law. |

*Deceased.

| *Names.* | *Residences.* | *Schools Attended.* |
|---|---|---|
| Sheley, Woodford Wood | Callaway county | E., M., A. |
| Shepard, Frank Otis | Saline county | L., G., M., Ms. |
| Sheppard, Jesse C | Cape Girardeau Co | Law. |
| Shock, Leslie Everett | Boone county | M., E., N., N. H., P. S., D. |
| Simco, George W | Callaway county | Med. |
| Sitton, Charles Kinchen | Lincoln county | Ms., N. H., N., S., M. T. |
| Smith, Andrew J | Fayette Co., Ill | Law, Ms. |
| Smith, Francis Marion | Fayette Co., Ill | Law. |
| Snoddy, James Samuel | Howard county | L., M., Ger., P. S., G., D. |
| Sterne, Frank | Boone county | M., P. S., N. H., F., E., P. S. |
| Stubblefield, John Loxley | Barry county | D., P. S., F., E., A., N. H., C., M., Ph., Span. |
| Stubblefield, Thomas P | Barry county | A., M., E., N. H. |
| Stubblefield, William P | Barry county | A., M., E., N. H. |
| Sweeney, Maude Watkins | Boone county | M., N., Ph., E. |
| Swindle, George | Barry county | M., L., G., E. |
| Swindle, John | Newton county | M., C., D., F., N. |
| Swindle, Lafayette | Barry county | L., G., M., E., N. H. |
| Tandy, Henry H | Boone county | E., N., M., A., N. H. |
| Taylor, James Henry | Morgan county | N. H., N., L., F., E., Ph. |
| Taylor, John Martin | Lafayette county | M., L., Ger., Ph., D., M. T. |
| Taylor, Noland | Morgan county | Ph., Sur., E., N. |
| Taylor, Robert Henry | Helena, Ark | L., F., Ms., P. S., Law. |
| Taylor, William Albert | Morgan county | N., Ms., C., N. H., Ph., E., F. |
| Terrill, D | Boone county | Ger., L., P. S., F., C. |
| Terrill, Julian Oscar | Marion county | M., E., L., Anat. |
| Terrill, Nettie | Boone county | N. H., M., L., E. |
| Terrill, Robert | Boone county | L., Ph., M., P. S., Ger., M. T. |
| Theilmann, Gustav Adolph | Caldwell county | M., L., Sur., D., C. |
| Thomas, Thomas Clinton | Boone county | P. S., D., Top'l Eng., Ms., N.H., C |
| Thornton, James Simpson | San Antonia, Texas | Ph., P. S., L., M., E., M. T. |
| Thurston, Amanda Lee | Boone county | M., E. |
| Tindall, Willoughby Cordell | Howard county | P. S., M., Ger., F., D., Civ. Eng., N. H., M. T. |
| Trigg, Abner Jasper | Saline county | Med. |
| Turner, Sterling Price | Boone county | M., E. |
| Tuttle, Sallie Virginia | Boone county | F., M., L., D., E., N. H. |
| Vallandigham, Charles E | Boone county | M., Ph., N. H. |
| Van Deventer, Edwin Drake | Montgomery county. | Med. |
| Venable, Elanise | Boone county | E., M., D., N. H. |
| Venable, Paul | Boone county | E., M., D. |
| Wagner, Louis | Cole county | M., Ph., P. S., L., E., M. T. |
| Walker, Clinton Davis | Macon county | M., Bk., N., E., N. H. |
| Walker, James Henry | Cooper county | L., G., M., A., D. |
| Walker, John Hutchison | Cooper county | M., L., D., E., Ger. |
| Walker, Mary Bell | Cooper county | M., G., L., N. H. |
| Wallingford, Charles H | Buchanan county | F., Ger., Anat., E. |
| Watson, Edgar David | Boone county | G., L., E., M, Bk. |
| Westlake, John Wesley | Boone county | E., M., N., N. H. |

| *Names.* | *Residences.* | *Schools Attended.* |
|---|---|---|
| Whittle, Thomas William | Boone county | E., M., L., D. |
| Wilcox, William Payne | Omaha, Neb | Ger., L., N. H., M., E., M. T. |
| Wilkes, Ed | Boone county | Ms., C., N. H., F., Ger., S., M. |
| Williams, C. E | Boone county | N., P. S., E., M. |
| Williams, George Harvey | Cape Girardeau Co | Med., M. T. |
| Williams, John Freeman | Macon county | Ph., M., G., P. S., L., E., M. T. |
| Williams, John W | Boone county | M., N., E., N. H. |
| Williams, Joseph Welling | Cape Girardeau Co | L., E., Ger., M. |
| Williams, Ralph Houston | Laclede county | Med. |
| Williams, Robert Hughes | Franklin county | E., M., N. H. |
| Williams, William Perry | Pettis county | G., L., M., M. T. |
| Williams, Webb Winter M | Buchanan county | M., P. S., L., D., E., Ger., M. T |
| Williamson, William Fergus'n | Clinton county | M., F., C., Ms., Ger. |
| Williamson, William Silas | Lafayette county | M., Ph., L., E., N. H., D. |
| Wilson, Benjamin F | Chariton county | Ger., Sur., D., M., M. T. |
| Wilson, Robert Pinkney | Cape Girardeau Co | Law. |
| Wilson, William Henry | Nodaway county | M., E., P. S., L., N. H. |
| Wingfield, Urial B | Saline county | Med. |
| Winn, Georgiana | Clinton county | Ger., F., P. S., C., E., M., Ph. |
| Winn, James W | Clinton county | M., Ph., C., Ger., D., M. T. |
| Winston, John Stevenson | Saline county | Med. |
| Wood, Harry B | Jackson county | Ph., L., P. S., M., E., Ger., M. T. |
| Wood, Leonard Wilson | Carrollton, Ill | L., F., P. S., G., M., E., N. H. |
| Woods, Cornelius H | Clay county | E., N. H., M. |
| Woolfolk, Juliet | Boone county | N. H., N., M., Bk., E. |
| Wright, Alexander Persinger | Boone county | M., E., D., P. S. |
| Wright, Eugie Kyle | Boone county | M., N., N. H., E. |
| Yeater, Charles Emmett | Pettis county | Ms., N. H., G. |
| Zelle, Charles Edmund | St. Louis city | L., M., E., D., G., Bk., M. T. |
| Zillman, Augusta W | Chariton county | M., Ph., E., N. H. |
| Zook, Charles D | Holt county | Ger., F., M., L., E., M. T. |

## POST-GRADUATES.

| *Names.* | *Residences.* | *Schools Attended.* |
|---|---|---|
| Anderson, Emma Price | Boone county | D. |
| Babb, Eugenia P., Stephens Fem. College | Boone county | L., F. |
| Babb, J. G., A. B., Mo. Univ | Boone county | Law. |
| Boulton, Robert P., L. B., Mo. Univ | Boone county | Ger., L., F. |
| Burnam, Lucie | Boone county | D. |
| Carr, Olirea Anderson, A. B., Ky. Univ | Boone county | Hebrew. |
| Crumbaugh, James E, Ph. B., Mo. Univ | Boone county | Med. |

| *Names.* | *Residences.* | *Schools Attended.* |
|---|---|---|
| DeTray, Nettie E., Normal Graduate | Cooper county | N. H., Ger., M., D., E., Anat. |
| Field, Fannie Provines, Ph. B., Mo. Univ. | Boone county | F. |
| Fisher, Elizabeth LeGrand, Pres. Syn. F. Col. | Boone county | F. |
| Flood, George E., S. B., Ag. M., Mo. Univ. | Boone county | Sur., Top'l Eng., D. |
| Frazee, Mary E. | Boone county | L., D. |
| Guild, Franklin E., S. B., Acardia College | Iron county | C., D., Sur., M., M. T. |
| Harrison, Charles L., Top'l Eng., Mo. Univ. | Callaway county | M. T., C., Ly., Civ. Eng., D., Ms., M. |
| Hayes, Lee, A. B., Top'l Eng., Mo. Univ. | Alma, Col. | M., Ly. |
| Tapley, Joe, Ph. B., Mo. Univ. | Pike county | Law, M. T. |

## STUDENTS OF SCHOOL OF MINES AND METALLURGY.

| *Names.* | *Residences.* | *Studies.* |
|---|---|---|
| Allen, Alice | Rolla | E., Ger. |
| Anderson, Hiram R | Crawford county | E., M. |
| Anderson, Nannie | Dent county | E., M. |
| Beitzel, Arnott H. | Rolla | E., M., L. |
| Bishop, Jennie | Rolla | Drawing. |
| Bishop, Flora | Rolla | E., M., L. |
| Bolin, J. C. | Iron Ridge, Crawford Co. | E., M. |
| Bowman, Laura | St. James, Phelps Co. | E., M. |
| Brown, Ida A. | Phelps county | E., M. |
| Burford, L. D. | Cape Girardeau | C., Civ. Eng. |
| Booth, J. Mc. K | St. Louis county | 1st Year, Reg. |
| Carson, Authur C. | St. James | Gradute, M., E. |
| Chase, J. Frank | Neosho, Newton Co | 1st Year, Reg. |
| Craig, Alfred A. | Memphis, Scotland Co. | 1st Year, Reg. |
| Chamberlin, Stanley Q. | Phelps county | E., M. |
| Dickerson, Allen | Iberia, Pulaski Co | E., M., Bk. |
| Douthat, Claude D. | Rolla | E., M., Ger. |
| *Faris, Emmet | Cleavesville, Gasconade Co | E., M. |
| Faulkner, Lizzie | Rolla | E., M. |
| Ford, J. O. | Granville, Monroe Co. | 1st Year, Reg. |
| French, William B. | Phelps county | E., M. |
| Gallaher, Philip C. | Rolla | E., M., N. H. |
| Guild, Walter C. | Rolla | E., M., N. H. |
| Garvens, William | Ozark, Phelps Co. | E., M., Drawing. |
| Gibb, Frank W. | Little Rock, Arkansas | 2d Year, Irreg. |
| Hall, Alice | Rolla | E., M., Drawing. |
| Hatch, Morton W. | Rolla | E., M. |
| Hutcheson, Imogene | Rolla | E., M., Bk. |

*Deceased.

| *Names.* | *Residences.* | *Studies.* |
|---|---|---|
| Hutcheson, R. S. | Maries county | E., M., N. H. |
| Hildebrand, Adam M. | High Grove, Maries Co. | Anat., N. H., M. |
| Hume, Lizzie | Rolla | E., M. |
| Lane, Thomas E. | Dent county | Anat. |
| Livesay, Amanda | Rolla | E., M., Ger., Draw |
| Lyman, Burton | Phelps county | M., Assaying. |
| Lyman, Cora B. | Phelps county | E., M. |
| McQueary, William M. | Ash Grove, Greene Co. | M., Bk. |
| Mell, Sedalia | Rolla | E., M., L. |
| Millard, Thomas F. | Rolla | E., M., Ger., Draw. |
| Mills, James W. | Phelps county | E., M., N. H., Draw. |
| McDonald, A. | St. James, Phelps county. | M., Bk. |
| Minger, Henry | Rolla | E., M., Ger. |
| Marsh, E. | Alton, Ill. | Chem. |
| O'Brien, Mary Anna | Rolla | E., M., Draw., Ger. |
| Painter, William R. | Carrollton, Carroll county | 2d Year, Reg. |
| Pierce, Edwin F. | Clinton, Henry county. | E., M., Chem., Lab. |
| Prigmore, Electra | Rolla | E., M. |
| Peck, James C. | Pacific, Franklin county. | E., M., Draw. |
| Peck, Anna A. | Pacific, Franklin county. | E., M., Draw. |
| Robertson, Frank T. | Carrollton, Carroll county. | 2d Year, Reg. |
| Ross, Beauregard. | Houston, Texas county. | 1st Year, Reg. |
| Schwarz, Herman H. | Pacific, Franklin county. | 1st Year, Reg. |
| Salts, Wm. J. | Phelps county | E., M. |
| Smith, Lorin X. | Rolla | Graduate, M. E. |
| Shelton, James W. | Crocker Stati'n, Pulaski Co | E., M., Bk. |
| Stiff, Lelia P. | Rolla | E., M. |
| Singleton, John M. | Rolla | Chem. |
| Strine, John H. | Phelps county | E., Anat., Phys, N. H., M. |
| Strobach, Chas. F. | Rolla | E., M., Bk. |
| Summerfield, Louis. | Rolla | E., M., Ger., Draw. |
| Summers, Edward B. | Milburn, Kentucky. | 2d Year, Reg. |
| Tipton, Samuel. | Rolla | E., M., Ger., Draw. |
| Van Devander, Herman N. | Williamsburg, Penn. | M., F., Civ. Eng. |
| Vining, Emma M. | Dent county | E., M., Phys., N. H. |
| Webster, Frank. | Rolla | E., M., Ger. |
| Wilson, Carrie B. | Rolla | E., Fr., M. |
| Wishon, Emma. | Rolla | E., M., Ger., Draw. |
| Watkins, Jennie. | Dent county. | E., M., Ger., Draw. |
| Wilson, Dora E. | Rolla | E., M. |
| Wash, James A. | St. James | M., Phys., N. H. |
| Whitaker, A. F, | Iberia, Pulaski county. | E., M., Bk. |
| Williams, Edward E. | Ozark Station, Phelps Co. | E., M. |

# SUMMARIES.

## A. SCHOOLS.

1. *Academic Schools.*

   a. Science.

   1. Physics 83; Natural Philosophy 32 ..... 115
   2. Chemistry ..... 100
   3. Natural History 355; Human Anatomy and Physiology 12 ..... 367
   4. Mathematics ..... 410
   5. Metaphysics ..... 30

   b. Language.

   1. Hebrew and Semitic Literature ..... 17
   2. Greek ..... 91
   3. Latin ..... 232
   4. Modern Continental German, French and Spanish ..... 179
   5. English ..... 326

2. *Professional Schools.*

   1. Agriculture ..... 48
   2. Normal 72, and Institute 41 ..... 113
   3. Law ..... 28
   4. Medicine—irregular 3, regular 40. ..... 43
   5. Mining School at Rolla ..... 71
   6. Engineering—regular 12, irregular 28 ..... 40
   7. Military Science and Tactics ..... 64
   8. Art and Drawing ..... 206

## B. COUNTIES.

| Counties. | University..... | Min. School..... | Counties. | University..... | Min. School..... |
|---|---|---|---|---|---|
| Adair | 1 | ..... | Lewis | 4 | ..... |
| Andrew | 4 | ..... | Lincoln | 4 | ..... |
| Atchison | 1 | ..... | Linn | 8 | ..... |
| Audrain | 8 | ..... | Livingston | 3 | ..... |
| Barry | 6 | ..... | Macon | 6 | ..... |
| Bates | 4 | ..... | Madison | 2 | ..... |
| Benton | 2 | ..... | Maries | 3 | 2 |
| Bollinger | 3 | ..... | Marion | 1 | ..... |
| * Boone | 155 | ..... | McDonald | 2 | ..... |
| Buchanan | 4 | ..... | Mississippi | 2 | ..... |
| Caldwell | 6 | ..... | Moniteau | 3 | ..... |
| Callaway | 13 | ..... | Monroe | 7 | 1 |
| Cape Girardeau | 6 | 1 | Montgomery | 7 | ..... |
| Carroll | ..... | 2 | Morgan | 3 | ..... |
| Cass | 1 | ..... | Nodaway | 8 | ..... |
| Cedar | 2 | ..... | Newton | 1 | 1 |
| Chariton | 4 | ..... | Osage | 2 | ..... |
| Clay | 7 | ..... | Pettis | 3 | ..... |
| Clinton | 5 | ..... | Phelps | 1 | 42 |
| Cole | 4 | ..... | Pike | 3 | ..... |
| Cooper | 11 | ..... | Platte | 1 | ..... |
| Crawford | ..... | 2 | Pulaski | ..... | 3 |
| Daviess | 4 | ..... | Ralls | 3 | ..... |
| Dent | ..... | 4 | Randolph | 5 | ..... |
| Franklin | 5 | 3 | Ray | 3 | ..... |
| Gasconade | 2 | 1 | Saline | 13 | ..... |
| Gentry | 2 | ..... | Schuyler | 3 | ..... |
| Greene | 1 | 1 | Scotland | ..... | 1 |
| Grundy | 1 | ..... | St. Charles | 5 | ..... |
| Harrison | 3 | ..... | St. Clair | 1 | ..... |
| Henry | 4 | 1 | St. Louis county | 1 | 1 |
| Holt | 7 | ..... | St. Louis city | 10 | ..... |
| Howard | 4 | ..... | Sullivan | 1 | ..... |
| Iron | 1 | ..... | Texas | ..... | 1 |
| Jackson | 9 | ..... | Vernon | 1 | ..... |
| Jasper | 1 | ..... | Warren | 3 | ..... |
| Johnson | 2 | ..... | Wayne | 1 | ..... |
| Knox | 3 | ..... | | | |
| Laclede | 1 | ..... | Total students from Mo. | 442 | 67 |
| Lafayette | 14 | ..... | | | |
| Lawrence | 3 | ..... | Total counties | ..... | 78 |

* 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..... | Normal Institute | Min. school..... |
|---|---|---|---|
| Alabama | 2 | | |
| Arkansas | 2 | | 1 |
| California | 1 | | |
| Colorado | 1 | | |
| Dakota | 1 | | |
| Germany | 5 | | |
| Illinois | 12 | | 1 |
| Indiana | 1 | | |
| Iowa | 1 | | |
| Kansas | 2 | | |
| Kentucky | 4 | | 1 |
| Louisiana | 3 | | |
| Mississippi | 1 | | |
| Missouri (78 counties) | 438 | | 67 |
| Nebraska | 2 | | |
| Ohio | 1 | | |
| Pennsylvania | | | 1 |
| Tennessee | 1 | | |
| Texas | 5 | | |
| Utah | 1 | | |
| Total | 484 | 41 | 71 |
| Total (20 States) | | | 596 |

Attendants other than University stud'ts

## COMPARATIVE VIEWS.—ATTENDANCE.

| | 1874-5 | 1875-6 | 1876-7 | 1877-8 | | 1878-9 | | 1879-80 | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | University. | Normal Inst. | University. | Normal Inst. | University. | Normal Inst. |
| At Columbia. | | | | | | | | | |
| Males | 342 | 279 | 350 | 355 | 54 | 371 | 43 | 405 | 41 |
| Females | 54 | 42 | 49 | 63 | 38 | 72 | 36 | 79 | |
| | 366 | 321 | 399 | | | | | | |
| At Rolla. | | | | | | | | | |
| Males | 73 | 54 | 48 | 25 | | 42 | | 49 | |
| Females | 28 | 16 | 16 | 18 | | 29 | | 22 | |
| | 101 | 70 | 64 | 418 43 92* | | 443 71 79‖ | | 484 71 41 | |
| Totals | 497† | 391 | 463 | 553‡ | | 593§ | | 596 | |

* 18 were afterwards students of the University.
† Subtract 6 that were counted twice.
‡ Subtract 18 as counted twice, and add 3 to the School of Art, whose names have not been given, making a clear total of 538, who have been taught by the University Faculty within the year.
‖ 16 were afterwards students of the University, and are hence counted twice in the total.
§ Subtract 16 as counted twice, making a clear total of 577, who have been taught by the University Faculty within the year.

## STUDENTS AND GRADUATES.

**Academic Students and Graduates of the University from 1843 to 1880 inclusive. Also the Students and Graduates of the Medical Department of the University from 1843 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 | ..... | ..... | ..... |
| 1855 | 129 | 16 | ..... | ..... | ..... |
| 1856 | 112 | 13 | ..... | ..... | ..... |
| 1857 | 171 | 12 | ..... | ..... | ..... |
| 1858 | 188 | 9 | ..... | ..... | ..... |
| 1859 | 196 | 9 | ..... | ..... | ..... |
| *1860 | ..... | 9 | ..... | ..... | ..... |
| 1861 | 168 | 7 | 2 | ..... | ..... |
| 1862 | 64 | 5 | ..... | ..... | ..... |
| 1863 | ..... | 1 | ..... | ..... | ..... |
| 1864 | No. of students from 1863 to 1865, 121. | 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 | ..... | ..... | ..... | 71 |

NOTE.—The following have been the number of graduates with 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 1869 graduates, A. B., 69; S. B., 83; from 1872 to 1879 graduates, Ph. B., 17; L. B., 4; N. S., 1.

