REPORT

OF

THE PROVOST

OF THE

UNIVERSITY OF PENNSYLVANIA

From October, 1892, to June, 1894.

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REPORT OF THE PROVOST
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From October 1st, 1892, to June, 1894.

TO THE HONORABLE BOARD OF TRUSTEES.

GENTLEMEN:—I have the honor to submit to you the following report of the operations of the University from October 1, 1892, to June, 1894. I shall be pardoned for dwelling more fully upon certain topics, not only on account of their importance, but because this is the last report I shall have the occasion to prepare. It is a subject of profound thankfulness that at the close of my period of service in the responsible office to which your Board invited me in December, 1880, I am able to point to a high state of advancement and prosperity of our well-beloved University. It is indeed the rapidity of growth and expansion of the University, and the successful accomplishment of various comprehensive measures, which, as explained in my letter of resignation (submitted to your Board on April 23, and reprinted as Appendix No. I of this report), have made me feel justified in withdrawing from a post of so much usefulness.

Since the date of my last report the University has met with two serious losses by death. Colonel Joseph D. Potts had been for some time unable to attend the meetings of the Board on account of impaired health, and when your Board voted him a leave of absence, it was with the hope that he might return with renewed vigor to the post which he so ably filled. This hope was doomed to disappointment. The resolutions of regret and sympathy, which you adopted December 5, 1893, fittingly express the appreciation in which his seven years of wise counsel and faithful and generous service on your Board were held by his associates. The large plans he had formed for the development of certain branches of the University, frustrated unhappily by his decease, bore testimony to his eminent sagacity, his wise
liberality, and his genuine devotion to the cause of higher education.

Professor Oswald Seidensticker departed this life, after a brief illness, on January 10, 1894. For years he had been in the service of the University, and his profound and varied learning, his fidelity to duty, and the beauty of his modest and unassuming character, had won for him the highest regard and warm affection not only of his colleagues and pupils, but of the community at large. Let it not be forgotten that the valuable acquisition of the Library of German Literature was not only due to the personal efforts of this earnest teacher, but was also a testimonial to the esteem in which his zeal and fidelity were held.

The changes in the teaching force are noted in Appendix No. II.

It has been a subject of frequent comment, and of occasional criticism, that the creation of new departments and the establishment of new chairs have been at a rapid rate during the past thirteen years. This expansion has, however, proceeded upon a definite plan, by which several loosely associated schools have been gradually approximated and ultimately combined, with additional departments of recent creation, in harmonious and equitable co-operation. It has been clearly pointed out by Professor Thorpe in the important memorial volume recently published by the National Government that this new development is the legitimate outcome of the broad basis originally secured for the University by the philosophical Franklin. Historical research (carefully verified by a committee appointed by your Board) has shown that the foundation of the University of Pennsylvania is to be referred to the year 1740, thus making it the fourth in point of age among the educational institutions of this country. From its earliest days it has been honorably distinguished by the origination of important educational measures subsequently adopted by sister institutions. It seems natural, therefore, to find that the title of University was first used in America in 1779, in connection with this institution. In the form it has reached of recent years under your progressive policy, it represents, with one serious break in the circle, the rounded and complete form of the typical American University. The organic connection so happily effected in 1888 with the public school system of Philadelphia, by the establishment of fifty prize scholarships; the thoroughly reorganized College Department, fully equipped in all
branches, and surrounded with ample territory for the construction of dormitories, and for the cultivation of athletic exercises and sports; the equitable provision for the admission of women to the highest faculty* and degree on the same conditions as men, without involving the necessity of co-education in the undergraduate classes; the group of professional schools organically connected with the College Department and both giving to and receiving strength from the latter, though each possessing its independent establishment and individuality, its honorable traditions and its own special line of development; and finally the comprehensive Faculty of Philosophy crowning the entire structure, and inviting earnest students to advanced work and original investigation: these are the large features of an academic plan, the development of which may be confidently entrusted to the future.