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

## 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 yr's | 6 years | | 2 years | | 2 years | | 6 y'rs | 2 y'rs | 2 y'rs | 6 years | | 3 years | | |
| | N. G. | D. B. | Pe. B. | N. D. | Pe. P. | D Ag. | D. H. | Ag. B. | LL. B. | M. D. | C. E. | T. E. | C. E. | M. E. | |
| 1869.... | 4 | ..... | ..... | ..... | ..... | In 1860 the Faculty granted 15 Diplomas in Agriculture | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 4 |
| 1870.... | 3 | ..... | ..... | ..... | ..... | | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 3 |
| 1871.... | 4 | ..... | ..... | ..... | ..... | | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 4 |
| 1872.... | 6 | ..... | ..... | ..... | ..... | | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 6 |
| 1873.... | ..... | 4 | ..... | ..... | ..... | | ..... | 5 | 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 | 2 | 53 |
| 1879.... | ..... | ..... | 9 | ..... | 9 | | 5 | ..... | 13 | 6 | 4 | 4 | 1 | 1 | 52 |
| 1880.... | ..... | ..... | * | ..... | * | | ..... | ..... | 14 | * | 2 | 3 | ..... | 2 | * |
| | 17 | 14 | 14 | 32 | 30 | 15 | 47 | 5 | 98 | 43 | 8 | 7 | 9 | 12 | ..... |

*See programme of the commencement exercises.

# Closing Exercises.

## 1880.

FRIDAY EVENING, March 26.—Commencement of Law School. Annual Address, before the Law Class, by William G. Hammond, LL. D., Chancellor of the Law Department of the University of Iowa.

SATURDAY, May 15.—Examination of all Students on Fundamental Branches.

TUESDAY, May 25, to Wednesday, June 2.—Public Examinations of all classes.

THURSDAY EVENING, May 27.—Commencement of Normal School. Address by George L. Osborne, President of Warrensburg Normal School; also Valedictory of the class by Miss Kate Hayes.

SATURDAY EVENING, May 29.—Commencement of Engineering School. Address by Lieut. S. S. Leach, of the U. S. A. Engineer Corps; also Valedictory of the class by Evan D. Green.

SUNDAY, May 30, at 3 P. M.—Baccalaureate Discourse by Dr. S. H. Sonneschein, of St. Louis.

MONDAY EVENING, May 31.—Commencement of Medical School. Address by J. F. Hanna, M. D., of Ashley, Mo.; also Valedictory of the class by Geo. E. Muns, of Montgomery City, Mo.

TUESDAY EVENING, June 1.—Annual Address before the Literary Societies by Gardiner Lathrop, A. M., LL. B., of Kansas City, Mo.

WEDNESDAY, June 2, immediately after Chapel Exercises.—An Address by Hon. Jas. S. Rollins, LL.D., on "The Life and Character of John H. Lathrop, LL.D.," first President of the University of Missouri. By request of the Alumni Association at their regular meeting, 1879.

WEDNESDAY EVENING, June 2.—Oration before the Alumni Association, by William H. Lackland, A. M., Esq., (Class '54), of St. Louis.

THURSDAY, June 3.—University commencement.

# The Schools of the University.

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.

## I. SCHOOL OF PHYSICS.

PROF. NORWOOD—PROF. SCOTT HAYES, ASSISTANT.

### REPORT.

UNIVERSITY OF THE STATE OF MISSOURI.

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

DEAR SIR:—The following report, in relation to the work done in the Department of Physics during the session of 1879-80, is respectfully submitted.

Instruction in Physics is given to the Sophomore Class, together with such other students as are permitted to take a select course, and desire to study this branch of science. The course requires two semeters for its presentation.

The course embraces the elements of Modern Physics, and its methods of investigation. The theory, properties and laws of matter are discussed in connection with the doctrines of motion and force, with experimental illustrations. After this, the study of Molecular Physics occupies the remainder of the year. The subjects particularly attended to, are Wave-motion, Heat, Light, Statical and Dynamical Electricity, Thermo-electricity, Magnetism, Electro-magnetism and Pneumatics. In connection with the study of these branches, the student is taught the use of the Microscope, Spectroscope, and other apparatus of the best modern construction.

## SOPHOMORE CLASS.

The number admitted to this Class during the year was seventy (70), of whom six (6) were young women. In addition to this, thirteen (13) members of the Medical Class were enrolled. *

## ELEMENTARY CLASS IN PHYSICS.

The elements of Natural Philosophy are also taught to the Normal Class, and such elective students as have time to devote to the subject. This course consists of lectures and recitations, five hours a week, and continues half a session.

Both courses are illustrated by experimental demonstrations.

The admissions to this Class numbered thirty-two (32), twelve of whom were young women.

Other classes taught by the Professor of Physics—1879-1880:

## ANATOMY AND PHYSIOLOGY.

During the first semester instruction was given to a class of twelve young ladies in human anatomy and physiology. As the class occupied only two hours a week with these subjects, the course was not completed at the end of the semester. It is respectfully suggested that hereafter one hour a day be devoted to these subjects during one semester.

## MEDICAL JURISRPUDENCE.

Lectures on this subject were given three times a week to the students of the Law and Medical Classes. The course closed at the end of the session of the Law school. The average attendance was from forty-five to fifty.

## APPARATUS.

Among the means for experimental illustration of the subjects taught, may be mentioned the following:

Induction coil—one of the largest made. Holtz' machine—Ritchie's patent. Air pump—Ritchie's patent. Magnesium Stereopticon—for projecting figures on a screen. Several hundred exquisitely painted figures for illustrating Physics, Anatomy, Physiology, Mineralogy, etc., to be used with the Stereopticon. Browning's large model Spectroscope, made on the plan of the Gassiot instrument. Spectrum apparatus for the Microscope, by Messrs. Browning and Sorby. Browning's large automatic electric lamp and regulator.

Browning's new spark condenser. A complete set of apparatus for illustrating wave-motion.

* Medical students, in this University, are required to study Physics as a prerequisite to graduation.

A large number of anatomical models of natural size, exhibiting every part of the human body, accurate in form and color, for illustrating Anatomy and Physiology.

In addition to the above might be mentioned, more than fifty new pieces of apparatus for illustrating heat, light and electricity.

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Prof. Scott Hayes rendered me all necessary assistance in Physics.

Prof. Lowry gave a special course of lectures on the steam engine, for the benefit of those more particularly, who desire to compete for the "Dachsel Prize."

I must again call your attention to the fact that a number of pieces of apparatus are necessary to the proper furnishing of this Department, "and without which some of its most important work can never be accomplished in an efficient manner."

Yours, respectfully and truly,

J. G. NORWOOD.

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## 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 ratoinal 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, selection 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 in addition 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. 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 plant 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 the 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.

## 4. 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.

## 5. 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 requirements, and the requirements of other students in quantitative analysis, as follows:

## 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, $H_2O$).
2. Magnesium Sulphate, ($MgO, SO_3, H_2O$).
3. Ammonia-iron-alum, ($Fe_2O_3$, $NH_3$, $SO_3$, $H_2O$).
4. Potassium Chloride (K, Cl).
5. Silver coin, (Au, Ag, Pb, Cu).
6. Dolomite, ($CaO, MgO, CO_2, SiO_2 Fe_2O_3$).
7. Specific gravity of a solid, a liquid and a gas.
8. Water (CaO, MgO, $SO_3$, Cl, Organic matter).
9. Building stones, analysis and physical tests.
10. Mortars, analysis and physical tests.
11. Sodium Phosphate ($Na_2O, P_2O_5, H_2O$).

* To be built during the coming summer.

12. Coal, (Volatile matter, fixed Carbon, Ash, $H_2O$, S).
13. Feldspar ($SiO_2$, $Al_2O_3$, $K_2O$, $Na_2O$).
14. Guano ($P_2O_5$, CaO, MgO, $NH_3$).
15. Superphosphate of Lime ($P_2O_5$, 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 percentage for its use, and after deducting the value of such articles as he may have broken or injured.

2. Each student must make an additional deposit of $10, 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 $3.00 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 neccessarily personal and not by classes, and not to interfere with the other duties of the Professor, 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 handbooks 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.

59 Students in Phenomenal Chemistry.
36 Students in Rational Chemistry.
3 Students in Agricultural Chemistry.
22 Students in Toxicology.
14 Students in Teachers Class. (This year only.)
29 Students in Laboratory, of whom (*a*) 25 in Qualitative Analysis;
(*b*) 7 in Quantitative Analysis.

163 Students.

Number of individual students admitted to the school, 100.

# III. SCHOOL OF NATURAL HISTORY.

PROFESSOR SWALLOW.

This Department is connected with the Agricultural College, and includes *Geography*, *Botany*, *Zoölogy*, *Mineralogy*, *Geology*, and *Physical Geography*.

## BOTANY

Is taught by a combination of Recitations and Lectures, illustrated by living plants, and by drawings and paintings, showing the structure and characteristics of various species and orders.

Special attention is given to the numerous practical applications of the science in agriculture, mechanics and engineering.

## ZOOLOGY.

This branch of natural history is so taught as to include any elementary course in comparative anatomy, with special reference to the domestic animals.

## MINERALOGY AND GEOLOGY.

Our means for teaching mineralogy and geology enable us to illustrate, with excellent specimens and sections, all the important principles of these sciences. Special care is taken to show their numerous useful applications in agriculture, mining, engineering and other practical pursuits of life.

## PHYSICAL GEOGRAPHY

Is placed at the end of the collegiate course, that all the sciences may give their aid in rendering the scientific terms and problems used, so difficult and repulsive to the uninitiated, an illuminated history of nature.

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# ENTOMOLOGY AND ECONOMIC BOTANY.

PROFESSOR TRACY.

## 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.

## ECONOMIC BOTANY.

In the study of Economic Botany the student is made familiar with the history, cultivation and products of useful plants. An outline of the processes of manufacture of vegetable products used for food, drink, clothing, dyes, medicines, gums, resins, oils, spices, etc., is given. The University green-house contains specimens of many important foreign plants, and affords an invaluable means of illustration.

The class room work has been as follows:

| | |
|---|---|
| Students in Entomology | 48 |
| Students in Economic Botany | 51 |
| Students in Geography | 93 |

Respectfully submitted,

S. M. TRACY,

Prof. of Entomology and Economic Botany, and Supt. of Gardens.

To S. S. LAWS, LL. D., President Missouri State University.

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# 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.)

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## THE NEW OBSERVATORY.

PERSONNEL:

*Director*, JOSEPH FICKLIN.

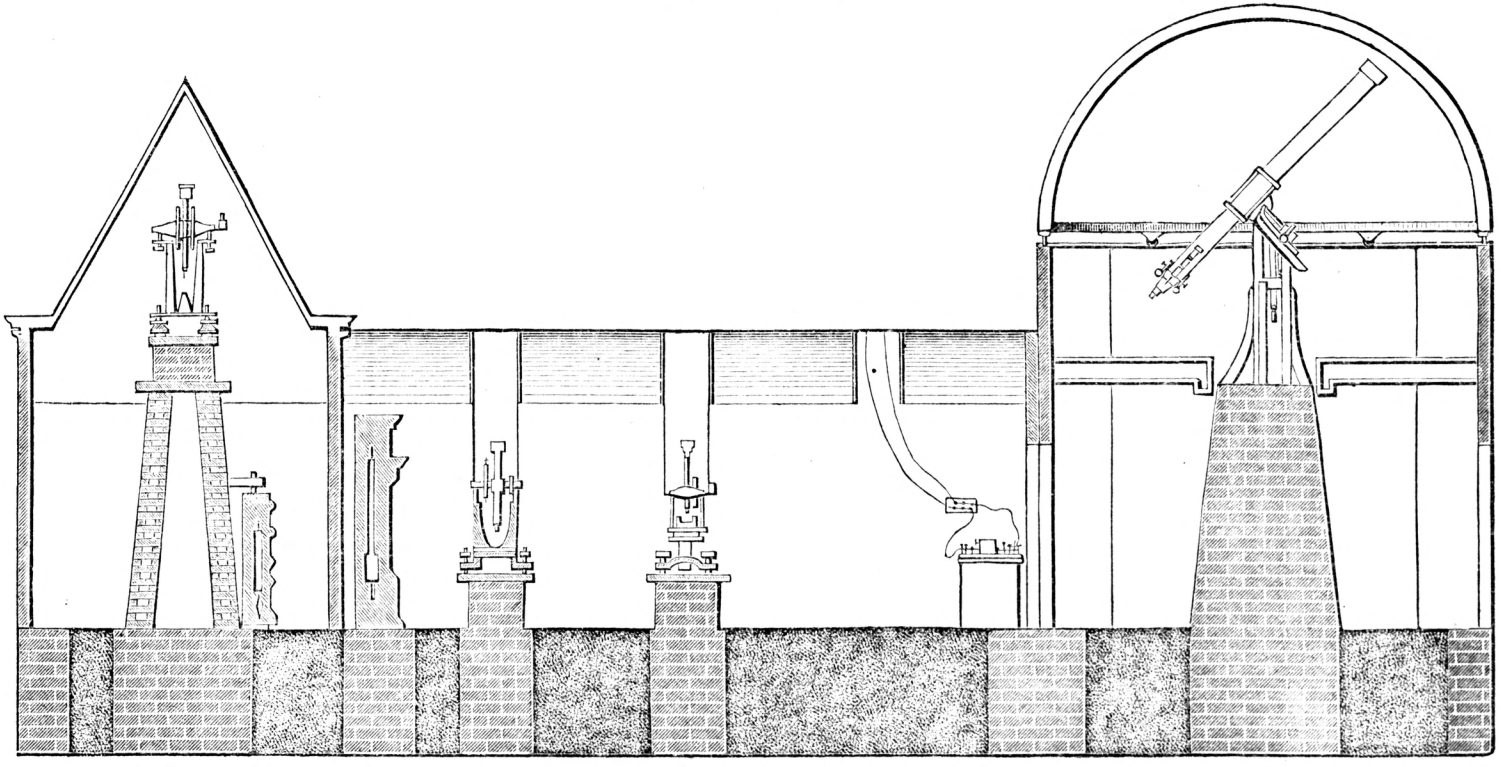
*Assistants*, THOMAS J. LOWRY AND WM. A. CAUTHORN.

GEOGRAPHICAL POSITION:

Longitude from Washington, 1 h. 1 m. 6 s. west.
Latitude, 38° 56′ north.

DESCRIPTION OF THE BUILDING.

During February and March of the present year 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.


7
6
5
4
3
2
1
C
B
A

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 $10\frac{1}{3}$ feet high, and the top of the dome is $14\frac{2}{3}$ feet above the second floor.

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

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

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

The Alt-azimuth room (*C*) is $13\frac{1}{2}$ feet long from east to west, $13\frac{1}{3}$ 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.

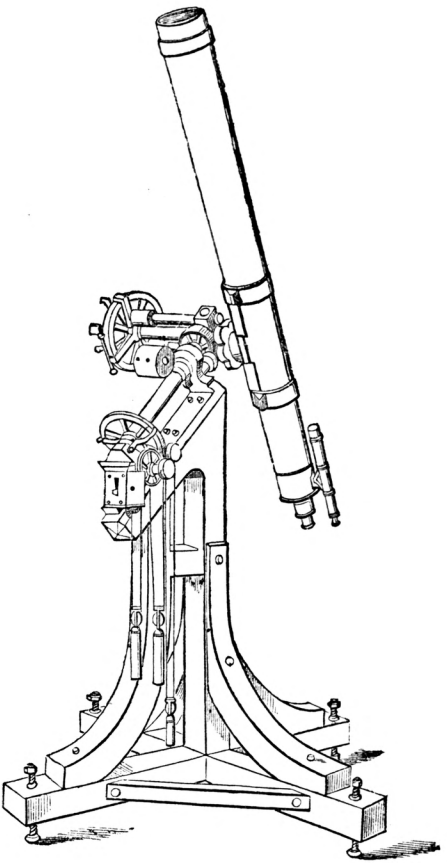
The Transit room (*B*) is situated between the Equatorial room and the Alt-azimuth room. It is $28\frac{1}{2}$ feet long from east to west, $13\frac{1}{3}$ feet wide, and 8 feet high. This room contains three piers, constructed as those already described, for the support of the Transit Instrument, the 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 *Mercurial 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's Practical Astronomy, a work that has been used as a standard for a long time in this Observatory. Comparing the cut with the Equatorial here, one would infer that it must have been intended to represent our instument.

*The Telescope* (1) is an equatorial refractor of 7½ 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 instrumert 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, varying in power from 100 to 570, and six negative eye-pieces, with powers from 102 to about 600. The instrument is also furnished with a reflecting prism 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 20th, and mounted March 13, 1880.

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

*The Alt-Azimuth Instrument* (7) was made by E. & G. W. Blunt, of New York. The object glass has a clear aperture of $2\frac{1}{8}$ 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 collimating 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 dosition.

*The Transit Theodolite* (3) was made by Gregg & Rupp of New York. The object glass has an aperture of $1\frac{3}{4}$ 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.

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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 3, 1880:

The total number of students enrolled in this Department during the year is 411.

## CLASS WORK.

| | |
|---|---|
| Number of students in Higher Algebra | 35 |
| Number of students in Plane Geometry | 92 |
| Number of students in Solid Geometry | 57 |
| Number of students in Preparatory Algebra | 138 |
| Number of students in Plane Trigonometry | 95 |
| Number of students in Spherical Trigonometry | 71 |
| Number of students in Spherical Astronomy | 74 |
| Number of students in Analytical Geometry | 39 |
| Number of students in Calculus | 12 |
| Number of students in Spherical and Physical Astronomy | 5 |
| Number of students in Arithmetic | 139 |

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.

### WORK IN PRACTICAL ASTRONOMY.

During the present session, students in Astronomy have had the usual drill in the use of the instruments of the Observatory.

Since my last report the Observatory has been moved and enlarged, in order to accommodate the splendid instrument, known to Astronomers all over the world as the "Shelby College Telescope." This instrument was received in Columbia January 20th, and was mounted March 13th, 1880. Since the removal of the Observatory, much of my time has been occupied in re-adjusting the instruments. For a complete description of the new Telescope and the new Observatory, I refer to the article headed "The New Observatory."

### THE NEW ARRANGEMENT OF STUDIES.

This session the new arrangement of studies in this Department, by which Plane Trigonometry follows immediately after Plane Geometry, Spherical Trigonometry after Geometry of Space, Spherical Astronomy after Spherical Trigonometry, and Analytical Geometry after Higher Algebra, has been subjected to a practical test with the most encouraging results.

Very respectfully and truly yours,
JOSEPH FICKLIN.

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## 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.

# 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, Browulf, 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.

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## REPORT.

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

SIR:—The statistical report of the classes of the English Department during the year 1879-80, is as follows:

| Classes. | 1st Semester. | 2d Semester. | Total. |
|---|---|---|---|
| English Grammar | 72 | | 72 |
| English Analysis, (Mrs. Carr) | 55 | | 55 |
| United States History | 105 | | 105 |
| English History | 59 | | 59 |
| English and American Literature | 43 | | 43 |
| Political Economy | | 44 | 44 |
| Political Science | | 93 | 93 |
| Analysis and Rhetoric | | 94 | 94 |
| Rhetoric, (Mrs. Carr) | | 90 | 90 |
| Vocal Music | | 97 | 97 |
| Totals | 334 | 418 | 752 |

This table fairly represents the work of the English Department, excepting one division of the Grammar class taken by another.

The system of entrance examinations, inaugurated in the English Department at the beginning of the last year, 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.

I have lately had occasion to examine the catalogues and reports of twenty-two leading institutions in the East and West, and in sixteen of the number there are broad intimations given of the lack of this English scholarship. It is believed, therefore, 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. The amount of extra labor entailed is very great, over six hundred individual examinations in English having been held during the past year, not including those of the regular classes.

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 of not less than five hundred dollars could be made with profit for the purpose of providing these books and appliances.

Respectfully,

D. R. McANALLY, Jr.,

Prof. English Literature.

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## 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, Undine, 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 Roman d'un Jeune Homme Pauvre, Le Misanthrope de Moliere, Conversations, Lectures, Grammar and Composition.

Instruction in Spanish and Italian, and other modern languages, may be had (optionally) from the Professor of this Department.

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## REPORT.

President S. S. Laws, LL. D.:

Dear Sir:—I have the honor to submit to you the following report of the work done in the Department of Modern Languages for the years 1879-80:

| | |
|---|---|
| No. entered (without duplication) in German | 98 |
| No. entered in French | 68 |
| No. entered in Spanish | 13 |
| Total in Department throughout year | 179 |

It will be seen from these figures that the German has increased about fifty per cent. and the French about one hundred per cent. in numbers above last year, while a class in Spanish, for the first time for years, has been formed. The work throughout has been satisfactorily performed by the students. Almost daily conversations were had in German and French with these classes with gratifying results. Another interesting feature in the advanced German class was the weekly readings and interpretations of Goethe's Faust, which were kindly furnished to the class by Prof. Diehl, our accomplished Professor of Art.

In conclusion, let me say that I believe that every one of our advanced class can read any German book, on ordinary subjects, without assistance.

Respectfully,

Your ob't servant,

J. S. BLACKWELL,

Professor in Charge Modern Languages.

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## 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 Quintilian (Histories of Tacitus), Exercises (oral and written), Review of the whole Grammar, Comparative Philology and 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 Madrig, 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 class-room. The advanced classes are also taught to use the so-called Roman and so-called Continental methods.

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## REPORT.

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

DEAR SIR.—I beg leave to submit the following report of the Latin Department for the year closing June 3, 1880.

### ADMISSIONS BY SEMESTERS.

| Semesters. | First Semester. | Second Semester. |
|---|---|---|
| Juniors | 10 | 10 |
| Sophomores | 23 | 23 |
| Freshmen | 29 | 33 |
| Sub-Freshmen | 53 | 57 |
| First Class | 100 | 85 |
| | 215 | 208 |
| | | 215 |
| Whole number by Semesters | | 423 |
| Whole number without duplication | | 232 |

### PRIZES.

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

1. Num Senatus, Cicerone postulante, recte de conjuratoribus interficiendis judicaverit. (Essay in Latin.)

2. 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.*"

3. A Latin Ode in any one of the Horatian Measures.

Very respectfully submitted,

M. M. FISHER.

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## 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: Kühner's Elementary Grammar, 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, and Two Books of the Memorabilia, or its equivalent.

### FRESHMAN CLASS—THIRD YEAR.

*First Semester.*—Lysias, Prose Composition, Grammar, History.

*Second Semester.*—Herodotus, Prose Composition, Grammar, History.

### SOPHOMORE CLASS—FOURTH YEAR.

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

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

JUNIOR CLASS—FIFTH YEAR.

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

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

TEXT-BOOKS.

Kühner's Elementary, and Hadley's Grammar.
Goodwin's Moods and Tenses.
Tozer's Classical Geography.
Fyffe's History of Greece.
Mahaffy's Old Greek Life.
Jebb's Greek Literature.
Peile's Comparative Philology.
Long's Classical Atlas.
Yonge's English-Greek Lexicon.
Liddell and Scott's Greek-English Lexicon.

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## REPORT.

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 1879–80:

| | |
|---|---|
| Junior Class | 14 |
| Sophomore Class | 19 |
| Freshman Class | 12 |
| Sub-Freshman Class | 24 |
| Preparatory Class | 36 |
| Total by Classes | 105 |
| Increase over number reported 1878–9 | 25 |
| Rate of increase of total number of students in University for year 1879–80 over that of 1878–9 | 10 per cent. |
| Rate of increase of students in Greek Department for same period | 31 per cent. |

Very respectfully,

Your obedient servant,

A. F. FLEET,

Prof. Greek and Comparative Philology.

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# 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 Deutsch'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 Grammatik 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.

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## REPORT.

President S. S. Laws, LL. D. :

Dear Sir :—I respectfully submit the following report in regard to the Department of Hebrew and Semitic literature for the year 1879-80 :

The number of students entering this Department for the year is seventeen, an increase of fourteen over the last year's number of those who studied Hebrew. If the catalogue had provided for a new class in the second semester, this number would have been materially increased. All the Department students successfully passed the examinations.

Respectfully,
Your ob't servant,
J. S. BLACKWELL,
Professor Hebrew and Semitic Literature.

# Ladies' Department.

## REPORT.

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

The Board of Curators of the Missouri State University recognizing the justness and the importance of the higher education of woman, opened to her in 1872, by act of the Legislature, the doors of the Missouri State University, thus placing her on an equality with her brothers; but for five years previously she had been admitted to the Normal Department. As the number of young women attending the University has multiplied year after year, until the number during the present year has been seventy-nine, there has been a growing need for special provisions for them. This increasing want suggested a Ladies' Department, over which, last September, I was called to preside as Lady Principal, also sharing in the class room labor of the Faculty.

In submitting to you my report, I rejoice to say that this provision for their good has been duly appreciated by the young ladies, and that to their hearty coöperation 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.

The regulations adopted are addressed to the *honor* and personal responsibility of the pupil, and to this principle of government the young ladies have heartily responded.

### THE COLLEGE HOME.

Recognizing that the formative power of home and social life is indispensable to the normal development of woman's intellect and heart, a Home will be provided for a limited number of young ladies from a distance, wherein they will be treated as daughters of a common family. The establishment of this Home was recently authorized by the Board of Curators, and parents will duly appreciate this wise provision for their daughters.

The Home will not be merely an eating place and a sleeping place for girls, but we will strive to throw about it those refining and hallowed influences without which there can be no true womanly growth. Its parlors will be thrown open to the young ladies as members of the family, and all the privileges of a well regulated home will be theirs to enjoy.

We regret that the limited capacity of the building, at present available, will accommodate only twenty-two; but we look forward hopefully to the time when the State will provide for us a beautiful and commodious building wherein all the young ladies from a distance may find a home. Such a building is to-day the special want of the University, and justice and honor, and every generous sentiment, demand that it be fully and promptly met.

Any information concerning the admission of pupils into the Home can be obtained by communicating with the Principal of the Ladies' Department, or with the Matron of the College Home.

### Uniform.

It is desirable, for many reasons, that the dress of the young ladies be simple and inexpensive. Simplicity in dress, right in itself, is peculiarly becoming in a student, for it saves money, time 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 following uniform: For winter, a walking suit of black alpaca or cashmere; for summer, a white muslin sack will be substituted for the black waist or basque. The style of hat will be recommended at the opening of the next semester; 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 greatly diminished. Each young lady must be provided with a water-proof cloak, with an umbrella and rubber overshoes.

### Calisthenics.

Believing that the physical degeneracy of the American woman is largely attributable to her inactivity, I deem it necessary to require all the young ladies to engage in calisthenic exercises, unless some reason justifying exemption therefrom be presented.

During the past year thirty young ladies have engaged in these exhilarating exercises; and, under the delightful stimulus of music, nerve and muscle have been strengthened, and the brain rested and energized for its work.

### Literary Periodical.

The young ladies have, for two years, published a quarterly periodical, entitled "The Missouri University Magazine." The lady students contribute to its pages, and, during the past year, it has been very creditably edited. As a record of University affairs, it is, no doubt, a source of pleasure to the Alumni and Alumnæ subscribers; and as a literary, scientific and educational journal, its merit will compare favorably with that of any other college magazine of the West. As a means of improvement in composition, the magazine is invaluable to its editors and contributors.

### Literary Societies.

During the past year the young women had two literary societies—the Jean Ingelow and the Anna Laws—each of which met weekly. In these societies was represented almost every class in the University, and in them were afforded opportunities for culture in composition and elocution.

There being only one available hall adapted to society purposes, and for other reasons looking to the highest and best interests of the young women, it was deemed advisable, in the judgment of the Faculty, to recommend a consolidation of the two literary organizations. This recommendation was made and adopted during the second semester of the past year, and next year the young lady students of the University will have but one literary society.

### 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 past year two classes—Analysis and Rhetoric—from Prof. McAnally's Department, have been under my instruction. The class in Analysis numbered fifty-five, and the class in Rhetoric, ninety.

I desire here to mention the uniform, polite attention of these 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.

### Ladies' Course.

During the second semester of the past year a committee was appointed by the Faculty to arrange a new course of study for the lady students of the University. This course is agreed on and is equivalent to any one of the other Academic courses, yet is identical with none. In this way it is intended to escape the fallacy of confounding co-education with identical education. It 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, physically, as well as intellectually, to meet the highest demands of any well regulated university, it is deemed advisable that the Ladies' course be coördinate in rank with the other Academic courses, and take its place by them in the Synchronistic Table. Diplomas will be conferred on those pupils who complete successfully the studies prescribed in the course, and its graduates will have all the privileges and immunities extended to the graduates in the other Academic courses.

The Ladies' course will be optional; but, if its history be that of similar courses in other institutions, it will be more popular with the young women than any other of the Academic courses.

The special work for girls in our University is in the weakness of its infancy; yet it promises, with proper aid and watchful care from its foster mother, the State, to develop into no mean proportions, and to be strong to help the daughters of our western land up to a nobler purpose, where they shall breathe the freshness of a new life, and be energized to accomplish aright their God-appointed mission. If our Legislature grants us an appropriation for the erection and outfit of buildings adapted to the complete requirements of gymnasium, literary societies, music conservatory and college home, then the Ladies' Department, with the Ladies' course for its basis, must be a success. Without this aid, its usefulness must be seriously impaired, and its legitimate aim only partially accomplished.

Respectfully submitted,

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.
XIV.—6. Engineering School.
XVII.—7. School of Military Science and Tactics.
XVIII.—8. School of Art.

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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—XVIII) 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 scholas-

tic 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 defense. This, however, is not the place for discussion, but only for statement and announcement.

# XII. AGRICULTURAL AND MECHANICAL COLLEGE.

## FACULTY.

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

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

JOSEPH G. NORWOOD, LL. D.,
*Professor of Physics.*

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

CONRAD DIEHL,
*Professor of Art.*

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

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

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

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

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

ROBERT B. MADDEX,
*Farm Superintendent.*

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

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 following revised course of study has been adopted by the faculty of the Agricultural College:

*First Semester.*—Arithmetic, United States History, English Grammar and Language Lessons, Reading, Penmanship and Orthography.

*Second Semester.*—Arithmetic and Book-keeping, Analysis and Rhetoric, Botany and Drawing.

*Third Semester.*—Algebra, Political and Physical Geography; Horticulture, Pruning and Training; Soils—Formation and Ingredients, Classification, Tillage and Fertilizers; English and American Literature.

*Fourth Semester.*—Horticulture, Gardens and Gardening, Floriculture and Transplanting, Political Economy, Elocution and Themes, Landscape Gardening, Ornamental Trees and Shrubs.

*Fifth Semester.*—Horticulture, Pomology and Forestry, Ornamental Trees and Shrubs, Physics, Chemistry and Laboratory work, Ethics, Drawing.

*Sixth Semester.*—Physics, Geometry, Laboratory work in Qualitative Analyses, Horticulture, Entomology and Economic Botany.

*Seventh Semester.*—Trigonometry and Surveying, Human Anatomy and Physiology, and Zoölogy, Mineralogy and Palæontology, Agriculture, Domestic Animals.

*Eighth Semester.*—Chemistry and Laboratory work in Quantitative Analyses, Agriculture, Farm Architecture, Farm Machinery, Mechanics.

*Ninth Semester.*—Agricultural Chemistry, Psychology and Logic, English History, Agriculture, Veterinary Science, Farm Crops.

*Tenth Semester.*—Spherical Trigonometry and Astromony, Geology and Physical Geography, Civil Government, Agriculture, Roads and Fences, Water Supplies.

This course of study, comprising ten semesters, shows three distinct parts, either of which may be studied by itself, provided the pupil has necessary qualifications to take its studies.

I. *A Preparatory Course*, included in the first and second semesters.

II. *A Course in Horticulture*, included in the third, fourth, fifth and sixth semesters. Those completing this course, will be entitled to a certificate from the Faculty of the College.

III. *A Course in Agriculture*, which includes the course in horticulture, together with the seventh, eighth, ninth and tenth semesters. Those completing this course, will be entitled to the degree of B. Ag.

By a special regulation, any student of the University can enter any of the classes of the Agricultural College for the study of any particular subject, as entomology or landscape gardening, and be excused when that subject is finished. He may receive a testimonial of his standing in such special study from the Dean of the College.

## PROFESSIONAL STUDIES OF THE AGRICULTURAL COLLEGE.

| YEAR. | STUDIES. | HOUR. | TEACHER. |
|---|---|---|---|
| HORTICULTURE. FIRST YEAR. First Semester. | Propagation, Pruning and Training, Soils and Tillage and Tools | V. | Swallow. |
| | Fruits and Nursery Business* | V. | Husmann. |
| Second Semester. | Gardens and Gardening | V. | Tracy. |
| | Ornamental Trees and Shrubs | V. | Husmann. |
| | Landscape Gardening, (12 Lectures) | V. | Swallow. |
| SECOND YEAR. First Semester. | Meteorology, (10 Lectures) | IV. | Swallow. |
| | Pomology and Forestry | IV. | Husmann. |
| Second Semester. | Entomology and Economic Botany | IV. | Tracy. |
| AGRICULTURE. THIRD YEAR. First Semester. | Farm Drainage, (10 Lectures) | ..... | Swallow. |
| | Farm Crops | ..... | Tracy. |
| Second Semester. | Domestic Animals | ..... | Swallow. |
| FOURTH YEAR. First Semester. | Agricultural Chemistry | ..... | Schweitzer. |
| | Veterinary Science | ..... | |
| Second Semester. | Farm Buildings, Fences, Roads, Water Supplies and Farm Machinery | ..... | Swallow. |

*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.

### PRIZES.

There are two permanent prizes connected with the Agricultural College:

The *Harris Medal*, to the Senior Class, "For the *Best Essay on Dairy Stock*," or "*Indian Corn.*"

The *Swallow Prize*, *Lowdon's Encyclopædia of Agriculture*, to the Freshman Class, "For the *Best Examination or Essay on Pruning.*"

### DEGREES GIVEN IN THE AGRICULTURAL COLLEGE.

Students who have finished the *four years' course*, shall be entitled to the degree and diploma of Bachelor of Agriculture (B. Ag.)

Those who complete the *course in Horticulture* shall be entitled to a *Certificate.*

## DESIGN OF THIS INDUSTRIAL COLLEGE.

It is the design of this school to give an education that will fit the pupil for intellectual and manual labor—to make him a man in body and mind, that he may enjoy the *mens sana in corpore sano.* Our graduates must be the peers of scholars in mental culture, and the equals of laborers in manual skill and physical development, that they may be prepared to honor labor and to utilize and dignify learning.

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

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.

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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.

### Horticultural Department.

As the ladies of Missouri have done so much to create a taste for the culture of fruits and flowers and ornamental grounds, it is but just that the Commonwealth should provide a school where their daughters, as well as sons, may perfect themselves in these delightful pursuits. All necessary fixtures will be provided to make this Deparment of the Industrial College most useful and instructive.

The ladies are, therefore, invited to partake of the benefits of this Horticultural course, where everything will be so managed as to awaken and cultivate the most refined and exalted tastes, and lead woman back to the pursuits she so much enjoyed in Eden.

The first class in this Department was formed during the year 1874. It consisted of nineteen young ladies and five young gentlemen, besides a large number of agricultural students. Twenty-four completed the course and received diplomas.

### Agricultural Lectures.

Lectures are given each day on the practical applications of science to agricultural pursuits.

The students of this college are, by law, admitted to the lectures and other exercises of all the Departments of the University.

## CLASSES TAUGHT BY THE PROFESSORS OF AGRICULTURE IN 1879-80.

### First Semester.

| | |
|---|---|
| Mineralogy and Palæontology, (Prof. Swallow) | 23 |
| Zoölogy, (Prof. Swallow) | 88 |
| Freshman Agriculture, (Prof. Swallow) | 38 |
| Geography, (Prof. Tracy) | 93 |
| Fruits and Nursery Business, (Prof. Husmann) | 38 |
| Sophomore Agriculture, (Prof. Swallow) | 3 |

### Second Semester.

| | |
|---|---|
| Botany, (Prof. Swallow) | 92 |
| Geology, (Prof. Swallow) | 23 |
| Freshman Agriculture, (Prof. Swallow) | 42 |
| Entomology, (Prof. Tracy) | 48 |
| Economic Botany, (Prof. Tracy) | 51 |
| Pomology and Forestry, (Prof. Husmann) | |

### Students in Practical Agriculture.

| | |
|---|---|
| Freshman Class | 42 |
| Sophomore Class | 3 |
| Junior Class | 3 |

## 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.

*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.

The comparative results of the experiment in 1877 were published in the catalogue of 1878; of the fifteen varieties tested in 1879, in the catalogue of this year, and the results of the twenty seven varieties in 1879 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.

## DONATIONS.

The College is indebted to Miss Narcissa Bradford for a very valuable collection of minerals, trees and cereals of California.

To the Gale Manufacturing Company of Adrain, Michigan, for their excellent *Gale Chilled* (two-horse, walking) *Plow*.

To Mr. I. A. Hedges for several samples of first rate "Sorgo Sugar" and for sorghum seeds.

To Mr. J. T. Moulton, Jr., of Knob Lick, for fine polished specimens of Missouri granite.

To Mr. ——, for a triplet of very fine Cochin-China chickens.

To the San Francisco Produce Exchange for a gallon of the Cuzco corn, by Hon. W. H. Walker, Secretary.

To Mr. A. Harrison of Utah, for rare specimens of silver ores from Utah.

To Henry Shaw, Esq., of Tower Grove Park, for many valuable seeds and plants.

To Mr. John P. Royal for valuable specimens of California minerals and woods.

To Mr. W. S. Williamson for specimens of wheat.

To Mr. W. T. Russell for specimens of corn.

To U. G. Phetzing for some fine leaf tobacco.

To A. G. Rogers, Esq., of Lathrop, Mo., for the best of all the patent mole traps.

## ARTICHOKES.

Our experiments with artichokes for hogs, has, so far, proved most favorable, and we shall extend the culture of this food, in full belief that artichokes are the cheapest food for swine that we can raise; and their free use will utterly eradicate the so-called hog cholera.

I herewith inclose the reports of Profs. S. M. Tracy and George Husmann, and Superintendent Maddex.

All Departments of this College are in much better condition to do good work than ever before. The Hot-house places the Horticultural Department on a working basis. Prof. Husmann is rapidly occupying the best parts of the farm with fruit trees and nursery stock; and Mr. Maddex can scarcely find room for the stock, his experiments, and the growth of seeds to supply the demand made upon us.

But we need a stable for housing our crops and feeding our stock, and we need our natural history room to display our collections.

We ought to enter upon the manufacture of Sorghum Sugar, that our pupils may become experts, and go out to build up this interest to save at home the millions we annually send abroad for sugar. It is clearly demonstrated that we can make as good sugar as we buy from other countries, and do it for less money.

In conclusion, I cannot refrain from expressing my gratification at the skill, energy and devotion displayed by Professors Tracy and Husmann, and Superintendent Maddex, in the discharge of the various duties assigned them.

All of which is respectfully submitted.

G. C. SWALLOW, Dean.

# REPORT OF HORTICULTURAL AND GARDEN DEPARTMENTS.

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

The following report of the work done in this Department, during the session of 1879-80, is respectfully submitted:

## FIELD WORK.

### WHEAT.

In the report for 1878-79, the results from testing forty-eight varieties of wheat were given. In September, 1878, all of the varieties tested during the previous year, excepting Chidham, were sown together with six additional varieties. The wheat was sown on the same land where it was cultivated last year—a clayey loam, sloping to the south. The field was sub-soiled and planted with corn in 1876; in 1877 a crop of oats was raised, followed by wheat in 1878.

In August, 1878, a portion of the land was manured with 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.

About September 1, 1878, the land was plowed six inches deep. On September 25, it was thoroughly pulverized three inches deep with a revolving harrow, and, on September 28, the seed was sown with a drill, at the rate of $1\frac{1}{3}$ bushels per acre. No after cultivation was given to the crop.

The season was an unusually favorable one. Rain, soon after sowing, gave the seed a good start, and heavy snows, from December to February, prevented the young plants from being thrown out of the ground by the freezing and thawing of winter. The spring of 1879 was very dry, causing a short growth of straw, and rains, about the time of heading out, enabled the heads to develop well, thus making a very much heavier yield of grain to the weight of straw than was reported in 1878. On April 4, a severe frost occurred, the mercury indicating 12 degrees, and a few of the more tender varieties were somewhat injured.