The obvious point of incompleteness is the absence of dormitories. I have taken such frequent opportunities of urging the absolute necessity of dormitory life as an element in a complete University that I must limit myself to an expression of satisfaction that at last this necessity is clearly recognized on all sides. Students will not be required to live in dormitories, but until the opportunity is afforded to those students, and they constitute a considerable proportion of the student class, for whom such residence is desirable, Philadelphia will continue to suffer from the diversion of important clients, and the University will continue devoid of a truly vital element of University life. With the ample space now at your disposal for their location, the financial arrangements will surely be found easy, since here as elsewhere, the funds so invested will be found permanently productive. Just as the University needs the great libraries and museums and the costly equipment of special laboratories to foster advanced study and original research; just as it needs the aid of University Extension and of other allies by which the mass of the community may be reached, so that the University shall do its large share in developing civic character, so does the College Department at least, demand a well-organized dormitory system where judicious influence shall work for the development of individual character. After the dormitories will naturally follow the Central Dining

*The resolution of your Board opening the Faculty of Philosophy to women, taken in 1891, was the inauguration of a policy which has already been followed by other leading institutions.
Hall; the Students' Hall for social intercourse and the numerous agencies of the daily life of a great body of students; the general Gymnasium in connection with Franklin Field; the general University Chapel. The proximity of the University to the fine auditorium of the Academy of Music seems to postpone to a more remote date the construction of a large hall for Commencement Exercises and other public functions.

The numerous demonstrations your Board has given of the possibility of allowing considerable independence to organizations, which are nevertheless integral parts of the University, indicate clearly that the University has entered upon a career of growth, the future extent of which is practically unlimited.

It is to be hoped that the success which has attended the establishment of the Graduate Department for women, with its own Board of Managers, and its Hall of Residence, generously presented by Colonel J. R. Bennett, will be followed speedily by the adequate endowment of a College for Women, in which may be provided a complete curriculum. Barnard College in connection with Columbia, is a stimulating example of the admirable results that would follow such a foundation; while the more recent establishment of Radcliffe College at Harvard, attended as it has been with a serious loss to Philadelphia in the decision of Miss Irwin to accept its Deanship, must surely awaken the friends of the Higher Education of women here to earnest efforts to provide larger facilities in connection with our University.

It can scarce be doubted that there will soon follow in America, associated with such of the leading universities as are suitably conditioned, the development of a system of colleges in the universities resembling more or less the type presented by Oxford and Cambridge. Our University system is exhibiting so much flexibility and strength, and the broad University idea is becoming so firmly fixed, that no retrograde tendency need be feared from the admission to the University system of separate colleges, with independent tutorial or even professorial staff. The immense aggregations of young students in the undergraduate classes of a great University, seem to call for more definite organization and supervision than is apparently to be expected from the present academic and dormitory system. The large power retained by the governing board of an American University—as notably in your own case; the high disciplinary authority entrusted to the deans of the several great departments; the
rigid educational standard sure to be maintained by the Faculty of Philosophy and the University Council, would seem to minimize, or indeed to wholly obviate here, the dangers which have called for such extensive reforms at the English universities.

It is evident that the appearance of this comprehensive policy and spirit of administration will be the strongest possible inducement to generously disposed persons, to attach their foundations to old and vigorous institutions instead of calling into existence new establishments whose installation is prodigiously expensive, and whose destiny is uncertain even when hedged in with the shrewdest legal provisions.