The following table shows some of the results of the tests made this year as compared with those of 1878. In the table no mention is made of such varieties as have given less than fifteen bushels to the acre as the average of two tests.

| Variety. | Date when harvested..... | | Height—feet..... | | Weight per bushel | | Bushels of grain per acre..... | | Weight of straw per acre..... | | Weight of straw per bus. of grain | | Smooth or beard. | Color of grain... | | Size of grain..... | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1878 | 1879 | '78 | '79 | 1878 | 1879 | 1878 | 1879 | 1878 | 1879 | 1878 | 1879 | | 78 | 79 | 78 | 79 |
| Amber | June 21 | June 18 | 3½ | 3¾ | 55 | 62½ | 20.16 | 31.03 | 2576 | 3240 | 122.8 | 104.4 | S | A | R | s | m |
| Arnold's Hybrid | " 19 | " 16 | 4 | 4 | 59 | 61 | 33.23 | 36.56 | 4592 | 3820 | 140.7 | 104.4 | S | W | A | l | l |
| Clawson | " 21 | " 19 | 4½ | 4¼ | 58 | 60 | 28.07 | 39.42 | 2646 | 3832 | 96.4 | 97.2 | S | W | W | l | l |
| Deihl | " 21 | " 22 | 3 | 3½ | 55½ | 61 | 14.42 | 39.60 | 2096 | 3897 | 145.3 | 98.4 | S | W | R | s | m |
| Dott | " 19 | " 16 | 3½ | 4 | 59 | 62 | 31.04 | 36.40 | 3904 | 3778 | 125.8 | 103.8 | B | R | R | l | l |
| Egyptian | ..... | " 20 | ... | 3½ | .... | 60 | ..... | 32.19 | ..... | 3032 | ..... | 94.2 | B | .. | R | .. | m |
| Fultz | " 17 | " 12 | 4 | 3¾ | 59 | 63½ | 15.23 | 35.90 | 1728 | 2776 | 113.5 | 87.0 | S | R | R | m | m |
| Gold Medal | " 24 | " 19 | 4 | 3½ | 57½ | 60½ | 17.39 | 34.68 | 1886 | 3413 | 108.5 | 98.4 | S | W | W | l | m |
| Jenning's White | " 19 | " 16 | 3 | 3½ | 59 | 60½ | 24.96 | 35.90 | 2848 | 3576 | 114.1 | 99.6 | B | W | W | m | l |
| Kentucky | " 11 | " 18 | 4 | 3¾ | 58½ | 61 | 25.76 | 29.04 | 3920 | 2840 | 152.2 | 97.8 | .. | W | A | l | m |
| Louisiana | " 21 | " 18 | 3 | 3¼ | 55 | 58 | 19.49 | 31.18 | 2952 | 2881 | 151.5 | 92 4 | .. | W | W | s | m |
| Mediteranean, Bearded | " 17 | " 18 | 4 | 3¾ | 61 | 60½ | 21.92 | 28.60 | 3194 | 3312 | 145.6 | 115.8 | B | R | R | l | l |
| Mediteranean, Smooth | ..... | " 12 | ... | 4 | .... | 63 | ..... | 29.42 | ..... | 4313 | ..... | 146.6 | S | .. | R | .. | m |
| Michigan Wick | " 21 | " 18 | 3 | 3¾ | 57½ | 61 | 28.32 | 34.71 | 3245 | 3665 | 114.6 | 105.6 | B | W | W | l | l |
| Mold's Red | ..... | " 24 | ... | 3 | .... | 56 | ..... | 12.58 | .... | 1080 | ..... | 85.8 | S | .. | R | .. | s |
| Mold's White | ..... | " 24 | ... | 3 | .... | 59 | ..... | 23 85 | .... | 2562 | ..... | 107.0 | S | .. | A | .. | s |
| Muskingum | " 19 | " 18 | 3½ | 3¾ | 58½ | 64 | 21.92 | 32.73 | 3088 | 3496 | 140.9 | 106.8 | S | A | R | m | m |
| Nursery | " 25 | " 20 | 3½ | 3 | 52½ | 60½ | 13.30 | 38.62 | 2248 | 3765 | 162.0 | 97.5 | S | W | A | s | s |
| Oregon Club | " 21 | " 18 | 4 | 3 | 56 | 58½ | 28.80 | 31.38 | 3600 | 2768 | 125.0 | 88 2 | S | W | W | s | m |
| Polish | ..... | " 24 | ... | 3¼ | .... | 58½ | ..... | 35.20 | ... | 3326 | ..... | 94.5 | S | .. | A | .. | s |
| Post | " 25 | " 18 | 3½ | 2¾ | 52 | 59 | 19.49 | 34.04 | 2952 | 1236 | 151.5 | 36.3 | B | W | A | l | l |
| Red Lancaster | " 18 | " 18 | 4 | 3¾ | 60 | 60½ | 24.65 | 29.78 | 3552 | 3484 | 144.0 | 117.0 | B | R | R | l | l |
| Red May | " 8 | " 9 | 3½ | 3¼ | 59 | 62 | 27.52 | 32.46 | 3024 | 3350 | 110.5 | 103 2 | S | R | R | s | s |
| Red Russian | " 19 | " 18 | 3 | 3¼ | 60½ | 58½ | 24.00 | 25.70 | 4016 | 3454 | 167.3 | 134.4 | B | R | R | l | l |
| Sanford | " 26 | " 19 | 4 | 3½ | 59½ | 61 | 18.82 | 33.81 | 1952 | 3631 | 103.7 | 107.4 | B | W | W | l | m |
| Shumaker | " 17 | " 16 | 4½ | 3¾ | 60 | 60 | 30.56 | 37.20 | 4628 | 3782 | 151.3 | 99.0 | S | A | R | l | l |
| Silver Chaff | " 25 | " 19 | 4½ | 4 | 59½ | 60½ | 17.82 | 38.47 | 1858 | 3439 | 104.3 | 89.4 | S | W | W | l | l |
| Tappahannock | " 10 | " 16 | 3½ | 3½ | 59½ | 62 | 20.32 | 30.67 | 2064 | 2576 | 100.2 | 84.0 | S | W | W | m | m |
| Touzelle | " 25 | " 24 | 4½ | 3 | 56½ | 56 | 15.68 | 17.90 | 1952 | 1826 | 124.5 | 102.0 | S | .. | A | l | l |
| Treadwell | " 21 | " 20 | 3½ | 3½ | 57½ | 61 | 19.52 | 52.38 | 3227 | 4620 | 165.3 | 88.2 | S | W | W | l | l |
| White Rogers | " 19 | " 18 | 4 | 3½ | 53 | 60 | 38.72 | 38.78 | 4304 | 3420 | 111.2 | 77.2 | B | W | W | l | m |
| Zimmerman | " 15 | " 19 | 3½ | 4 | 60½ | 62 | 16.32 | 32.05 | 2224 | 3692 | 136.3 | 115.2 | S | R | R | s | m |
| Russian, No. 1 | " 29 | " 21 | 3½ | 3½ | 55½ | 61½ | 14.21 | 29.15 | 2608 | 3475 | 183 5 | 119.2 | S | A | W | m | m |
| " No. 2 | " 9 | " 18 | 3½ | 3½ | 60 | 61½ | 23.36 | 27.36 | 2558 | 2462 | 160.5 | 90.0 | S | W | W | l | m |
| " No. 3 | " 29 | " 24 | 3 | 3¼ | 50½ | 57½ | 8.30 | 35.66 | 1872 | 2509 | 212.7 | 98.4 | S | R | R | l | m |
| " No. 4 | " 25 | " 20 | 4½ | 3¾ | 57 | 60 | 26.40 | 25.50 | 2992 | 2922 | 113.3 | 114.6 | S | R | R | l | s |
| " No. 5 | " 29 | " 24 | 3½ | 3 | 48 | 57½ | 21.12 | 29.81 | 4320 | 4900 | 204.6 | 164.4 | S | R | R | s | s |
| " No. 8, | July 3 | " 23 | 4½ | 3¾ | 58 | 59 | 31.52 | 32.22 | 3952 | 3673 | 125.4 | 114.0 | S | W | W | l | m |
| " No. 9 | June 29 | " 21 | 4½ | 3½ | 57½ | 60 | 24.48 | 32.44 | 4912 | 2219 | 200.6 | 68.4 | B | R | R | l | m |
| " No. 10 | " 29 | " 21 | 4½ | 3½ | 57½ | 60 | 17.44 | 32.07 | 4000 | 3464 | 229.4 | 108.0 | B | R | R | m | m |
| " No. 11 | July 3 | " 24 | 3½ | 3¼ | 54½ | 57¼ | 7.38 | 29.91 | 2048 | 3230 | 277.5 | 108.0 | S | R | R | s | s |
| " No. 12 | " 3 | " 21 | 3½ | 3½ | 52 | 56 | 9.41 | 37.48 | 1728 | 3261 | 183 6 | 87.0 | S | R | R | s | s |
| " No. 13 | " 3 | " 21 | 3½ | 3 | 56½ | 55½ | 16.80 | 32.56 | 2944 | 3664 | 174.0 | 111.0 | S | A | A | m | s |
| Average | ..... | ..... | ... | ... | 57⅛ | 60 | 21.93 | 32.59 | 3107 | 3270 | 145.6 | 101.2 | .. | .. | .. | .. | .. |

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 Red Sea; Early Michigan, known as 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, Walker, Wilson, Late May, Lime, Golden Chaff; Clawson, known as Genesee, Seneca; Mediteranean, smooth, known as Sea Island.

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

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

| | | 1878. | 1879 |
|---|---|---|---|
| June 8. | Bushels per acre | 27.52 | ..... |
| 9. | " " | 23.36 | 32.46 |
| 10. | " " | 20.32 | ..... |
| 11. | " " | 25.76 | ..... |
| 12. | " " | ..... | 34.97 |
| 15. | " " | 16.32 | ..... |
| 16. | " " | ..... | 36.36 |
| 17. | " " | 22 57 | ..... |
| 18. | " " | 24.65 | 31.54 |
| 19. | " " | 28.98 | 35.69 |
| 20. | " " | ..... | 37.17 |
| 21. | " " | 22.68 | 31.56 |
| 23. | " " | ..... | 32.22 |
| 24. | " " | 18.06 | 27.80 |
| 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 20th, 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 21st, or later, in 1879. With a selection from the varieties ripening before June 21st, the time of harvest extends over thirteen days, which, in most cases, is sufficient time to enable the cultivator to harvest his crop when it is in just the right stage; and, by a proper selection of seed during a series of years, it will doubtless be possible to extend somewhat the time of harvest.

The weight per bushel of the different varieties varies almost exactly, as does the yield, the lightest varieties being those which ripened latest.

The weight of straw, required for a bushel of grain, is matter which should receive more attention than is usually given to it. Although the straw, which is required to produce a bushel of grain, is not as exhaustive to the soil as is the grain itself, still every pound of straw takes from the soil a certain amount of the materials which are necessary for the production of either grain or straw. If all the straw were returned to the soil for manure, the amount produced would be of comparatively little importance; but this is seldom done, and when, as is too often the case, the straw is burned or is allowed to decay without being distributed over the farm, it is a constant drain, the effects of which will eventually be seen in the constantly decreasing yield of grain or in the increased amount of other fertilizers required to maintain the fertility of the soil. It will be noticed, in the foregoing table, that those varieties giving more than the average yield to the acre have less than the average amount of straw to the bushel.

Although every variety, with one exception, gave a larger yield in 1879 than in 1878, the most marked increase is shown in the Russian kinds, which gave an average yield of 31.29 bushels per acre in 1879 against 18.22 bushels in 1878. They all seem very hardy, and stand up well; but the proportion of straw is greater than in the American varieties. The Oregon varieties have all been discarded, excepting the Ore-

gon Club, which yielded less than the average this year, but more than the average for two years.

In addition to the varieties mentioned in the table, the following were tested in 1878 and 1879, on the same land, and under the same circumstances as the others, but, having yielded only from three to fifteen bushels to the acre, they have been dropped, viz: Grecian White, Hert's White, Lammas, Oregon, Oregon Champion, Trump, Victoria, Russian Nos. 6 and 7.

The following varieties, viz: Early Michigan, Rice, Smith, Amber Straw, Bull and Taos, were also sown, but, as the seed was not received until late, and was sown on a different soil from the trial crop, no comparison can be made before another year.

Several of the varieties which succeeded best in 1878, and a few of the varieties received last fall, were sown on the College farm. With these crops, Mr. Maddex, Farm Superintendent, reports the following results: "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 cultivatation for many years, and have received almost no manure. On one field, where Zimmerman was almost a failure in 1878, Sanford and Smooth Mediteranean were grown, and yielded 15 bushels per acre. Mold's White and Mold's Red gave only 11 bushels, and Polish 15 bushels to the acre." With the means at our disposal, we have been unable to make any tests to show the relative values of the different varieties for the manufacture of flour.

### Oats.

On March 22, 1879, ten varieties of oats were sown. The land on which they were cultivated had been in corn for many years and had never been manured; but, by subsoiling, on each alternate year since the land came into possession of the College, it had borne good and constantly increasing crops.

The land was a clayey loam, slightly sloping to the west, and was plowed and subsoiled about March 10th. On March 22d the oats were sown with a drill at the rate of two bushels to the acre.

The following table shows some of the results of the trial:

| Name. | Date when cut.... | Height—feet..... | Wt. per bushel... | Yield per acre.... | Straw per acre ... | Color of grain..... | Color of grain.... |
|---|---|---|---|---|---|---|---|
| Black Egyptian | July 3... | 2½ | 38 | 38 | 1520 | 40 | B |
| Black Tartarian | July 15... | 3½ | 35 | 54 | 2322 | 43 | B |
| Board of Trade | July 3... | 3 | 30 | 27 | 1755 | 65 | W |
| Finefellow | July 10... | 3½ | 36 | 59 | 3186 | 54 | W |
| Hulless | Jun. 30... | 2½ | 48 | 29 | 1479 | 51 | |
| Probstier | July 10... | 3 | 30 | 52 | 2288 | 44 | W |
| Schonen | July 10... | 3½ | 35 | 50 | 1950 | 39 | W |
| Surprise | July 10... | 3½ | 36 | 30 | 2070 | 69 | W |
| Rust Proof | July 3... | 2½ | 32 | 29 | 1450 | 50 | R |
| Webbs Challenge | July 3... | 3 | 32 | 27 | 1755 | 65 | W |
| Average | ..... | ..... | 35.2 | 40.3 | 2016 | 51.6 | ..... |

Explanation: B., Black; W., White; R., Red.

In addition to those varieties mentioned in the table, twelve others, viz: Birile, Canadian, Houghton, Oregon, Oregon Surprise, Potato, Ramsdell's Norway, Russian, Somerset, Swedish, White Swedish and Yetter, were sown; but in such small quantities as to be of no value as a test, but sufficient to furnish seed for a thorough trial next year.

The trials of both wheat and oats will be continued another year, and the next report will give the results of all the tests. The results of these trials should not be taken as being anything more than an indication of which may be the best varieties, as the success of any farm crop depends upon so many attendant circumstances, the amount of rain at different times, the severity of the weather and many other matters, which it is impossible to provide for, that several trials must be had before reliable calculation can be made.

### Potatoes.

The trial of potatoes, commenced in 1878, was continued in 1879, but, owing to a very unfavorable season, the results were unsatisfactory. In the main, the yields from the two hundred varieties tested, agreed very nearly with those of 1878; but many of the late varieties suffered from the extreme drouth. Beauty of Hebron, Early Vermont, Ruby and Pride of America (B—4 of last report) were among the best. Several of the seedling varieties, originated here, promise well, but need to be more fully tested.

### Miscellaneous.

One-fourth of an acre was sowed with Pearl Millet, which reached a height of from five to six feet, and gave only about one-third the amount of feed which could have been cut from the same amount of land sowed with corn.

A few artichokes were planted on a piece of low ground which was naturally rich and which had been very highly manured, so as to give an extraordinary yield. The crop harvested from this piece of ground was at the rate of 1750 bushels per acre.

Chufas, or Earth Almonds, were planted on a strip of ground adjoining the artichokes, but gave a very small yield—not enough to pay for digging.

## IMPROVEMENTS.

In October, 1879, a green-house was commenced, which was completed in December. The house is 25x100 feet, with span-roof, furnace and potting-room, cellar, etc. It is heated by a Banch hot water apparatus, which, so far, has proved very satisfactory. The collection of plants, now in the house, is quite large, and contains many rare plants which are an invaluable means of illustration for the classes in economic botany and agriculture. The sale of plants and flowers from the green-house has more than paid the current expenses of the house, and will doubtless become a source of profit. The building of the house necessitated some changes in the arrangement of the grounds, which are being made as rapidly as possible.

In order to place the results of our experimental work before the people of the State, exhibits of the various crops raised were made at the Boone county, Kansas City, Moberly and St. Louis fairs.

## DONATIONS TO HORTICULTURAL DEPARTMENT.

J. R. Wagaman, Carrollton, Mo., two varieties wheat; E. Link, Greenville, Tenn., four varieties wheat; Ohio Agricultural College, two varieties wheat; B. J. Bidwell,

Tecumseh, Mich., two varieties wheat; United States Department of Agriculture, through Hon. Wm. G. LeDuc, U. S. Commissioner of Agriculture, a very fine collection of some hundreds of rare and valuable plants of economic interest, and Supt. Sanders executed this order of the head of the department in a manner entitling him to our acknowledgment—our green-house has enabled us to receive and preserve this. Col. F.T. Russell, Columbia, Mo., potatoes; E. H. Smith, Dubuque, Iowa, potatoes and wheat; S. Tracy, Platteville, Wis., corn; A. J. King, New York City, assortment of apiarists supplies; G. W. Hogan, Brunswick, Mo., corn; M. Smith, Kirkwood, Mo., corn; C. Vernon, Millersburg, Ill., corn; J. M. Thorburn & Co., New York, potatoes; E. N. Tracy, Platteville, Wis., plants; a friend, who forbids our mentioning his name, has placed us under special obligations for plants and seeds from his valuable private collection.

Very respectfully,

S. M. TRACY,

Prof. of Entomology and Economic Batany, and Supt. of Gardens.

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# Report of Department of Pomology and Forestry.

SUMMARY OF WORK, FROM JUNE 1st, 1879, TO APRIL 23d, 1880.

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

DEAR SIR:—I have the honor herewith to submit a short synopsis of work in my department, during the last eleven months.

*Nursery.*—The operations in this branch were extended as rapidly as our limited means would allow, and the growing demand justified. The announcement issued to the people of the State, that a commercial nursery had been commenced here, seems to have met with universal favor, as about one hundred and twenty orders, filled direct from the nursery, and received by me, and about two thousand sent in, and filled for agents, would seem to testify. We have handled and sold during the last fall and spring, about fifteen thousand apple, six thousand peaches, fifteen hundred pears, cherries, plums, apricots, and quinces, twenty thousand grape vines, and a corresponding quantity of small fruits, ornamental and other trees and shrubs—a very encouraging beginning for so young an enterprise, which has induced me to propagate and plant extensively. About fifty thousand grafts of apples, peaches, plums and apricots were grafted this winter, and have been put out this spring, besides about ten thousand young shade and ornamental trees, ten thousand young evergreens, twenty thousand grape cuttings, and a multitude of other stock—peaches, pears, cherries, etc. The extreme drouth continuing all the year round, has had a very deleterious effect on our young plantations, and would plainly indicate that sufficient means of irrigations are imperatively necessary to prevent heavy loss in the future. This would make us independent of the weather; and make the business already established, a source of steadily increasing income, as well as of great benefit to the people of the State, who are thus supplied with reliable stock at moderate prices.

*Vineyard.*—The vineyard was properly cultivated, summer-pruned and tied, and yielded about three hundred and twenty-five dollars worth of grapes. It has made a fine growth, and promises an abundant yield this season. Many new valuable varieties have been added, and I expect to be able to show fruit of some sixty varieties the coming fall. The old trellis was repaired and new trellis made.

*Orchard.*—Over one thousand trees of apples, pears, peaches, plums, cherries, apricots, etc., will be added to the orchard this season, comprising nearly all well known varieties, and many new and rare ones to test their value in this State.

*Fruit Garden.*—About an acre will be added to the small fruits this spring, and we expect to be able to supply the town of Columbia, as well as some other markets, with their products. New varieties are also constantly added to the extensive collection we already have, and the result of these experiments given to the public.