It is with especial satisfaction that in this connection, I report the completion and formal opening on May 21, 1894, of the Wistar Institute of Anatomy and Biology. The amount already provided by the founder, General Isaac Jones Wistar, is large, about $265,000; it is his intention to increase this materially in the future. But it should be recognized that the result already accomplished by this benefaction could not have been secured within this generation, if at all, by even a much larger sum, if applied to the creation of a wholly independent institution. The University ceded to the Wistar Institute a large and very valuable piece of land as a site, and the Medical Faculty transferred to it the extensive Wistar and Horner Museum, the oldest and most interesting historically of anatomical collections in this country. A magnificent museum building has been constructed; the collection has been installed; important gifts of other congenial collections have already been received; and notably one of great value from Dr. Horace Jayne; the American Anthropometric Society has transferred its collections and its headquarters from the University to the Institute; a Society of Anatomy and Biology will begin its regular meetings this fall; original research and advanced instruction are in operation. A great monument has been created to the first eminent anatomist of America as well as to the munificent founder of the Institute; the life of a great University has been quickened and enriched; immense reciprocal advantages have been secured for the Institute. Yet this Institute, though legally and financially a creation utterly distinct from the University, and with its autonomy guarded rigidly, is administered by a board of nine members, of whom six are appointed annually by the Trustees of the University. It is safe to predict a future of peculiar usefulness for this foundation.
It is to be hoped that its example will impress itself on many who, in seeking for the safest and best mode of accomplishing specific results with their wealth might otherwise have overlooked the possibility of securing, in close affiliation with some existing institution of large resources and of high repute, a foundation whose individual memorial character, whose exact definiteness of purpose, and whose strict financial independence may be safeguarded, as is well-nigh impossible, and certainly far more costly when attempted in the form of a wholly new creation. The details of this foundation are fully set forth in a pamphlet, which includes also the addresses delivered by the Provost, by Professor William Osler of Johns Hopkins, and by Dr. Harrison Allen, the Director of the Institute. The work of the Institute will not be limited to the extension of the great collections already entrusted to it. Ample facilities are provided for anatomical and biological investigations; and instruction will be given to those who design to pursue advanced work in these directions. It is proposed to organize a Biological Association which shall hold regular scientific meetings. Its Journal of Transactions will be published as well as the results of investigations conducted in the Institute. It is easy to see what a magnificent addition this is to the resources, not of the University alone, but of the entire country; and what an incentive it must prove to the acquisition of analogous foundations for advanced work in connection with each great branch of science.

By ordinance approved March 30, 1894, the city authorities transferred in trust to the University a tract of land of more than eight acres, which extends the University domain to the southeast. The conditions attached to this trust are that, within five years from the above date, this tract shall be laid out as a park, and that there shall be established upon it a botanic garden and a museum building. The exact language of the ordinance will be found in Appendix No. III. It speaks eloquently for the dignity and importance of true University work in this city, that this ordinance was passed with practical unanimity by both branches of Councils, and that the Mayor made the act of signing it the occasion of a noteworthy utterance as to the generous policy which should govern the city in all her relations to the University. The acquisition of this valuable tract of land is another and highly important step in the realization of a plan which I had the honor of submitting to you more than twenty-two years ago and which has been
unremittingly pursued until now it is practically accomplished.*

It secures a compact body of fifty-two acres of ground, near the centre of the city, all of which is available for University purposes. Moreover, it has fortunately been provided that this extensive domain is held subject to so many trusts of an educational character that the future alienation of any considerable portion of it is rendered impossible, no matter how strong might be the temptation to such a ruinous policy. No one who has not brooded anxiously for long years over the possible chance for the development of a truly great University here can realize the contentment afforded by the knowledge that an adequate and indeed an unequaled domain has been secured for all time. No one who is familiar with the unfortunate history of the University of Paris will fail to recognize the validity of this contentment. A School of Technology, an ordinary College even, may exist in a great city and draw large numbers of students without the possession of more ground than that needed for the halls of recitation. But for the development of a University, a true Schola Major, the fundamental requisite is a certain breadth and largeness of scope which will admit and invite the erection of great libraries, extensive museums, laboratories for original research, and all cognate foundations. Hence it is that you cheerfully endorsed the extensive obligations which I ventured to suggest in connection with this last, as in like manner with all the former of the transfers of land from the city to the University. But, in order that the resources of the University should not be unjustly taxed to comply with the serious conditions above named, your Board has formally transferred to the Department of Archeology and Palaeontology the duty of carrying out these conditions, accompanying this with the grant of such authority as may enable it to succeed in this momentous undertaking. It involves the effort to secure a further grant of land from the city so as to afford in all at least twelve acres as the site for the great Museum and the Botanic Garden; the collection of funds for the erection of extensive buildings to hold the splendid collections so rapidly forming and of an endowment to maintain them; the laying out of the grounds and the establishment of a botanic garden. It is fortunate indeed

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*In order that a complete statement of the various steps by which this result has been accomplished may be available for reference I have brought together in Appendix III., copies of all legislative enactments bearing upon the Blockley property, portions of which now constitute the University domain.
that your liberal policy has attached firmly to the University various organizations, of which the Department of Archaeology and Palaeontology is an admirable illustration, who will serve her interests as zealously and loyally as though merely a committee of your own Board. This department consists of a board of managers, thirty-six in number, of whom six are appointed by the Trustees of the University, while the remainder are chosen by the University Archaeological Association which works in harmonious co-operation. These bodies have accepted unanimously the important offer made to them by your Board, and are preparing to enter on the accomplishment of the task in a spirit which ensures its fulfillment.

It is essential to the larger growth of the University, and to its influence as the intellectual centre of this great State that this work shall be conducted on a broad scale. The pursuit of advanced study in many lines leads directly to the demand for museum facilities. These are as necessary to a University as its great Library: and indeed a museum scientifically arranged is a library wherein one must search for the earliest records. The Babylonian Exploration of the University, for instance, has conducted operations during several years at the site of ancient Nippur on the Lower Euphrates. They have been fortunate to recover a large number of inscribed tablets, bricks, stones, etc., which constitute a highly important addition to the scant sources of historic knowledge of the remote period, as far back even as 3800 B. C. to which they relate. The fact that records have been discovered of no less than six ancient monarchs whose existence was hitherto unknown, will illustrate the service to biblical study and to historic research which such collections may render. The official report of the Judges of the Columbian World's Fair at Chicago emphatically state, in regard to the exhibit made there of the results so far obtained by this exploration and accompanied by the first volume of the published texts by Professor H. V. Hilprecht, that it would be difficult to overestimate the value of this contribution to science. This opinion has been amply confirmed by the judgment of the highest authorities of Europe. Of course, such operations as these are costly, but the funds are derived from sources not available for current college purposes, and surely all will recognize that original work on this high plane of scholarship and scientific investigation is one of the chief glories of a great University.
Scarce less important have been the collections formed in other fields of Archaeology, as in the Egyptian, the Mediterranean, and the American Sections: while particular mention must be made of the wholly unrivaled collection of engraved gems and every form of the glyptic art displayed by Maxwell Sommerville. It seems only a fitting recognition of the important position reached within the past few years by the subjects of Archaeology and Ethnology and of the fame which has been won in these fields for the University, that your Board has elected Maxwell Sommerville, Professor of Glyptology, and has ordered that at the Commencement in June of this year the Honorary Degree of Doctor of Science shall be conferred upon Frederick Ward Putnam, the most eminent among American archaeologists, upon Hamdi Bey, the Director of the Imperial Museum at Constantinople, and an archaeologist of high distinction, and upon Sara Yorke Stevenson, the distinguished scholar to whose labors the remarkable development of the University Museum is in large measure due.

The report of the President of the Department of Archaeology and Palæontology will be found in Appendix No. IV, and presents a detailed account of the interesting operations of this department during the past year.

The University took a creditable part in the Columbian Exposition, and I take pleasure in calling attention to the report (Appendix No. V) of Mr. E. W. Mumford, Assistant Secretary, who had charge of the organization and care of our exhibit. The cost, which was defrayed by private subscription, was more than returned by the very large and valuable accessions to our Library and Museums procured through the influence of our representatives from the Commissioners of Foreign Governments and individual exhibitors. Thanks are due to Professor W. P. Wilson, to Mrs. Cornelius Stevenson, to Mr. Stewart Culin and to Mr. E. W. Mumford, for their earnest and successful labors in this direction.

A highly successful representation was also made by the University at the Spanish-American Exhibition held at Madrid in 1893; the highest awards were received, and the Director of our Museum obtained many valuable gifts for our collections.

I feel that this entire subject may be safely entrusted to the intelligent interest of the community, which will surely aid effectively in a work so replete with attraction, so conducive to
the adornment of the city, and so necessary to the higher life of the University.