*Hedges.*—The hedges were repeatedly pruned last summer, and give great promise of success. Two of them are of sufficient age to turn stock, and prove a complete fence against the most unruly cattle. I am experimenting with several other hedge plants, besides the Osage Orange and Honey Locust. We are testing the Buckthorn, and several others.

*Forestry.*—We shall plant quite a number of Catalpa and other timber trees this spring, and initiate a regular system of forest culture for timber.

About ten acres of new land, south of the farm house, were cleared to be used for orchard and nursery, of which about four acres will be planted this spring.

In the class of Pomology, instructed by me during the winter, there were thirty-eight students who received instructions in the theory of fruit-growing in the lecture room, as well as practical instruction in grafting and budding, and other operations connected with fruit culture. Many of them intend to canvass during vacation, as agents, for the sale of nursery stock, and I trust that the people will find them more intelligent, honest and trustworthy, than the majority of itinerant tree peddlers, now infesting the State.

Among the donations of seeds and plants received by me during the year, I will name those from the Department of Agriculture, Washington, D. C., seeds and plants; Jacob Rommel, Morrison, Mo., grafts of new and valuable grapes, apples and peaches; Samuel Miller, Bluffton, Mo., strawberry plants; J. W. Fleeman and Jacob Madinger, St. Joseph, cuttings and scions; R. F. Lynes, West Plains, Mo., buds of new peaches; Capt. Saunders, Boone Co., Mo., cuttings of grapes; Henry Shaw, St. Louis, cuttings and seeds; G. C. Eggling, Superintendent of Parks, St. Louis, collection of seeds; Geo. W. Campbell, Delaware, Ohio, grape vines; T. S. Hubbard, Fredonia, N. Y., scions of Prentiss grape; John Charlton, Rochester, N. Y., scions of grapes; James H. Ricketts, Newburgh, N. Y., scions of grapes; J. W. Frentiss, Puttney, N. Y., scions of grapes, and many others.

Upon the whole, the department has made very satisfactory progress, and although I feel, every day, the many wants arising from the scarcity of means allotted by our Legislature, and cannot develop the many facilities, which are apparent to me, as fast as I could wish, for the want of these means, yet, we do the best we can, have made a satisfactory beginning, and I hope that the people and the next Legislature will more fully appreciate our labors, and be more liberal toward an institution working for the interest of the whole commonwealth.

Respectfully,

GEORGE HUSMANN,

Superintendent Department Pomology and Forestry.

# Farm Department--Report 1879-80.

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

The Farm has now good specimens of full-blooded Short-Horns, 6; Alderny, 1; Cotswold sheep, 2; Lincolns, 4; Leicesters, 4; graded Southdowns, 45; Poland Chinas and Berkshires.

We have made improvements in quantity and quality of hogs, sheep and cattle.

Ten acres of brush land has been cleared for tobacco; new fences made, old ones repaired, and straw sheds for stock and implements have been built.

We have growing, 55 acres wheat, 12 acres oats, 50 acres meadow, 50 acres corn, 5 acres artichokes and about 200 acres of pasture.

## CROPS OF LAST YEAR.

Wheat, 710 bushels, the most of which was distributed for seed.

Corn, 2,250 bushels, of which 300 bushels were distributed as seed.

Artichokes, quantity unknown, as the most of them were dug by the hogs; but 300 bushels were distributed for seed.

Oats, 400 bushels.

Hay, 20 tons.

Beef cattle sold, 25 head.

Hogs sold, 35 head.

One hundred bushels of the Evans corn, and 270 bushels of artichokes, were sold to the Commissioner of Agriculture at Washington.

The Evans corn still proves the best stock we have tested.

On the next page will be found a table showing, in a condensed form, the results of the comparative tests of corn for the year 1879.

Respectfully submitted,

ROBERT MADDEX,

Farm Superintendent.

The following table shows, in a condensed form, the results of the comparative tests of corn for the last year, 1879:

| NAME. | Date of ripening. | No. of ears on 100 stalks | Weight | Color of corn | Length of ear | Circumference of ear | How filled out | No. of rows | No. of kernels in row | Weight of corn | Weight of cob, ozs. | Circumference of cob |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Baden | Sept. 5 | 140 | 489 | W | 8.5 | 6.1 | Well | 16 | 50 | 9.010 | 1.115 | 3.4 |
| Bloody Butcher | Sept. 5 | 110 | 459 | Ry | 10 8 | 6 5 | Fair | 14 | 57 | 11.280 | 2.810 | 4.7 |
| Chester County Mammoth | Sept. 15 | 112 | 484 | Y | 9.8 | 6.7 | Well | 20 | 56 | 10.015 | 1.780 | 4.3 |
| Early Yellow | Aug. 20 | 106 | 374 | Y | 10.1 | 5.8 | Well | 14 | 61 | 9.105 | 1.320 | 3.2 |
| Evans | Sept 5 | 108 | 564 | Y | 9.5 | 8.4 | Well | 18 | 62 | 14.820 | 1.910 | 4. |
| Gold Dust | Sept. 15 | 104 | 512 | Y | 10. | 6.7 | Well | 18 | 59 | 10.250 | 2.100 | 4.6 |
| Golden Dent | Sept. 5 | 118 | 369 | Y | 8. | 5.6 | Well | 12 | 53 | 8.150 | 1.280 | 3.3 |
| Golden Yellow | Sept. 5 | 111 | 220 | Y | 9.5 | 6.4 | Fair | 16 | 55 | 10.110 | 1.310 | 3.5 |
| Illinois Yellow | Sept. 5 | 108 | 365 | Y | 9.1 | 6.4 | Well | 16 | 52 | 9.640 | 2.105 | 4.1 |
| Jersey Red | Aug. 15 | 106 | 427 | Ry | 10.6 | 6.1 | Well | 14 | 50 | 9.450 | 2.780 | 4.1 |
| Long John | Sept. 15 | 120 | 553 | W | 12.1 | 5.6 | Well | 14 | 62 | 12.610 | 2.180 | 3.7 |
| Long Yellow | Aug. 20 | 152 | 266 | Y | 14.1 | 4.8 | Fair | 8 | 66 | 8.345 | 1.750 | 3.1 |
| New Madrid | Sept. 15 | 110 | 406 | Y | 9. | 7 6 | Fair | 24 | 46 | 10.570 | 2.075 | 4.6 |
| Pale Yellow | Sept. 10 | 108 | 500 | Y | 9 9 | 6.8 | Well | 16 | 45 | 10.125 | 2.080 | 4.2 |
| Peabody | Sept. 1 | 260 | 507 | W | 9.3 | 4 6 | Fair | 8 | 57 | 4.250 | 1.215 | 3.1 |
| Pennsylvania Flint | | 140 | 271 | Y | 12.5 | 4.5 | Fair | 8 | 66 | 6.010 | 9.020 | 2.9 |
| Proctor Bread | Sept. 10 | 104 | 531 | W | 8.1 | 7.7 | Well | 26 | 48 | 12.260 | 2.010 | 4.8 |
| Ragans White | Sept. 15 | 108 | 406 | W | 10.2 | 6.5 | Well | 12 | 55 | 10.115 | 2.670 | 4.1 |
| Ragans Yellow | Sept. 20 | 98 | 408 | Y | 9.4 | 6.8 | Well | 18 | 58 | 11.850 | 1.450 | 3.6 |
| St. Charles White | Sept. 12 | 116 | 491 | W | 9.2 | 6.7 | Well | 16 | 59 | 10.615 | 1.625 | 3.8 |
| Thompson | Sept. 10 | 122 | 479 | W | 9.3 | 6.9 | Well | 18 | 46 | 11.815 | 2.220 | 4. |
| White Flint | Sept. 1 | 120 | 472 | W | 11.2 | 5.5 | Well | 14 | 64 | 9.170 | 1.890 | 3.7 |

# XII. NORMAL SCHOOL.

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

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

JOSEPH G. NORWOOD, LL. D.,
*Professor of Physics.*

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.*

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

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

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

MRS. E. O. CARR,
*Assistant Professor of English.*

CONRAD DIEHL,
*Professor of Art.*

# REPORT.

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

SIR:—I have the honor herewith to submit my report of the work of the Normal College, for the session of 1879-80. The entire number of students pursuing the professional course is seventy-two. Of this number six are academic seniors; the remainder are in either the junior or senior classes of the two-year course.

The number of students under my instruction, arranged by semesters, is as follows:

| FIRST SEMESTER. | Enrolled.... | Remaining at the end of semester. |
|---|---|---|
| Senior Pedagogics | 21 | 19 |
| Junior Pedagogics | 32 | 27 |
| English Grammar | 47 | 40 |
| Arithmetic | 47 | 42 |
| SECOND SEMESTER. | | |
| Senior Pedagogics | 22 | 20 |
| Junior Pedagogics | 37 | 27 |
| Arithmetic | 49 | 45 |
| Totals the year | 255 | 220 |

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 following schedule represents the course leading to the elementary Normal degree (Pe. P.):

## COMMON SCHOOL NORMAL COURSE.

### FIRST YEAR.

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

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, Revolution, 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, monthly, 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.

For the present, the students of the collegiate course will join this class in drawing.

*Essays* throughout the year.

The time table for the two-year course is as follows:

FIRST YEAR.

| *First Semester.* | | *Second Semester.* | |
|---|---|---|---|
| 9–10. | Arithmetic and Book-keeping. | 9–10. | Botany. |
| 10–11. | U. S. History. | 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.

| *First Semester.* | | *Second Semester.* | |
|---|---|---|---|
| 9–10. | English Literature and History. | 9–10. | Metaphysics. |
| 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.

There are, in the elementary course, twelve candidates for graduation, of which number several are teachers of practical experience. It is the policy of the school to admit teachers of experience, who are also proficient in the subjects of instruction, to the senior class, upon their passing satisfactory examinations; but such admissions cannot well be made except at the beginning of the second year's work.

## 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 wisdom of the requirement by which a semester of professional instruction was added to the curriculum of the academic seniors has been abundantly justified in the experience of the present year. The longer connection of this class with the Normal school tends to increase the zeal of the students and to unify the work of the department.

The number of candidates for the Academic Normal degree is six, of which number four have taught successfully for periods ranging from five months to seven years.

### METHODS OF INSTRUCTION.

"Rosenkrantz's Pedagogics as a System," has been used as a text book on the science of education, but much of the instruction in both classes has been given by lectures.

## Positions for Graduates.

While we are unable to promise positions to our graduates, we are always glad to assist them in establishing themselves in their chosen profession. With this aim, as well as in the hope of rendering a service to those desiring to employ teachers, the following circular has been prepared, and will be sent out at once to the County Commissioners, and other school officers throughout the State. It will be observed that special attention is called to the matter of the State Certificates issued to graduates of the Department:

### Circular.

University of Missouri, Normal College.

Dear Sir:—We are anxious to help the members of our graduating classes in securing positions for the next year, and shall appreciate any assistance which you may find it in your power to render us.

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. These students, several of whom are teachers of experience, are qualified to fill positions in schools of advanced grade.

The elementary Normal degree (Pe. P.) is conferred on those persons who successfully complete a two-year course of study whose curriculum embraces these subjects: Arithmetic and Book-keeping, Algebra, Geometry, Drawing, Geography, English Grammar and Analysis, Rhetoric, U. S. History, Botany, Anatomy, Physiology and Hygiene, Zoölogy, Ethics, Psychology and Pedagogics. The scientific part of this course is, of necessity, elementary, but is believed adequate for the work of district schools, for whose teachers the course is principally intended. The professional training is fully equal to that of the academic course. Several students of this class, also, have had practical experience in the school room.

In regard to the State Certificates issued to the graduates of the Normal College, a letter just received from the State Superintendent of Public Schools, contains the following statement: "*To graduates from your full course I will issue State Certificates proper (on parchment and permanent). To those from your lower course (the Pe. P.'s) a 'special' for three years.*" This action 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.

Should there exist vacancies in your corps of teachers, which you wish to fill, it will afford us pleasure to recommend to you suitable persons for the places. In order that we may do this the more readily, it will be advisable, in making application for teachers, to state the location of the school and its grade, whether a principal teacher or an assistant is wanted, whether a lady or a gentleman is preferred, what salary may be expected, and whether experience in teaching is required.

All letters of inquiry will receive prompt attention. Communications may be addressed to

Grace C. Bibb,
Dean of Normal Faculty.

Columbia, Mo., May 6, 1880.

## UNIVERSITY INSTITUTE.

The annual session of the University Normal Institute was held in the month of March, beginning on the 16th, and continuing five days. The press throughout the State gave wide publicity to the notice of the meeting, and the lectures attracted large audiences. The programme of exercises was as follows:

TUESDAY, MARCH 16.

| | | | |
|---|---|---|---|
| 9–10. | Pedagogics, Prof. Grace C. Bibb. | 12– 1. | Psychology, Pres. Laws. |
| 10–11. | Arithmetic, Prof. Cauthorn. | 2– 3. | Constitutional Law, Prof. Blair. |
| 11–12. | Chemistry, Prof. Schweitzer. | 3– 4. | Natural History, Prof. Swallow. |

WEDNESDAY, MARCH 17.

| | | | |
|---|---|---|---|
| 9–10. | Pedagogics, Prof. Grace C. Bibb. | 12– 1. | Study of Plants, Prof. Husmann. |
| 10–11. | English, Prof. McAnally. | 2– 3. | Physiology, Dr. Duncan. |
| 11–12. | Metric System, Prof. Ficklin. | 3– 4. | School Law, Commissioner Hall. |

THURSDAY, MARCH 18.

| | | | |
|---|---|---|---|
| 9–10. | Art, Prof. Diehl. | 12– 1. | Psychology, Pres. Laws. |
| 10–11. | Arithmetic, Prof. Cauthorn. | 2– 3. | Physiology, Dr. Duncan. |
| 11–12. | Chemistry, Prof. Schweitzer. | 3– 4. | English, Prof. McAnally. |

FRIDAY, MARCH 19.

| | | | |
|---|---|---|---|
| 9–10. | Pedagogics, Prof. Grace C. Bibb. | 12– 1. | Constitutional Law, Prof. Blair. |
| 10–11. | English, Prof. McAnally. | 2– 3. | Physiology, Dr. Duncan. |
| 11–12. | Economic Botany, Prof. Tracy. | 3– 4. | Art, Prof. Diehl. |

SATURDAY, MARCH 20.

| | | | |
|---|---|---|---|
| 9–10. | Pedagogics, Prof. Grace C. Bibb. | 12– 1. | Psychology, Pres. Laws. |
| 10–11. | English, Prof. McAnally. | 2– 3. | Physiology, Dr. Duncan. |
| 11–12. | Signs in Algebra, Prof. Ficklin. | 3– 4. | School Law, Commissioner Hall. |

The advantages of the Institute are enhanced by holding it while the University classes are in session, as, then, visitors from abroad are enabled to observe the actual conduct of classes, as well as be benefited by the lectures of a larger number of professors than could be assembled in the recess.

Very respectfully, yours,

GRACE C. BIBB,

Dean of Normal Faculty.

# XIII. LAW SCHOOL.

## FACULTY.

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

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

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

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

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. GIVEN CAMPBELL,
*Lecturer upon Admiralty Law and Practice.*

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

## MEMBERS OF THE LAW SCHOOL.

### SENIOR CLASS.

| | | |
|---|---|---|
| Austin, Frederick Henry..... | Hamilton..... ..... | Caldwell county, Mo |
| Bowser, William Arthur..... | Centralia..... | Boone county, Mo. |
| Gaynor, John..... | Rulo ..... | Nebraska. |
| Kirtley, Richard Edwin..... | New London..... | Ralls county, Mo. |

| | | |
|---|---|---|
| Loy, Thomas T. | Lebeck | Cedar county, Mo. |
| Penney, Walter Dunn | Jackson | Cape Girardeau county, Mo. |
| Phetzing, Uriah D. | Napoleon | Lafayette county, Mo. |
| Pigott, William Trigg | Boonville | Cooper county, Mo. |
| Russell, Joseph James | Charleston | Mississippi county, Mo. |
| Sheetz, James Lucas | Greenville | Clay county, Mo. |
| Sheppard, Jesse C. | Jackson | Cape Girardeau county, Mo. |
| Smith, Francis Marion | Shobonier | Illinois. |
| Wilson, Robert Pickney | Shawneetown | Cape Girardeau county, Mo. |

JUNIOR CLASS.

| | | |
|---|---|---|
| Agee, George Sparrel | Linn | Osage county, Mo. |
| Babb, Jeremiah Glenn | Columbia | Boone county, Mo. |
| Coots, John W. | Platte City | Platte county, Mo. |
| Denney, Joseph Snoddy | Roanoke | Howard county, Mo. |
| Ely, Thomas Richard Rupe | Rockport | Atchison county, Mo. |
| Emerson, Cyrus Garrett | Rolla | Phelps county, Mo. |
| Gray, James M. | Independence | Jackson county, Mo. |
| Hickman, James K | Louisville | Kentucky. |
| McGhee, Franklin P. | Greenville | Wayne county, Mo. |
| Patton, Henry W. | Vincennes | Indiana. |
| Pharis, Thomas Akeman | Lahai | Bates county, Mo. |
| Reed, Benjamin Franklin | Olney | Lincoln county, Mo. |
| Smith, Andrew J. | Shobonier | Illinois. |
| Tapley, Joe | Spencerburg | Pike county, Mo. |
| Taylor, Robert Henry | Helena | Arkansas. |

The following gentlemen received the degree of Bachelor of Laws:

| | |
|---|---|
| Frederick H. Austin, | William T. Pigott, |
| William A. Browser, | Joseph J. Russell, |
| John Gaynor, | James L. Sheetz, |
| Thomas T. Loy, | Jesse C. Sheppard, |
| Walter D. Penney, | Francis M. Smith, |
| Uriah D. Phetzing, | Robert P. Wilson. |

The degree of Bachelor of Laws was also conferred upon Lieut. Francis P. Blair, of the United States Army, Professor of Military Science and Tactics, who has been a thorough student of law, and during the term rendered valuable assistance to the Dean.

### 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 ends the last week in March. The full course is two years, and embraces the various branches of

the Common Law, and of Equity, Commercial, International, and American and English Constitutional Law, Criminal and Federal Jurisprudence.

The mode of instruction is by daily examinations upon the text-books, by daily lectures upon Special Titles, and by the exercises of a Moot Court.

The text-books upon Municipal Law, and in class examinations, are Blackstone's Commentaries, Kent's Commentaries, Parsons on Contracts, Greenleaf's Evidence, vol. 1., Stephen on Pleading, Bliss on Pleading, Bispham's Equity, and Cooley on Constitutional Law. The works upon bills and notes and upon torts, to be used hereafter, are not fully determined.

While reliance is chiefly had upon standard books, every student being examined daily upon their contents, we have in addition continuous courses of lectures by the Dean, by the several gentlemen named as lecturers, and by others.

Law students are permitted to enter classes in other departments, if it does not interfere with the regular Law Course. The members of the Senior class will seldom be able to do so, but the Juniors are not so crowded, and are recommended to carry along an academic study. It is believed that law students will be specially aided in their profession by attending the full course of instruction in Metaphysics, by the President, which includes Psychology, Logic, Ethics, etc. The President will also give occasional lectures to the law class upon subjects germain to this course.

### 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 in all cases 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 Faculty. Essays upon legal topics are also read each week.

A law library—consisting of treatises upon the various titles of the Common Law, of the Reports of the Supreme Court of the United States, and of a few of the leading States, of treatises upon the Civil Law, with some choice works of law literature—is open at all hours for consultation and study. Besides this, the general library of the University, and the reading room, are open to the students of the law as well as of the other departments. The necessary text-books for class exercises, must, however, be furnished by the student.

### 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, by a committee of lawyers, or by the Law Faculty, and the degree will be given or withheld, according to the proportionate number of failures. The last Legislature has sought to secure a more thorough preparation for the bar, by requiring the Circuit Courts to examine candidates for admission in open court. This is a move in the right

direction, and we shall heartily second it by increased fidelity in our instructions and final examinations. 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, at least one daily lecture, often two.

## Advice to Young Men.

The Faculty are sometimes asked for advice, as to the necessity of a preliminary study of law. If instructions were given by lectures alone, they would say to the student that he should by all means master a few elementary works, like Blackstone and Kent, before attempting to listen to them. The lectures would either fail to be understood or to be remembered, even by an attentive student, without some previous knowledge of the subject. Under our system, there is less necessity for such preparation, and yet the advantage it gives the student is very great. He can better understand and remember his daily work, not only because of some previous knowledge of the subject, but from the habit of study which he has acquired. It is for the latter reason, other things being equal, that those who have had the advantage of the discipline of academical study, so generally show themselves, in the class-room, superior to others.