I have the satisfaction of reporting the continued success of the American Society for the Extension of University Teaching, which, though not an organic part of the University, must be regarded as an affiliated organization. The original plan of operations has gradually been modified and extended as results indicated, but upon the whole the changes introduced have been slight. The work of the Society has greatly enlarged, though I must limit myself here to an allusion to the prominence acquired by the courses on Civics, to the success of the Summer School, and to the tendency constantly shown to recognize more and more the necessity of a considerable number of lecturers whose entire time shall be devoted to the work of the Society. One of the strong inducements which led me to organize this movement in America was the hope that by its means we might gain more ready and effective access to the masses in order to impart sound instruction in all that pertains to the duties and privileges of American citizenship. This special part of the work has recently been taken up actively by Mr. Charles A. Brinley, and the results promise to meet the highest expectations. The success of the Summer School which was conducted at the University last year by the American Society demonstrates the advantages of Philadelphia as a centre for such work, and the plans which have been proposed for the coming summer promise even larger results. The Society is still without permanent endowment, and has received no appropriation from either State or city. Of course, it receives no direct pecuniary aid from the University. By skillful management its finances are kept in a sound position, but the claims of this important work upon all who desire the greater intelligence of the masses seem so valid that there is good reason to hope that ere long it will be placed upon a sure and permanent basis by adequate endowment.

When the wide-spreading influence of these and other allied organizations is estimated in addition to the effect of the great educational work accomplished by the University itself, and when it is understood that at almost every point these activities are brought into relation with the municipality by definite and abiding obligations, it is not strange that of late years the truth is coming to be recognized that the University, so far from being a private and exclusive corporation, is really and organically a part of the
municipality. As I stated in my letter of resignation on April 23, progress has also been made toward the establishment of the essential principle that the University is in right, and should be in fact, the head of the educational system of the entire Commonwealth. We may fairly claim to have done much toward securing a recognition of the view that the encouragement of higher education by the municipality and the legislature is as proper and important in the older communities of America as it has been decided to be in the newer States.

While the relations of the University with the community have been rendered closer and more vital, there has been effected a complete unification of the University itself. From a group of disconnected schools there has been gradually organized a great academic body. This is evidenced by recent changes in the organization of your own Board, by which the system of standing committees is simplified and adapted to the new and closer relations between the numerous departments of the University. A roster of the newly adopted system will be found in Appendix No. VI. It is shown more conspicuously by the radical changes which will occur this year in Commencement Exercises. For the first time in the history of the University it is possible to have a true University week, the terms of all the departments now coinciding and thus allowing a full program of events of high academic importance. The necessity for able management on such an occasion was manifest, and a committee was early appointed, consisting of Professor George Wharton Pepper, Chairman and Chief Marshal; Professor John Marshall and Messrs. George Q. Horwitz, Henry B. Robb, Edward G. McCollin and E. W. Mumford. The historic importance of this occasion, and the actual interest of the events promised, lead me to publish in the form of an Appendix, No. VII, the program arranged by this efficient committee. It is to be hoped that the precedent thus auspiciously established will be followed perennially with ever-growing brilliancy. University week, thus celebrated with all academic and civic honors, will rank as the most imposing function of the year.

Sections 29 and 30 of the Statutes have not only been amended to permit of this change in the times of public commencements, but also by the addition of a paragraph permitting degrees to be conferred in academic council, at other than the stated times of commencement. (See Appendix No. VIII.)
important reason for this change was the fact that as students in
the Department of Philosophy may enter at any time in the year,
and may at any time complete their courses and fulfill the conditions
for their degree, it would often be a hardship to require them to
wait for several months for the degree which they might need at
once in support of applications for positions. Again, the Statutes
require the age of twenty-one years at least for graduation in
some of the professional schools, and in some cases bright men
have been compelled to wait for nearly a year after the completion
of their courses before receiving their diplomas. The new statute
provides for such cases, is in full accord with the usages of foreign
universities, and has every safeguard against abuse in the con-
ferring of degrees.