Advice is also sought by those who can come but one session, as to whether they had better enter the Junior class, or wait and afterwards enter the Senior. Under these circumstances, the latter course is better. The daily recitations of the Senior and Junior classes are at different hours, and opportunity is thus given the Seniors to review the Junior studies. A diligent student, *with proper preparation* before entering,

*The act of March 5, 1872, (Laws of 1872, 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."

can attend both recitations, and understand not only the text, but the explanations and illustrations of the Professor. It is better, however, to take the full course, especially in reference to the lectures, as they are more thoroughly understood by being twice heard. It is also better for the reason that it is impossible for a student, however diligent or whatever may be his power of memory, in a short period to appropriate what he may learn, to make the science of law a part of his mental constitution, to think in a legal channel. To become a lawyer this is essential, and it is the work of years. Young men make a grave mistake by hurrying through their preparation for the bar.

### Object of the School.

In deliberating whether to open the Law Department of the University, the Curators felt that, in a State Institution, the obligation resting upon them to make it contribute to improving the administration of justice, was imperative. The chief machinery of all legitimate government is directed to the administration of the law; personal and property rights are only thereby secured, and the University would not be truly a State Institution if it did not contribute to this primary object.

Further, they have felt it necessary that something should be done in this direction. The average legal education of the lawyers of the State is lamentably low. The direct losses to the public in the immense cost bills paid out of the State and county treasuries, and in the so frequent failure in criminal justice notwithstanding, are frequently owing to this cause. And this loss is but a trifle compared with that sustained by the citizen in his property disputes. The State, and for that matter all the States, have too many lawyers in number, and too few of the higher grade. It is to those who are supposed to be lawyers, but who know so little about law, called as they so often are, by popular or personal choice, to positions of responsibility, to the bench, to legislative halls and to the management of causes, that we owe very many, if not most of our failures, in the administration of justice.

It is not expected that young men can be turned out good lawyers from any law school, or that all who graduate with credit will so follow up their studies as to become such. But it is expected that a State school, exclusively devoted to legal studies, where every student must of necessity become familiar with legal principles before he can graduate, will greatly aid in elevating the standard of legal education. It is to this end that the school has been opened, and it is to this end that the Professors are expected to work.

If further information is desired in relation to the school, address

P. BLISS,
Dean of the Faculty.

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### Ordinary Daily Exercise.

9—10. Recitations to Professor Bliss.
10—11. Recitations to Professor Gordon.
11—12. Lectures by Professor Bliss.
12— 1. Lectures by Professor Norwood, Mondays, Tuesdays and Fridays.

When non-resident Lecturers are present the hours are changed to accommodate them.

9 A. M., Saturdays, Moot Court.

# 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.*

ANDREW W. McALESTER, A. M., M. D.,
*Professor of Surgery and Obstetrics.*

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

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.*

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

W. P. KING, M. D., Sedalia, Mo.,
*Lecturer on Sterility and Special Topics.*

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 1879-80.

| *Names.* | *Residences.* |
|---|---|
| Austin, Robert Stubblefield | Missouri. |
| Bagby, Oliver | Missouri. |
| Carr, Benjamin Franklin | Missouri. |
| Chastain, Charles William | Missouri. |
| Chastain, Edward Neville | Missouri. |
| Christie, Ezra Elmore | Missouri. |
| Clark, Bennett Hillsman | Missouri. |
| Crumbaugh, James Edward | Missouri. |
| Cullen, John. | Missouri. |
| Dorsey, Frank Blinn | Missouri. |
| Grady, Henry Douglass | Missouri. |
| Gremp, Solomon Alfred | Germany. |
| Gordon, James | Missouri. |
| Halley, John James | Missouri. |
| Harris, Joseph Edwin | Missouri. |
| Hewitt, Don Elkanah | Missouri. |
| Hill, Kimball | Missouri. |
| Hoge, Moses Woods | Missouri. |
| Leedom, John Milton | Missouri. |
| Leedom, Thomas Pleasant | Missouri. |
| Lubbock, Clinton Henry | California. |
| Maness, Marquis Hurkalum | Texas. |
| Marsh, John Wellington | Missouri. |
| Maupin, Irvin | Missouri. |
| Moore, William Maurice | Texas. |
| Muns, George Elias | Missouri. |
| Nuckles, Melville Green | Missouri. |
| O'Hage, Justus | Germany. |
| Powers, John | Missouri. |
| Roberts, Fayette Brown | Missouri. |
| Rogers, Archie Bowen | Missouri. |
| Ruge, Julius Peter | Missouri. |
| Sexton, Millard Payne | Missouri. |
| Simco, George Washington | Missouri. |
| Trigg, Abner Jasper | Missouri. |
| VanDeventer, Edwin Drake | Missouri. |
| Williams, George Harvey | Missouri. |
| Williams, Ralph Houston | Missouri. |
| Wingfield, Urial B | Missouri. |
| Winston, John Stevenson | Missouri. |

Regular Students, 40.

## IRREGULAR MEDICAL STUDENTS.

| | |
|---|---|
| Baker, J. B | Missouri. |
| Terrill, J. O | Missouri. |
| Wallingford, C. H | Missouri. |

Irregular Students, 3 ; Total in School, 43.

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 eighteenth course of instruction will begin on the second Monday of September, 1880, and continue until the end of the college year, the first Thursday of June, 1881.

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.

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.

In 1877 a re-distribution of the subjects taught was made among the Professors, with a view of economizing the time and labor of the students. 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.

Since the organization of the school, it has been the custom to invite Physicians of standing and culture to deliver, during the regular course, lectures upon special subjects. This has proven a mutual benefit. During the past session Dr. J. E. Tefft, of Springfield, Mo., Dr. J. M. Allen, of Liberty, Mo., and Dr. W. P. King, of Sedalia, Mo., have, each, delivered a very instructive and interesting course of lectures, upon subjects selected by themselves. This plan will be pursued and extended, and we hope that before the opening of the next session, we will be able to announce several additional permanent lecturers.

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, they may be academic students, and take Anatomy and Chemistry in the medical course, preparatory to entering on the full medical course, after graduating in Arts or 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 now equipped with models in clastic and papier mache, plaster casts, drawings and other appliances for the illustration of the lectures on anatomy, surgery and physiology.

Among the many valuable preparations for demonstrating anatomy and surgery is Dr. Auzoux's Clastic Man, a complete and accurate model of the male 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, Rüdinger and others, together with over 400 projections, etc., etc.

The degree of Doctor of Medicine is conferred upon such students as prove their fitness to receive it, by rigid and searching examinations, conducted, during the last part of the session, by the members of the Faculty. These examinations are in writing, and 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 2nd Monday of September, 1880, and terminate on the 1st Thursday in June, 1881. The fee for tuition, for the term of nine months, is forty dollars; for Demonstrator's ticket, ten dollars; *both payable at the time of matriculation, and required of every student.*

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 students are urged, *during their Junior course*, 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.

*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 nine (9) months each 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, 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*, Rindfleish's Pathological Histology.
Pathology—*Virchow*, Paget, Gross.
Toxicology—*Taylor*.
Opthalmology—*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 10TH, 1880.

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### BOARD OF CURATORS.

| | | |
|---|---|---|
| HON. JAMES S. ROLLINS, LL. D. | Columbia | Term expires Jan. 1, 1881. |
| CHARLES C. BLAND, ESQ. | Rolla | |
| WILLIAM H. LACKLAND, ESQ. | St. Louis | |
| 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. |
| *WILLIAM E. GLENN, M. D. | Rolla | |
| HON. JOHN WALKER | Howard Co. | |
| A. M. MILLARD, *vice* Dr. Glenn. | Rolla | |

### OFFICERS OF THE BOARD.

HON. JAMES S. ROLLINS, LL. D. ..... President.

*WM. E. GLENN, M. D. ..... Vice-President

ROBERT L. TODD, Secretary. RICHARD BEVERLY PRICE, Treasurer.

### SCHOOL OF MINES.

EXECUTIVE COMMITTEE.

A. M. MILLARD, ESQ. ..... Rolla.

*WM. E. GLENN, M. D., Chairman. ..... Rolla.

JERRE C. CRAVENS, ESQ. ..... Springfield.

CHARLES C. BLAND, ESQ. ..... Rolla.

C. H. FROST, Treasurer. ..... Office at Rolla.

PROF. R. W. DOUTHAT, Secretary Executive Committee.

*Deceased.

# SCHOOL OF MINES AND METALLURGY.

## FACULTY.

SAMUEL S. LAWS, LL. D., PRESIDENT.

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

MAJOR GEORGE D. EMERSON, M. E.,
*Professor of Civil and Mine Engineering and Graphics.*

ROBT. W. DOUTHAT, A. M., PH. D.,
*Professor of Languages and Principal of Preparatory Department.*

EDWIN J. JOLLEY,
*Adjunct Professor of Mathematics.*

MISS FLORENCE E. WHITING,
*Assistant in Preparatory Department.*

ROBERT W. DOUTHAT,
*Secretary of Faculty.*

EDWIN J. JOLLEY,
*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 | Rolla, Mo. |
| Hare, Almon W., M. E | 1875 | Leadville, Col. |
| Emerson, Cyrus H., C. E | 1876 | Rolla, Mo. |
| Garvens, Oscar E., M. E | 1876 | 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 Dumesnill, 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. E | 1879 | St. Louis, Mo. |

## 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, Elphalet (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.
Lally, James B. (Book-keeping).....1879 .....Rolla, Mo.
Wishon, Chas. (Book-keeping).....1879 .....Rolla, Mo.

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# COURSE OF STUDY.

## BUSINESS COURSE.

Spelling, English Grammar, Higher Arithmetic and Book-keeping.

## TEACHERS' FIRST CLASS CERTIFICATE.*

| First Term. | Second Term. |
|---|---|
| Spelling.....Webster's Com. School Dic. | Spelling .....Webster's Com. School Dic. |
| Arithmetic.....Ray's Third Part. | Arithmetic.....Ray's Third Part. |
| Arithmetic .....Ray's Higher. | Arithmetic.....Ray's Higher. |
| English Grammar.....Clark's Normal. | Eng. Grammar.....Clark's Normal. |
| Word-Anal.....Swinton's. | Word-Anal.....Swinton's |
| Phys. Geog.....Guyot's. | Phys. Geog.....Guyot's |
| Physics.....Peck's Ganot's. | Physics.....Peck's Ganot's. |
| Anatomy.....Cutter's. | Anatomy .....Cutter's. |
| Botany.....Gray's "How Plants Grow." | Eng. Literature..... Hart's. |
| History of U. S.....Barnes's. | Gen'l History.....Anderson's. |
| Book-keeping .....Rohrer's. | Book-keeping.....Rohrer's. |
| Drawing.....(Map Draw.) | Drawing.....(Map Draw.) |
| Astronomy .....Ray's. | Civil Government.....Townsend's |
| Algebra .....Ficklin's. | Algebra.....Ficklin's. |
| Composition.....Swinton's. | Logic .....Coppee's. |
| Rhetoric.....Hart's. | Chemistry.....Norton's. |

*No student is expected to take all the studies of this class in one year, but may devote two, or even three years, to its completion.

## TEACHERS' SECOND CLASS CERTIFICATE.

| First Term. | Second Term. |
|---|---|
| Spelling.....Webster's Com. School Dic. | Spelling.....Webster's Com. School Dic. |
| Arithmetic.....Ray's Third Part. | Arithmetic.....Ray's Third Part. |
| Eng. Grammar.....Clark's Normal. | Eng. Grammar.....Clark's Normal. |
| Word-Anal.....Swinton's. | Word-Anal.....Swinton's. |
| Phys. Geog.....Guyot's. | Phys. Geog.....Guyot's. |
| Anatomy.....Cutter's. | Anatomy.....Cutter's. |
| History of the U. S.....Barnes's. | Civil Government.....Townsend's. |
| Map Drawing..... | Map Drawing..... |
| Elementary Algebra.....Ray's. | Elementary Algebra.....Ray's. |
| Rhetoric.....Hart's | Botany.....Gray's "How Plants Grow." |

## PREPARATORY TO REGULAR TECHNICAL COURSE.

Spelling, Arithmetic, Eng. Grammar, Physics, Algebra and Preparatory Chemistry.

## COURSE IN MINE ENGINEERIMG.

### First Year.

*First Term.*—Chemical Philosophy (Cooke); General Chemistry—Lectures and recitations, with experiments; Blow-pipe Analysis—Laboratory practice; Field Work—Practice in manipulating surveying instruments; Physics—Lectures and recitations; Algebra—to quadratic equations (Ficklin); Geometry (Davies' Legendre); Drawing—Mechanical and ornamental.

*Second Term.*—General and Industrial Chemistry—Lectures and recitations; Analytical Chemistry—Qualitative analysis (Fresenius); Determinative Mineralogy—Blow-pipe examination of minerals; Field Work—Land surveying (Gillespie); Physics—Lectures and recitations; Drawing—Plain and ornamental, alphabets and free-hand; Algebra—Finished (Ficklin); Trigonometry (Olney); Mensuration (Vodges).

### Second Year.

*First Term.*—Analytical Chemistry—Quantitative (Fresenius); Geology—Dynamical and historical; Mineralogy—Descriptive; Metallurgy—Lectures on fuel, refractory materials, furnaces, zinc, copper, lead and silver; Higher Surveying (Gillespie), with field practice; Drawing—Topographical and mechanical; Analytical Geometry (Loomis); Descriptive Geometry (Davies).

*Second Term.*—Geology—Dynamical and historical; Analytical Chemistry—Quantitative; Assaying—Lectures and laboratory practice with the ores of lead, antimony, copper, zinc, iron, gold and silver; Metallurgy—Lectures on tin, bismuth, antimony, mercury and gold; Mine Engineering—Lectures on systems of attack in mineral mines, and on mechanical appliances of mining properties; Mine Surveying; Steam Engine—Lectures; Drawing—Mechanical; Calculus (Loomis); Shades, Shadows and Perspective (Davies).

### Third Year.

*First Term.*—Analytical Chemistry—Quantitative and assaying; Metallurgy—Lectures, gold and iron; Mine Engineering—Lectures; Analytical Mechanics (Peck); Elements of Mechanism (Goodive); Stereotomy and Stone cutting (Mahan).

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

## COURSE IN CIVIL ENGINEERING.

### First Year.

*First Term.*—(The same as First Term of the Mine Engineer's course.)
*Second Term.*—(The same as the Second Term of the Mine Engineer's course.)

### Second Year.

*First Term.*—Roads and Railroads (Gillespie); Higher Surveying (Gillespie), with field practice; Drawing—Topographical and mechanical; Analytical Geometry, (Loomis); Descriptive Geometry (Davies); Analytical Chemistry—Qualitative; Geology—Dynamical and historical (Dana); Astronomy.

*Second Term.*—Field Work—Mine Surveying; Steam Engine, (Lectures); Drawing—Mechanical; Calculus (Loomis); Shades, Shadows and Perspective (Davies); Analytical Chemistry—Quantitative (optional); Geology—Dynamical and historical; Civil Engineering (Mahan).

### Third Year.

*First Term.*—Field Work—Principally railroad location and construction; Mechanism—Goodives (Lectures); Drawing—Mechanical and Plotting; Mechanics (Peck); Stereotomy and Stone-cutting (Mahan).

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

## COURSE FOR BACHELOR OF PHILOSOPHY.

### First Year.

*First Term.*—(Same as First Term of Mine Engineer's course.)
*Second Term.*—(Same as the Second Term of Mine Engineer's course.)

### Second Year.

*First Term.*—Analytical Chemistry—Quantitative analysis; Geology—Dynamical and Historical; Mineralogy—Descriptive; Metallurgy—Lectures on fuel, refractory materials, furnaces, zinc, lead, copper and silver; Higher Surveying (Gillespie), with field practice; Drawing—Topographical and mechanical; Analytical Geometry (Loomis); Descriptive Geometry (Davies).

*Second Term.*—Geology—Dynamical and historical; Analytical Chemistry—Quantitative; Assaying—Lectures and practice with the ores of lead, antimony, copper, zinc, iron, gold and silver; Metallurgy—Lectures on tin, bismuth, antimony, mercury and gold; Steam Engine—Lectures; Drawing—Mechanical; Calculus (Loomis); Shades, Shadows and Perspective (Davies).

### Third Year.

*First Term.*—Analytical Chemistry—Quantitative and assaying; Metallurgy—Lectures, gold and iron; Analytical Mechanics (Peck); Elements of Mechanism (Goodive); Stereotomy and Stone-cutting (Mahan.)

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

## OPTIONAL COURSE.

Book-keeping, in all its forms; Latin, Greek, English and German; Land Surveying, with field practice in the handling of Instruments, in taking courses and distances, and in laying out grounds; or so much of the Technical and Preparatory courses as students may wish to pursue in preparation for teaching in the Public Schools.

The course in Book-keeping is arranged for two classes: the first, to devote all their time to the subject, if they desire to do so, and thus be enabled to complete the Merchant's Accounts, Banking, Railroading and Steamboating *in three months*, or Merchants' Accounts *in one month*; the second class, to study Book-keeping, in connection with any other study or studies they may wish to pursue, and take the whole year to the completion of the business course.

The *First Class* is arranged for the accommodation of those who can not afford to spend ten months at school, for the sake of pursuing one special subject.

The *Second Class* has precisely the same course of study as the First, and the students who are pursuing Book-keeping in the second class, can devote whatever of unoccupied time they have, to other branches of our course, or to attendance upon the recitations of other classes, or to lectures given to any of the classes.

The curriculum does not prescribe any course in Latin and Greek; but instruction in either of them will be given, if desired, of the highest or lowest grade.

Instruction is given in French and Spanish by Prof. Jõlley.

## GERMAN.

PROFESSOR DOUTHAT.

The course in German is according to the following order, and may be commenced at the beginning of the first or second semester:

### FIRST YEAR.

*First Semester.*—Comfort's German Course, and Comfort's Reader.

*Second Semester.*—Comfort's German Reader, continued, or any of the classic German plays, and select written exercises.

### SECOND YEAR.

*First and Second Semesters.*—Deutsche Lyrik, or Conversation, or some of the classic German plays, and written exercises.

### THIRD YEAR.

*First and Second Semesters.*—Conversation, select written exercises, and Goethe's Prose.

The method by which we endeavor to teach German, is *repetition*—the method by which we learn our mother tongue; and this repetition is a training of the *eye*, the *ear*, the *tongue*, and the *hand*.

# DEPARTMENTS OF INSTRUCTION.

## MATHEMATICS.

PROFESSOR JOLLEY.

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).

## GENERAL CHEMISTRY.

PROFESSOR WAIT.

Instruction in this Department is given to two classes—the Preparatory, and First class.

### PREPARATORY CLASS.

In this class, chemistry is commenced with the second 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.

# ANALYTICAL CHEMISTRY.

## Professor Wait.

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

*Second Year.*—Qualitative 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) Cerusite; (18) Smithsonite; (19) Blende; (20) Coal, proximate; (21) Coal, ultimate and heating power; (22) Stibnite; (23) Realgar; (24) Blast furnace slag; (25) Lead furnace

*Those in italics are *partial* analyses.

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.

## METALLURGY.

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 method 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 county, 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.

## PHYSICS.

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

## GEOLOGY AND MINERALOGY.

In the preparatory year, the students have recitations and lectures in 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 references 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 longer 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.

## GRAPHICS.

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 free-hand 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 application 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.

## MINE ENGINEERING,

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 seventeen 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 |
| Total | $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 surveying 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 analysis and assaying have been increased in working capacity, and are amply furnished with apparatus and 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-Eighth 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."

# SEVENTH COMMENCEMENT OF THE SCHOOL OF MINES.

## THURSDAY, JUNE 10, 1880.

### PROGRAMME.

PRAYER—MUSIC.

| | |
|---|---|
| CONFERRING Degrees and Certificates | President Laws. |
| ADDRESS on part of the Graduates | Mr. A. C. Carson. |
| ADDRESS | Prof. R. W. Douthat. |
| ADDRESS | Col. J. Fairbanks. |
| ADDRESS—"Government" | Rev. Geo. H. Williamson. |

MUSIC.

### DEGREES CONFERRED.

MINE ENGINEERS.

CARSON, ARTHUR C., St. James, Mo.—Subject of Thesis : *Metallurgic Treatment of Argentiferous Ores.*

SMITH, LORIN X., Rolla, Mo.—Subject of Thesis : *Metallurgic Treatment of Argentiferous Ores.*

## CALENDAR.

### 1880.

| | |
|---|---|
| September 12, Monday | Winter Semester begins. |
| December 23, Thursday | Close for Christmas Holidays. |

### 1881.

| | |
|---|---|
| January 4, Tuesday | Exercises resumed. |
| January 31, Monday | Half-yearly examination begins. |
| February 5, Saturday | Half-yearly examination closes. |
| February 7, Monday | Summer Semester begins. |
| June 8, Wednesday | Yearly examination begins. |
| June 14, Tuesday | Yearly examination closes. |
| June 16, 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.*

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

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

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

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

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

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

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.*

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 goedetic, 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.

| 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<br>Drawing design of structures ⅔<br>Hydraulic Engineering<br>Civil Engineering<br>Law of Contracts<br>Economic Geology ⅓ | | Drawing, Project, and Thesis<br>Law Contracts<br>Geodesy<br>Hydrography and Hydraulic Engineering | | Chart and Thesis<br>Drawing<br>Observatory Astronomy<br>Geodesy<br>Road and R. R. Surveying |
| First Semester. SENIOR YEAR. | Mechanical Drawing ½<br>Mineralogy and Logic ½<br>Steam Engine ½<br>Quantitative Analysis<br>Civil Engineering<br>Applied Mechanics ½ | | Colored Topography ½<br>Mineralogy and Logic ½<br>Magnetic and Meteorological Surveying ½<br>Hydraulic Engineering<br>Chart Projections ½<br>Navigation, Maritime and Coast Surveying | | River Surveying<br>Drawing<br>Astronomy, Spherical and Practical<br>Method of Least Squares<br>Geodesy |
| Second Semester. | Qualitative Analysis and Blowpiping ⅔<br>Sextant Astronomy ½<br>Descriptive Geometry--Shades Shadows and Perspective<br>Chemistry.<br>Theoretical and Applied Mechanics | | Sextant Astronomy ½<br>Elements of Mechanism ½<br>Geological Surveying, Economic Geology and Physical Geography<br>Shades, Shadows and Perspective<br>Triangulation, Topography and Topographical Drawing | | Geological, Magnetic and Meteorological Surveying<br>Pen and Colored Topography<br>Sextant Astronomy ½<br>Maritime and Coast Surveying |
| First Semester. JUNIOR YEAR. | Descriptive Geometry<br>Road, R. R., and Higher Surveying<br>Chemistry and Laboratory<br>Calculus, and Method of Least Squares | III<br>II | Free-hand Drawing ½<br>Method of Least Squares ½<br>Descriptive Geometry<br>Chemistry and Laboratory<br>Land, Road and R. R. Surveying | III | Triangulation and Topography<br>Free-hand Drawing, Shading and Perspective<br>Chart Projection ½<br>Topographical Drawing<br>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 goedetic 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 goedetic 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, 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 semester, a class will be organized and instructed (theoretically and practically) in land surveying, with compass and theodolite ; in the surveys for, and location and construction of, roads ; and in the surveys for location of, and in the designs for and construction of, wooden bridges. This class will also be instructed in drawing. This course can be completed in eighteen weeks; and a *certificate of proficiency* will be issued to those who complete it. Fee for this special course of eighteen weeks, $25.

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, which contains nearly all the standard works on surveying, engineering, geodesy, and astronomy. These they are expected to make constant use of, and thus enlarge, by careful reference and judicious reading, their acquaintance with the subjects presented in the text-books and lectures.

We desire to call special attention to the increased facilities which this University now enjoys for teaching astronomy. It offers facilities for instruction in theoretical and practical observatory and sextant astronomy, equal to any in the United States. The most refined astronomical methods of the U. S. Engineer Corps and the U. S. Coast Survey, are taught by the head of the mathematical department, assisted by those who have had years of instruction and training at West Point and on the Coast Survey. With these facilities, young men can prepare themselves for efficient service on the astronomical parties of the great geodetic surveys of our States and Nation ; and, can also, acquire the nautical astronomy required in navigating a ship.

The attention of those interested in engineering and astronomy, is 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. The Engineering Faculty has been strengthened within the last year, by the accession of Professors Blair and Diehl.

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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 3, 1880:

| | | |
|---|---|---|
| Senior Class | Regulars | 5 |
| | Irregulars | 2 |
| Junior Class | Regulars | 7 |
| | Irregulars | 3 |
| Sophomore Class—Irregulars | | 23 |
| Total | | 40 |

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. I also delivered a course of lectures on the steam engine to the Sophomore (academic) class.

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, laid an accurate base line and completed a trigonometrical survey of the University campus and horticultural grounds. In this trigonometrical frame work they filled the detail topography with the plane-table—plotting in the five-feet contour lines with the greatest accuracy. This system of triangulation 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. He has also assisted in teaching the class in mechanics.

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 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.

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## XVII. SCHOOL OF MILITARY SCIENCE AND TACTICS.

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### PROFESSOR BLAIR.

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It was judged best to make this an optional course, thus putting it on the same footing with the other departments.

For some years past no instruction of this kind had been given, and it was therefore unknown ground to the great mass of students. In spite of this fact, the number enrolled was sixty-four (64).

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-five 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 with a full compliment of officers and non-commissioned officers. 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.

Facilities are afforded for instruction 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.

## REPORT.

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

SIR:—I have the honor to submit herewith my report of the military department for the year ending June 3, 1880.

This department had not been in operation for some years when I was ordered here in September last. There was, therefore, much to be done in the way of preliminary organization, as well as showing the body of students the nature and scope of the work to be done.

The first year's work can hardly be taken as a sample as to numbers or extent.

Aside from the policy of the government in providing for this instruction, the immediate advantages to be derived therefrom are habits of obedience and promptness, and a soldierly bearing. These effects were, I think, apparent in those students who, during the past year, were engaged in this line of work.

I am, sir, very respectfully,

Your obedient servant,

FRANK P. BLAIR,

2d. Lieut. 3rd. U. S. Artillery.

## XVIII. SCHOOL OF ART.

### PROFESSOR DIEHL.

#### FIRST YEAR.

1. Recognition, naming, and representation of all surface-forms by which regular solids are bounded. (2) Laying out of the superficies of solids (development), and folding of the same. (3) Carving of solids out of soft substances. (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 construction. (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:—Herewith, I respectfully submit my first annual report of the Department of Art, for the year ending June 3, 1880.

Total number of students enrolled during the first semester.....181

Total number of students enrolled during the second semester.....141

Total number of students in class at end of second semester.....111

At the end of the first semester there was a falling off of students in whose course drawing was not prescribed. Most of the students who entered upon this work, but little anticipated that its pursuit involved equally as much earnest effort and conscientious labor as does that of any other fruitful study. With few exceptions, the students who are at present engaged in the study, show great interest and do faithful work.

The professional students made marked progress. Besides the classes in Engineering and Pedagogy, a number of Medical students were enrolled. There is not a profession in the pursuit of which a deficiency in form-reading and writing makes itself more felt than medicine.

Every physician of note, with whom I have come in contact, has deplored this deficiency in the most unqualified terms, where it existed. Dr. H——— of St. Louis, asserted that it would be worth thousands of dollars to him, and were he a young man, he would spare no means to attain to proficiency in representing what he sees and knows.

The students in general show as much interest as they do in a work for which they have had little or no preparation, is a source of gratification, and it is sincerely to be hoped that the day is not distant when the minds of our rising generation will be led out from the *common schools* of our State, to a just appreciation of our nature's form-manifestations, and the applications of *these* on the part of science and art, for the increase of our welfare and enjoyment.

Respectfully submitted.

CONRAD DIEHL,

Professor of Art.

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# UNIVERSITY LIBRARY.

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

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

ACCESSIONS FOR 1879-80.

| SOURCE. | B... | P... | SOURCE. | B... | P... |
|---|---|---|---|---|---|
| Agricultural Boards, in ex | ..... | 5 | Columbia Col., in ex | ..... | 1 |
| Angell, J. B | ..... | 1 | Davis, O | 4 | ..... |
| Ark. Ind. Uni., in ex | ..... | 1 | Dimmock, Geo | ..... | 1 |
| Atkinson, W. P | 1 | ..... | Dodge, H. W | ..... | 20 |
| Atlanta Medical Col., in ex | ..... | 1 | Drury Col., in ex | ..... | 1 |
| Barnard's Am. Jr. of Ed | ..... | 1 | Duncan, W. H | ..... | 1 |
| Bates, J. H | ..... | 4 | Exchange of duplicate books | 7 | ..... |
| Bates, Mrs. M. T | ..... | 9 | Emory Col., in ex | ..... | 1 |
| Beria Col., in ex | ..... | 1 | Fulton Synodical Fem.Col.,in ex | ..... | 1 |
| Blackwell, J. S | ..... | 1 | Garrett, P. & Co | ..... | 1 |
| Bliss, P | ..... | 1 | Georgetown Col., in ex | ..... | 1 |
| Bodoin Col., in ex | ..... | 2 | Germania Pub. Co | ..... | 1 |
| Central Col., in ex | ..... | 1 | Graduates,1879(orations& theses) | ..... | 16 |
| Central Univ., in ex | ..... | 1 | Graduates, Agri., 71-79 (theses) | ..... | 42 |
| Chicago Pub. Libr., in ex | ..... | 1 | Gunton, W | 1 | ..... |
| Cincinnati Wesleyan Col., in ex | ..... | 1 | Hahnemann Med. Col., in ex | ..... | 1 |
| Clark, J. B | 1 | ..... | Hall, A | ..... | 1 |
| Cockrell, F. M | 41 | ..... | Hampton Nor.and Ag.Inst., in ex | ..... | 1 |

ACCESSIONS FOR 1879-80.—Continued.

| SOURCE. | B... | P... | SOURCE. | B... | P... |
|---|---|---|---|---|---|
| Hawkins, D. A. | ..... | 1 | Stephens Col., in ex. | ..... | 1 |
| Hayes, Lee | ..... | 2 | Stephens, E. W. | ..... | 2 |
| Hearn, E. B. | ..... | 3 | Thompson, S. | 1 | ..... |
| Henderson, Peter & Co. | ..... | 4 | Tracy, S. M. | 34 | 80 |
| Hillsdale Col., in ex. | .... | 1 | Trinity Col., in ex. | ..... | 1 |
| Hope Col., in ex. | ..... | 3 | Tufts Col., in ex. | ..... | 1 |
| Howard Univ., in ex. | ..... | 1 | Union Col., in ex. | ..... | 1 |
| Hoyne, T. S. | ..... | 1 | Union Literary Society, pur'd | 19 | ..... |
| Husmann, Geo. | ..... | 2 | Union Theo. Sem., in ex. | ..... | 1 |
| Iowa Col., in ex. | ..... | 1 | U. S. Bureau of Ed. | 1 | 9 |
| Johns Hopkins Univ., in ex. | ..... | 3 | " Bureau of Statistics | ..... | 5 |
| Ky. Univ., in ex. | ..... | 1 | " Bureau of Navigation | 1 | ..... |
| King, N. H. and H. A. | 1 | ..... | " Dept. of Agri | 9 | 42 |
| Laboratory, M. S. U. | 36 | ..... | " Dept. of Interior. | 2 | 1 |
| LaFayette Col., in ex. | ..... | 1 | " Dept. of State ..... 30 maps | 1 | ..... |
| Laws. S. S. | ..... | 5 | " Mil. Academy | ..... | 1 |
| Lee, W. H. | 28 | ..... | " Naval Observatory | ..... | 2 |
| McNutt, R. | ..... | 1 | " Patent Office | ..... | 3 |
| Madison Univ., in ex. | ..... | 1 | " Treasury Department | 2 | 10 |
| Mahn, L. H. | ..... | 2 | " War Department | 7 | 4 |
| Maine Col. of Ag., in ex. | ..... | 2 | University of Kansas, in ex. | ..... | 1 |
| Marcotte, Chs. | ..... | 1 | University of Michigan, in ex. | ..... | 2 |
| Maryland State Inst., in ex. | ..... | 1 | University of Miss., in ex | ..... | 1 |
| Miami Univ., in ex. | ..... | 1 | University of North Car., in ex. | ..... | 1 |
| Mich. Agri. Col., in ex. | ..... | 1 | University of Rochester, in ex. | ..... | 1 |
| Missouri Secretary of State. | 8 | ..... | University of the South, in ex. | ..... | 2 |
| Missouri State Bd. of Agri. | 1 | ..... | University of Tennessee, in ex. | ..... | 1 |
| Nipher, F. E. | ..... | 1 | University of Virginia, in ex. | ..... | 2 |
| Olivet Col., in ex. | ..... | 1 | University of Vermont, in ex. | ..... | 1 |
| Ontario Agri. Col., in ex. | 1 | ..... | University of Wisconsin, in ex. | ..... | 1 |
| Porter, Pres. Union Col. | .... | 1 | Unknown | ..... | 4 |
| Pratt, G. C. | 1 | 1 | Vanderbilt Univ., in ex. | ..... | 1 |
| Purchased | 16 | ..... | Vt. State Libr., in ex. | 2 | 3 |
| Rumbold, G. O. | .... | 1 | Vest, G. G. | 4 | 1 |
| St. Charles Col., Md., in ex. | ..... | 1 | Walker, J. H. | ..... | 1 |
| St. Johns Col., Md., in ex. | ..... | 1 | Walls, Al. | ..... | 3 |
| St. Joseph Fem. Col., in ex. | ..... | 1 | Washington Univ., in ex. | ..... | 2 |
| St. Louis Merc. Libr., in ex. | ..... | 1 | Wesleyan Univ., in ex. | ..... | 2 |
| St. Louis Pub. Sch. Libr., in ex. | ..... | 3 | Westminster Col., in ex. | ..... | 1 |
| St. Louis University, in ex. | ..... | 2 | Wilder, D. W. | 1 | ..... |
| Schweitzer, P. | ..... | 4 | Wilkee, W. B. Y. | ..... | 1 |
| Scio Col., in ex. | ..... | 1 | William Jewell Col., in ex. | ..... | 1 |
| Shairp, Pres. | ..... | 1 | Wilson, G. | ..... | 1 |
| Sheldon & Co. | 1 | ..... | Winchell, N. H. | ..... | 1 |
| Smithsonian Inst., .....2 maps | ..... | 13 | Worcester Free Inst., in ex. | ..... | 1 |
| Southeast Mo. Nor. Sch., in ex. | ..... | 2 | | | |
| Southwest Presby. Univ., in ex. | ..... | 1 | Total .....32 maps | 231 | 403 |

In addition to the donations already mentioned, I wish to report periodicals presented by Miss G. C. Bibb, Dr. J. H. Duncan, Prof. P. Schweitzer, Prof. S. M. Tracy, and Prof. A. F. Fleet; also, by Prof. J. S. Blackwell, 250 copies of "Observations on the Hebrew Grammar of Dr. Meyrowitz," for exchange with other Institutions and Libraries; by Dr. S. S. Laws, 250 copies Dr. Meyrowitz's "Hebrew Grammar," for exchange, and 24 copies of "Missouri University Lectures," 1879—4 copies for the Libraries of the University, the remaining 20 to be sold for the benefit of the Library; by the Missouri State Board of Agriculture, 250 copies of the "Report of 1878," for

exchange; by Dr. S. H. Sonneschein, of St. Louis, a colossal bust of Ben. Franklin; and by Mr. Geo. W. Samuel, of St. Joseph, a portrait of Judge David Todd—the first portrait painted by the late Geo. C. Bingham.

### Periodicals for the Current Year.

*Acad. of Sci. of St. Louis, Transactions.
*African Repository.
Albany Law Journal.
*American Baptist Flag.
American Journal of Education.
American Journal of Science and Art.
American Journal of the Medical Sciences.
*American Law Register.
American Law Review.
American Library Journal.
American Naturalist.
*Ashland Bugle,
Atlantic Monthly.
Blackwood.
*Boone County Sentinel.
British Quarterly.
*Bulletin of the Ess. Inst.
*Canton Press.
*Carrollton Democrat.
*Carthage Banner.
*Central Baptist.
Chemical News.
*Christian Statesman.
*Chromatic Art Magazine.
Coleman's Rural World.
*Columbia Missouri Herald.
†Congressional Record.
†Detroit Free Press.
†Druggist's Circular.
Edinburgh Review.
*Gallatin Democrat.
Harpers' Monthly.
*Independence Sentinel.
*Industrial World and Com. Ad.
Journal of Agriculture and Farmer.
Journal of Speculative Philosophy.
*Journal of the Telegraph.
*Kentucky Live Stock Journal.
*Lexington Register.
†Lexington Intelligencer.
*Library Docket.
*Linton Medical Journal.
London Quarterly.
London Weekly Times.
Magazine of Art.
†Manufacturers' Review with Sup.
Medical News and Library.
*Missouri Statesman.
*Missouri Bar.
Moore's Rural New Yorker.
†Nation, The.
New England Journal of Education.
*N. Y. Ecl. Med. and Sur. Journal.
North American Review.
*Official Gazette, U. S. Patent Office.
*Peoples Tribune.
Popular Science Monthly.
*Practical Farmer.
*Prairie Farmer.
†Princeton Review.
*Richmond Conservator.
*Rocheport Commercial.
Saturday Magazine.
*Saline County Progress.
*Science Observer.
Scribner.
*St. Joe. Daily Chronicle.
*St. Joe. Daily Herald.
†St. Louis Commercial Gazette.
St. Louis Daily Times.
*St. Louis Medical and Sur. Journal.
*St. Louis Post-Dispatch.
Title Slip Register.
*Troy Free Press.
*University Missourian.
*University Magazine.
*Wallace's Monthly.
*Weekly Bulletin, Y. M. C. A., Kansas City.
*Western, The.
*Western Agriculturist.
*Western Stock Journal and Farmer.
Westminster Review.
Westliche Post.
Zeitschrift fur Analy. Chem.

*Presented by publishers. †Presented by individuals.

## Library Matter.

| | Books. | Pam. |
|---|---|---|
| University Library | 10,346 | 12,364 |
| University Library accessions, 1879–80 | 107* 212 | 403 |
| Athenæan Society Library | 302 | |
| Athenæan Society Library, accessions, 1879–80 | 39 | |
| Union Literary Society Library | 277 | |
| Union Literary Society Library, accessions, 1879–80 | 69 | |
| Columbia Library | 809 | |
| Total in General Library | 12,161 | 12,767 |

The * indicates additions that were made by exchange with the two society libraries. By this exchange the society libraries have been made better, although the number of books has been decreased. The policy is to make the society libraries collections for reading. Books from these libraries are permitted to be withdrawn by members of the societies. They are used in the reading room as the books of the University Library.

The Columbia Library is all that remains of a collection formerly made for the citizens of Columbia. The class of books is good. Life members of the association, and other persons who pay the annual fee, are permitted to draw books from this collection, and use the reading room as the students of the University. A year's experience indicates that this plan will work well. An Author Catalogue has been made and is ready for publication. A Subject Catalogue has been made on the plan published by Mr. M. Dewey. Author and Subject Catalogues for the society libraries are in progress, on the plan adopted for the Columbia Library.

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 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 the Faculty | 360 | |
| Drawn by members of the Athenæan Society | 177 | |
| Drawn by members of the Union Literary Society | 208 | |
| Drawn by members of the Columbia Library | 127 | |
| Drawn for use in Reading Room | 14,055 | |
| | | 14,927 |

COMPARATIVE CIRCULATION OF BOOKS.

| Years | 1874–5 | 1875–6 | 1876–7 | 1877–8 | 1878–9 | 1879–80 |
|---|---|---|---|---|---|---|
| Summer Vacations | 250 | 281 | 419 | 282* | 442 | 980 |
| School Terms | 9,780 | 14,635 | 14,499 | 15,887 | 15,887 | 13,947 |
| Totals | 10,030 | 14,916 | 14,918 | 16,169 | 15,022 | 14,927 |
| Students Enrolled | 390 | 321 | 399 | 418 | 443 | 484 |

*Library closed for six weeks.

Note, that during the years 1878–9 and 1879–80 there was a decrease in the use of books over 1877–8. This was due to the fact that more class-room work was required than in 1877–8 and previously. An increase or decrease of work required of Professors or students is felt in the Library, by the number of books read. Very little course-reading is being done. Students, especially those in the higher classes, have too little time for reading.