Another feature of University life has attracted so much
attention, and has come to hold such important relations to
academic work that its regulation has properly occupied the
serious consideration of your Board. I refer to Athletic Sports,
in the various branches of which our students have for several
years shown such interest and skill as to rapidly carry the
University colors to the front. It is obvious that there are grave
risks connected with these sports: risks of bodily injury to the
participants, especially in the more violent games, such as foot-
ball; risks of interference with important studies, owing to the
excessive claims of the practice and training required or to the
unduly frequent absences incident to the numerous matches;
risks of loss of tone and character from the spirit of professional-
ism or of unfairness which partisan zeal may admit, or from the
bad surroundings encountered at some of the more exciting games.
These risks must be recognized and admitted. Yet I am forced
to state after careful and prolonged observation that the nett
results of intercollegiate athletic sports seem to me to be enor-
mously on the side of good, and of good scarcely attainable in
other ways: while the evils incident seem capable of great
amelioration by proper systems of restraint and supervision. The
rules which should govern each sport can be fixed only by confer-
ences of experienced and high-toned players. The extent to
which students may be permitted to engage in such contests
requires the judgment of the Director of Physical Education and
of the several professors who are familiar with the individuals
concerned. The exclusion of professionalism and unsportsman-
like practices, and the restriction of the temptations incident to
certain contests demand the enactment and the rigid enforcement of adequate rules. The details of these questions are numerous and at times complicated: they cannot be discussed to advantage in a general way. If the authorities of each institution are in earnest in promoting the good and eliminating the evils of intercollegiate athletic sports, I have such rooted confidence in the good tone of American students as a body as to make me assured that satisfactory results will be attained. The action taken by your Board in February, 1894, was to establish, and provide with adequate authority, a committee consisting of representatives of each Faculty and of the Athletic Association. The composition of the committee ensured the immediate acceptance of its authority and fairness. The set of rules adopted by them and promptly enforced throughout the University exerted an obviously happy effect, and has received wide-spread approval. They are given in full in Appendix No. IX. They seem likely to deal effectively with abuses and to ensure a strictly honest representation in all contests, a proper attention to the physical fitness of the contestants, and a sufficiently good record in scholarship to justify the expenditure of time involved. They certainly make it clear that this University will retain no student upon its rolls whose only title to such a place is his prowess on the athletic field.

In calling attention to the list of publications (Appendix No. X,) by members of the University, while in a few cases authors who have not hitherto reported have been allowed to report their publications during preceding years so as to complete the record, it is a source of extreme gratification to note the proof of such activity in almost every field of literary and scientific work. It is proper to make especial mention of the admirable work of Professor Francis Newton Thorpe as Editor of the Memorial Volume entitled, "Benjamin Franklin, and the University of Pennsylvania," which was published by the Government as Circular of Information, No. 2, of the Bureau of Education. In addition to his duties as Editor, Dr. Thorpe wrote the leading article, in which is given with a fulness never before approached, the history of Franklin's relations with education. This important study of Franklin as an educator is peculiarly interesting at the present moment as showing in the language of Dr. Thorpe, "that the recent unification and organization of the University is the concrete expression and the academic proof of the profound sagacity of Benjamin Franklin's plans for a University."
wide distribution of this volume as a Government document cannot but be useful to the community and to the University. The courtesy of the distinguished Commissioner of Education, Dr. William T. Harris, and the labors of Dr. Thorpe in this connection deserve and have received grateful acknowledgment.

The growth of the University Library continues to be highly gratifying. There have been added during the year ending October 1, 1893, 7725 bound volumes, and 15,788 unbound volumes, as stated in the Report of the Librarian, Appendix No. XI. In 1881, the library contained only 20,000 bound volumes, and about 2000 unbound volumes and pamphlets; at present it contains about 120,000 bound volumes, and about as many unbound volumes and pamphlets. Even more gratifying is the rapid increase in the use made of the library by members of all departments of the University.