It is hoped that the appropriation to the Library will be increased. At least $2.000 a year should be set apart for the purchase of books. Professors and students are constantly checked in their work by lack of material which the Library should supply.

The insecurity of the Library, in case of fire, and the lack of room, demand attention.

Respectfully,
SCOTT HAYES,
Librarian.

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# UNIVERSITY ANNOUNCEMENTS.

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SYNCHRONISTIC TABLE.

(See pages 126–7).

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. *Artium Baccalaureus-a.* A. B. | Hour..... | 2. COURSE IN SCIENCE. *Scientiae Baccalaureus-a.* S. B. | Hour..... |
|---|---|---|---|---|
| SIXTH YEAR. (*Senior.*) TWELFTH SEMESTER. | Geology and Phys. and Pol. Geography | II. | Geology and Phys. and Pol. Geography | II. |
| | Metaphysics—Ethics & Ontology | I. | Metaphysics—Ethics & Ontology | I. |
| ELEVENTH SEMESTER. | German & Mod. European Hist. | VI. | Laboratory—Quantitative Anal. | |
| | ½ Anglo Saxon, Theory of Rhet. and Resumé | IV. | Astronomy (completed) | V. |
| | ½ Anct. and Oriental Hist. and Semitic Literature | IV. | Mineralogy and Paleontology | II. |
| | Mineralogy and Paleontology | II. | Metaphysics—Psychol. & Logic. | I. |
| | Metaphysics—Psychol. & Logic. | I. | | |
| FIFTH YEAR. (*Junior.*) TENTH SEMESTER. | French and Med'l History | V. | Laboratory—Qualitative Anal. | |
| | Latin and Greek | IV. | Chemistry | III. |
| | Chemistry and Laboratory | III. | Mechanics | II. |
| | Political Economy | I. | Political Economy | I. |
| | | | Art (Tuesday and Friday) | IV. |
| NINTH SEMESTER. | Zoölogy, Hu. Anat. & Physiol. | VI. | Zoölogy, Hu. Anat. & Physiol. | VI. |
| | Latin and Greek | IV. | Chemistry and Laboratory | III. |
| | Chemistry and Laboratory | III. | Calculus | II. |
| | English Literature | I. | Eng. and Amer. Literature | I. |
| FOURTH YEAR. (*Sophomore.*) EIGHTH SEMESTER. | Latin and Greek | IV. | Entomology & Econ. Botany | IV. |
| | Polit. Science | III. | Polit. Science | III. |
| | Physics | II. | Physics | II. |
| | Analytical Geometry | I. | Analytical Geometry | I. |
| SEVENTH SEMESTER. | Latin and Greek | IV. | English History | III. |
| | English History | III. | Physics | II. |
| | Physics | II. | Algebra (completed) | I. |
| | Algebra (completed) | I. | Art (Wednesday) | VI. |
| | Art (Tuesday and Friday) | V. | | |
| THIRD YEAR. (*Freshman.*) SIXTH SEMESTER. | Spherical Trig. & Sph. Astron. | IV. | German | VI. |
| | Latin | III. | Spherical Trig. & Sph. Astron. | IV. |
| | Greek | II. | Elocution and Themes | II. |
| | Botany | I. | Botany | I. |
| | Art (Tuesday and Friday) | VI. | Art (Tuesday and Friday) | V. |
| FIFTH SEMESTER. | Plane Trigonometry and Solid Geometry | IV. | French | V. |
| | Latin | III. | Plane Trigonometry and Solid Geometry | IV. |
| | U. S. History | II. | U. S. History | II. |
| | Greek | I. | German | I. |
| | Art (Tuesday and Friday) | VI. | Art (Tuesday and Friday) | VI. |
| SECOND YEAR. FOURTH SEMESTER. | Latin | VI. | French | V. |
| | Analysis and Rhetoric | V. | Plane Geometry | IV. |
| | Plane Geometry | IV. | German | II. |
| | Greek | III. | Art (Tuesday and Friday) | III. |
| | Art (Tuesday and Friday) | II. | | |
| THIRD SEMESTER. | Elementary Algebra | IV. | German | VI. |
| | Greek | III. | Analysis and Rhetoric | V. |
| | Latin | I. | Elementary Algebra | IV. |
| | Art (Tuesday and Friday) | II. | Polit. and Phys. Geography | III. |
| | | | Art. (Tuesday and Friday) | II. |
| FIRST YEAR. SECOND SEMESTER. | Greek | VI. | English Grammar | VI. |
| | Arithmetic and Book-keeping* | III. | Arithmetic and Book-keeping* | III. |
| | Latin | II. | Art (Tuesday and Friday) | I. |
| FIRST SEMESTER. | Language Lessons & Exercises | VI. | Language Lessons & Exercises | VI. |
| | Arithmetic | III. | Arithmetic | III. |
| | Latin | II. | Latin | II. |

*Book-keeping twice a week.

# SYNCHRONISTIC CURRICULA.

| 3. COURSE IN LETTERS. *Literarum Baccalaureus-a.* L. B. | Hour..... |
|---|---|
| Geology and Phys. and Pol. Geography | II. |
| Metaphysics—Ethics & Ontology | I. |
| ½ Anct. and Oriental Hist. and Semitic Literature | VI. |
| ½ Anglo Saxon, Theory of Rhet. and Resumé | IV. |
| Mineralogy and Paleontology | II. |
| Metaphysics—Psychol. & Logic | I. |
| Semitic Languages | IV. |
| Entomology & Econ. Botany | IV. |
| Chemistry and Laboratory | III. |
| Political Economy | I. |
| Zoölogy, Hu. Anat. & Physiol. | VI. |
| French | V. |
| Chemistry and Laboratory | III. |
| Eng. and Amer. Literature | I. |
| French | V. |
| Polit. Science & Eng. & U. S. Constitution | III. |
| Physics | II. |
| Analytical Geometry | I. |
| Semitic Languages ½ (alternate with 11th Semester) | IV. |
| English History | III. |
| Physics | II. |
| Algebra (completed) | I. |
| Art (Tuesday and Friday) | V. |
| Spherical Trig. & Sph. Astron. | IV. |
| Latin | III. |
| Elocution and Themes | II. |
| Botany | I. |
| Art (Tuesday and Friday) | VI. |
| Plane Trigonometry and Solid Geometry | IV. |
| Latin | III. |
| U. S. History | II. |
| German | I. |
| Art (Tuesday and Friday) | VI. |
| Latin | VI. |
| Analysis and Rhetoric (cont'd) | V. |
| Plane Geometry | IV. |
| German | II. |
| Art (Tuesday and Friday) | III. |
| German | VI. |
| Analysis and Rhetoric | V. |
| Elementary Algebra | IV. |
| Latin | I. |
| Art (Tuesday and Friday) | II. |
| English Grammar | VI. |
| Arithmetic and Book-keeping* | III. |
| Latin | II. |
| Language Lessons & Exercises | VI. |
| Arithmetic | III. |
| Latin | II. |

| 4. GIRLS COURSE IN ARTS. *Artium Domesticarum Baccalaurea.* A. D. B. | Hour..... |
|---|---|
| Art (Tuesday) | IV. |
| Literary Criticism (Tues. and Thurs.), Kindergarden Training and Home Education (Sat.) | III. |
| Geology and Physical Geography—General Review of the Natural History Course | II. |
| Political Economy | I. |
| Art (Wednesday) | VI. |
| Ancient and Oriental History & Semitic Literature ½, Anglo Saxon, Theory of Rhetoric and Resumé of the English Course ½ | IV. |
| Greek Life, Ancient and Modern (Saturday) | II. |
| English Literature | I. |
| Domestic Chemistry and Household Economy | |
| Art (Tues. & Fri.,) Book-keeping (Wed., Thurs & Sat.) | V. |
| Zoölogy, Ent. and Econ. Botany and Floriculture | IV. |
| English and U. S. Conts. and Political Science | III. |
| Vocal Music | VII. |
| Art | V. |
| Domestic Chemistry & Economy | |
| English History | III. |
| Mineralogy ½ | II. |
| Metaphysics, Psychol. & Logic | I. |
| Music | VII. |
| Art (Tuesday and Friday) | VI. |
| French | V. |
| Chemistry and Laboratory work | III. |
| Elocution & Themes (Wed. & Thurs) | II. |
| Metaphysics, Ethics & Nat. Theology | I. |
| Vocal Music | VII. |
| German | IV. |
| Chemistry | III. |
| United States History | II. |
| Art (Tuesday and Friday) | I. |
| Latin | VI. |
| Rhetoric | V. |
| Spherical Trig. and Sph. Astronomy | IV. |
| Art (Tues. and Fri.), Italian (Wed., Thurs. and Sat.) | I. |
| Vocal Music | VII. |
| Art (Tuesday and Friday) | VI. |
| Plane Trig. and Solid Geometry | IV. |
| Physics | II. |
| Latin | I. |
| Vocal Music | VII. |
| Composition and Elocution | V. |
| Algebra Completed, Plane Geometry | IV. |
| Art (Tuesday and Friday) | III. |
| Latin | II. |
| Botany | I. |
| Book-keeping | |
| Vocal Music | VII. |
| Anat., Physiol. and Hygiene | VI. |
| Elementary Algebra | IV. |
| Art (Tuesday and Friday) | III. |
| Latin | II. |
| Calisthenics ½ IV & | VII. |
| Landscape Gardening and Horticulture ½ | VII. |
| English Grammar | VI. |
| Art (Tuesday and Friday) | III. |
| Arithmetic (2nd Division) | I. |
| Calisthenics ½ IV & | VII. |
| Language Lessons and Exercises | VI. |
| Geography | III. |
| Art (Tuesday and Friday) | II. |
| Arithmetic, (2nd Division) | I. |

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 re-shaped 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 re-cast, and the Engineering Department is complete.

10. *a.* The synchronistic curricula (pp. 126-7), 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. 9.) 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.

## 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 of 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 descrip-

tion 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 whitling, 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 dismission who is under a charge, or who has failed to pay all University dues, or who has not returned all library books.

7. All those things are forbidden which tend to deteriorate moral character, to prevent intellectual and moral advancement—in short, all those irregular, wicked and immoral practices and habits which would be forbidden in good and cultivated families, and which tend to prevent preparation and training for good citizenship.

☞ 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 purposes 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 cases 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 th eseats, 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 uncancelled, after an excuse has been called for, and no satisfactory excuse has been given.

*c.* Those uncancelled, 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; after absences of the third kind shall be reported and recorded as *undetermined absence marks*, and with the probable reason for the same; and any absence marks excused after having been thus reported, shall be particularly distinguished, so as to be checked off and not entered twice.

6. All absence marks, of whatever kind, 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.

Undetermined absences, which are subsequently excused, shall be reported by the Professors at the next Faculty meeting.

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 133.)

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.

## Note 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. 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 138 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.

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 University,) two Semesters $8.50 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 | | |
| Total | $12 00 | One student one-half | 6 00 |
| Fuel and light | | | 5 00 |
| Initiation fee of club (life membership) | | | 4 00 |
| Board and washing per week $1.50 (forty weeks) | | | 60 00 |
| Total expenses for school year | | | $92 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 where students succeed on less, but economy itself would dictate the above amount.

Although the club buildings are under the immediate control of the University management, as is also the appointment of the matron, the entire business of the club is conducted by the members themselves, they being formed for the purpose into an organization which has, in addition to a commissary, all the officers necessary to a deliberative body.

The present system, as perfected in the last two years, has solved the question of cheap boarding, and at the same time has given the club the advantages which were formerly found only in private families.

J. H. DRUMMOND.

Each student furnishes his own room, which may be done at cheap rates. If convenient, he may bring 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 comtemplation 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 Rollin's 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 9 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, declamation, 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 59.)

### 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 interests 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., Ag. 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 these several departments.

## 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.

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, comporting with those made for the young men; and hence, it becomes the plain practical question: Whether the State is likely to provide such advantages separately? As there is no likelihood of this being done, we are shut up to the alternative of co-education in our State institutions, unless experience be adverse to the policy of it. However, as a matter of fact, experience favors it—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 58.)

## 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 coöperation 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 W. H. Lackland, Class '54, of St. Louis.

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, 2nd 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.

## 1880.

| | |
|---|---|
| September 13, Monday | All Academic and Prof. Schools open. |
| November 13, Saturday | Athenæan Society open session. |
| November 27, Saturday | Union Literary Society open session. |
| December 18, Saturday | Close for Holidays. |

## 1881.

| | |
|---|---|
| January 4, Tuesday | Reopen. |
| January 18 to January 22 | Examination at the close of 1st Semester. |
| January 25, Tuesday | Second Semester begins. |
| February 19, Saturday | Exhibition of Young Ladies' Society. |
| February 26, Saturday | Societies appoint Prize Declaimers. |
| March 5, Saturday | Inter-Society Contest. |
| March 26, Saturday | Law School closes. |
| April 16, Saturday | Prize Declamation Contest. |
| April 23, Saturday | Contest for Stephens Medal. |
| May 7, Saturday | Exhibition of Athenæan Society. |
| May 21, Saturday | Exhibition of Union Literary Society. |
| May 29, Sunday | Baccalaureate Discourse. |
| May 31, Tuesday | Curators meet. |
| May 31, Tuesday | Address before Societies. |
| June 1, Wednesday | Oration before Alumni. |
| June 2, Thursday | Commencement. |

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THIRTY-EIGHTH ANNUAL

# COMMENCEMENT,

MISSOURI STATE UNIVERSITY.

*Thursday Morning, June 3d, 1880.*

# Programme.

MUSIC—PRAYER—MUSIC.

Oration.....Freedom of Thought,
PHILIP BRUTON, A. B.

Oration.....Woman,
H. B. HILGEMAN, PH. B.

MUSIC.

Oration.....Through Night to Light,
C. L. DIVEN, A. B.

Oration and Valedictory.....Erin, the Poland of Every Age.
W. G. LOVELACE, A. B.

MUSIC.

DELIVERY OF DIPLOMAS AND PRIZES.

Prize in Oratory, – – – – Stephens Medal,
H. B. HILGEMAN, PH. B.

Prize Essay on Steam Engine – – For '78-9,
T. C. THOMAS, Top'l Eng'r.

Prize Essay on Pruning, – – Swallow Prize,
JAMES H. WALKER.

MUSIC.

BENEDICTION.

# GRADUATES OF 1880.

## ACADEMIC COLLEGE.

Clarence Leslie Diven, A. B. - - - - - - - 9.48
William Green Lovelace, A. B. - - - - - - 9.34
Philip Bruton, A. B. - - - - - - - - 9.21
William McGuffey Hoge, A. B. - - - - - - 9.19
George Washington Johnston, A. B. - - - - - - 9.17
Edmund Wilkes, A. B. - - - - - - - 8.73
Josie Bacon Latham, A. B. - - - - - - - 8.63
Henry Bernard Hilgeman, Ph. B. - - - - - 8.63
William Ferguson Williamson, S. B. - - - - - 8.56
William Mosby LaForce, A. B. - - - - - 8.50
Joseph Hudson Drummond, A. B. - - - - - - 8.48
James Amber Jones, A. B. - - - - - - 8.33
Charles Kinchen Sitton, Ph. B. - - - - - - 8.30
Kate Hayes, A. B. - - - - - - - - 8.21
Charles Emmett Yeater, A. B. - - - - - - 8.20
Jacob Adolphus Charles Freund, Ph. B. - - - - 7.22

## LAW COLLEGE, (Degree of LL. B.)

William T. Pigott, - - - 9.66. | Frederick Henry Austin, - - 8.58.
Joseph James Russell, - - - 9.35. | Walter D. Penney, - - - 8.43.
Jesse C. Sheppard, - - - - 8.98. | William A. Bowser, - - - 7.96.
Robert P. Wilson, - - - - 8.98. | James L. Sheetz, - - - - 7.69.
John Gagnon, - - - - - - 8.89. | Uriah G. Phetzing, - - - 7.59.
Francis M. Smith, - - - - 8.72. | Thomas T. Loy, - - - - 7.50.

The degree of LL.B. was also conferred upon Prof. Francis P. Blair of the U. S. Army.

## ENGINEERING COLLEGE.

Evan Deaver Green, C. E. | Hiram Phillips, Top'l. Eng'r.
Charles Lewis Harrison, Top'l. Eng'r, C. E. | Joseph Leslie Phillips, Top'l. Eng'r.
Thomas Clinton Thomas, Top'l. Eng. Lee Hayes, Top'l. Eng'r. '79., C. E.

## SCHOOL OF MINES and METALLURGY, ROLLA.

L. X. Smith, M. E. | A. C. Carson, M. E.

## NORMAL COLLEGE.

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

Henry B. Hilgeman, Ph. B. '80, - - - - - - - 8.73.
William M. LaForce, A. B. '80, - - - - - - - 8.56.
Wm. 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 Gillaspy, - - - - - 9.31. | Andrew Reason Lyon, - - 8.02.
William Albert Taylor, - - 8.86. | Noland Taylor, - - - - - 7.61.
David Calbreath, - - - - 8.53. | George Henry Nichols, - - 7.50.
Jennie Cleland Nattrass, - - 8.26. | Lewis P. Starke, (Class of 1878.)

## MASTER'S DEGREES.

A. M.

Alexander E. Douglass, A. B. '77. | Fielding W. Houchens, A. B. '77.
Joseph T. Ridgway, A. B. '74.

S. M.

O. L. Houts, S. B. '70. | Eli Penter, S. B. '70.
Joseph F. Robinson, S. B. '70. | Ida D. Aldrich, S. B., D. B. '76.
George E. Flood, S. B. '73, Ag. B. '73, Ag. M. '76.

L. M.

Robert P. Boulton, L. B., '77.

## *GRADUATES IN THE MEDICAL DEPARTMENT.*

The following is the report of the Board of Examiners:

*To the Dean of the Medical Department of the University of the State of Missouri:*

We, your committee appointed by the Board of Curators, to examine the Senior class in your department, do hereby certify that upon critical examination of said class in the various branches embraced in your curriculum of study find the following gentlemen entitled to the degree of Doctor of Medicine:

Justus Ohage, St. Charles Co., Mo.....98.7
Henry Douglass Grady, Miami, Mo.....97.4
Millard Payne Sexton, Columbia, Mo.....94.1
Clinton Henry Lubbock, San Jose, Cal.....94.0
George Elias Muns, Montgomery Co., Mo.....91.1
William Maurice Moore, Paris, Texas.....90.1
Bennett Hilisman Clark, Jr., Hallsville, Mo.....90.0
Benjamin Franklin Carr, Mirabile, Mo.....84.7
Charles William Chastain, Marshall, Mo.....83.3

Respectfully,

J. W. PRYOR, M. D., Palmyra, Mo.
JNO. W. TRADER, M. D., Sedalia, Mo.
PINKNEY FRENCH, M. D., Mexico, Mo.
Board Medical Examiners.

P. S. Dr. Bryant, a member of the Board, was unable to be present owing to illness of family.

The above grade is that given by the Examining Board, showing the average in the oral examination conducted by them. The following is the average grade obtained in written examinations before the members of the Faculty during the session: H. D. Grady, 95.05; J. Ohage, 93.6; M. P. Sexton, 92.2; G. E. Muns, 91.6; B. H. Clark, 87; C. H. Lubbock, 86.6; C. W. Chastain, 86; B. F. Carr, 86; W. M. Moore, 85.1.

Valedictorian, G. E. Muns.

ANNUAL EXHIBITION

OF THE

# Union Literary Society,

University Chapel,

**Saturday Evening, May 8, 1880.**

## PROGRAMME.

Music—Prayer—Music.

*Declamation* . . . . How the Old Horse Won the Bet,
*J. B. McBaine.*

*Essay* . . . . . Genius in Discovery and Invention,
*F. G. Ferris.*

Music.

*Debate*—Question—Resolved, "That Will and not Circumstances Make the Man."

*Aff.—A. R. Lyon.* *Neg.—R. Gillaspy.*

*Oration* . . . . . Why do Nations Fall?
*G. A. Theilmann.*

Music.

*Paper* . . . . . "Union Literary Bombshell."
*T. S. Huffaker.* } Editors.
*Ed. Wilkes.* }

*Dramatic Performance* . . Sam Weller's Wallentine,
*Ed. Wilkes and Frank Hayes.*

Herald Print.


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