During the past year an adjustment of the financial relations of the Medical Department with the University was effected which is analogous to those previously agreed upon with the other departments. The general principle which has been adopted is that in the case of new departments which are still weak and lack endowment or adequate receipts from fees, assistance shall be extended as may be practicable from the University chest; while on the other hand, when any department has become strong, fully equipped, and in the habitual receipt of large revenues from fees and from endowment it is equitable that it in turn shall contribute somewhat to the general expenses of the University. The system which has been adopted in the professional schools is that all fees and all income from endowment in each department shall be considered the gross income of that department. From this is paid, first, all current expenses, and all salaries of subordinate instructors; next are paid certain minimum salaries to the members of the Faculty; whatever amount may be left over after these disbursements is regarded as surplus and is applied to the increase, pro rata, of the latter salaries up to a certain stipulated upper limit; and finally whatever amount may be left over after these payments is to be divided into three equal parts, one of which shall go to the general University account, another shall be held as a betterment fund for that particular department, and the last part shall be divided equally between all members of its Faculty. The services rendered by the University to each department are considerable and expensive. Such a system as the above provides
a chance for adding to the heavily burdened general income; while it still leaves in operation the wholesome principle that each worker shall have an equitable interest in all the results of his labor. It is working well; each department is accumulating a betterment fund; the salaries are increasing; and yet the general funds of the University are receiving regularly a comfortable accession. The Veterinary Department is still too young to stand alone. Considerable amounts have been advanced by the University which are being refunded, principal and interest, from the receipts of the school; the appropriations by the State Legislature to the Veterinary Hospital have been most opportune; but much of the credit of maintaining this school on the high plane originally adopted under the influence of its first dean, Professor R. S. Huidekoper, is due to the family of the late J. B. Lippincott, Esq., who have contributed annually a large amount to aid in realizing the known wishes of one whose name will always be associated with the foundation of this department.

The College Department, including under this title all the undergraduate courses, has been unprecedentedly prosperous during the past five years. The Dean's Report, published as Appendix No. XII, will call attention to the rapid increase in the number of students, attended with a corresponding gain in the receipts from fees.

It must be remembered that it is only twenty-five years ago since your Board adopted the bold policy of transferring the University from its old site down town to West Philadelphia. The earlier years following this removal were attended with serious financial results; and in spite of the superior educational facilities afforded, there was such apathy on the part of the community that by 1881 a debt of $450,000 had been incurred, chiefly by the accumulation of successive annual deficits. The extinction of this debt was a difficult matter. A considerable amount of money was raised by private subscription; the balance was canceled by means of the unrestricted University funds. In spite of the inconvenience resulting from this, your Board has pursued a policy of vigorous and rapid development. The result has demonstrated your wisdom, for the outcome has been in all respects satisfactory. It is a source of profound gratification that at the close of my administration, I can call attention to the official figures which, by request of the Committee on Finance and Property, the Treasurer has placed in my hands in advance.
of the publication of his Annual Report. The total value of the University property in 1881 was $1,600,000; it is now $5,317,335. Upon this property there are obligations of $338,939; which are amply represented by a tract of land purchased by the University for $150,000, and by the Central Heat and Light Station, the outlay on which has been $211,753. The ten acres of ground, which the University purchased for $150,000, could, we are told by competent judges, be sold to-day for over $250,000. Of the Central Heat and Light Station it is truly said by the Treasurer that it provides a source of large revenue through the greatly increased numbers of students in the School of Mechanical Engineering, accommodated in this building. It also promotes the comfort and well-being of the whole University by rendering to its departments a better service of heat, light and ventilation, than could otherwise be obtained. Each department is charged upon an equitable basis for its share of the above advantages, so that while a first-class service is secured in place of the former inferior one, it is expected that actual saving will be effected by the economies possible through a single central plant, instead of a series of heating and lighting plants in each separate building on the University domain.

It is probably true that all educational institutions show, at the close of each fiscal year, a deficit, on comparing the total outlay with the receipts from investments plus the students' fees. If, however, the policy of the administration be sound and each movement of expansion has been judiciously made, it should be possible to more than cover this deficit by the generous contributions received during each year. This state of things is a perpetually recurring demonstration of the essentially charitable nature of all higher education.

While during the past thirteen years the students of the University have increased from 981 to 2180; and the fees from $92,701, the amount received in 1881, to $230,567, actually received during the current year; there has been no single year of this series when the total operations of the University did not show a deficit. I am happy to say that we have succeeded in meeting these deficits with funds secured specially for the purpose. Indeed, the Treasurer states for the past three years the current receipts have exceeded the current expenditures by over $27,000: though this surplus of current receipts has been more than absorbed by outlays for additional land and new buildings.
Undoubtedly the financial administration of the University will require in the future, as in the past, solicitous care and energetic exertions. Even if millions were added at once to the general fund the income would be taxed to meet the demands which make themselves felt today. We have called into existence a great University: it is intensely alive in all its parts; its growth in resources must be rapid if it is to keep its place with the other great universities of the world. The confidence and approval of the community may possibly be measured as well by the fact that during this year the acquisition in lands, buildings and money contributed will not be less than $1,000,000 as by any other item in the growth of the University. Happily, therefore, we may trust that in the future there will be an ever-broadening stream of public and private munificence directed to an institution which has so faithfully and fruitfully employed all that has hitherto been entrusted to it.

Turning from these questions affecting the general University, I beg to submit the following reports of the various departments. It will be found that the important developments already stated in regard to what may be considered as the external and broader activities of the University, have been fully equalled by the growth and advances of the departments.

The College has enjoyed unprecedented prosperity. Including the graduate students in attendance, who are enrolled under the Faculty of Philosophy, the total attendance during 1893-94 has risen to 843 (689 in undergraduate classes, 154 in post-graduate courses). For the first time in the history of the University, the numbers in the College have exceeded those in the Medical Department, where 796 were enrolled in 1893-94. There seems small reason to doubt that, owing to the advantages now enjoyed by the University and to the admirable character of the work in all branches, there will be rapidly developed here one of the largest academic communities in the world. It is impossible for me to pass to a discussion of the report of the Dean, Dr. Horace Jayne, which is printed as Appendix No. XII, without speaking of the loss which the College is about to incur in his retirement from the office he has filled for six years, with so much advantage to the institution. Dr. Jayne graduated at the University as A. B. in 1879, and as M. D. in 1882. He early displayed decided scientific ability, especially in the field of natural history, and coupled with this was a disinterested zeal for the advancement of
scientific education which marked him out for a distinguished career. The University owes in large measure to him the Biological Department which has won such eminence; and since January, 1889, when his administrative abilities led to his choice as Dean of the College Department, he has worked with like success in the latter. His example is an encouragement to young men of wealth, as showing the happiness and merited distinction readily attainable by a devotion to the higher interests of society. His services as Dean entitle him to the grateful appreciation of the University. He leaves that office at a time when the equipment, the organization, and the prosperity of the College are at a very high level. Not only is the total number of students in the College greater than ever before, but the admissions during the year reached the number of 298, a figure far in advance of any previous record. It is gratifying to observe that a considerable proportion (101) of these were admitted to advanced standing; the number on the Freshman rolls being 197. Even more satisfactory is it to note the steady growth in the proportion of students coming to the College from places other than Philadelphia and its suburbs. In 1890 these constituted twenty-one per cent of the body of the College students; in 1891 twenty-three per cent; in 1892 twenty-seven per cent; in 1893 thirty per cent; and in 1894 thirty-three per cent. In the early days of the University, before the Revolutionary War, and before miserable factional strife in Pennsylvania struck down our prosperity, the College had won more than national fame, and was already drawing to Philadelphia a large proportion of her students from distant places. We have now regained that point, and it needs only the prompt erection of dormitories to cause our splendid equipment and the admirable grade of our educational work to draw to the College, just as to the Medical Department, large numbers of the best students of the entire continent. If the ratio of increase observed during the past decade is maintained the close of this century will witness almost 1500 students in the College and Philosophic Faculties alone.

No more striking instance may be cited of the immediate effect of the thorough equipment of a course of study with able teachers and adequate facilities than is presented by the rapid growth of the classes in attendance on the technical courses in the College. When the obvious advantages to our community resulting from such increase in the number of students drawn here are
fully appreciated, as they are now coming to be, there will surely be no hesitation in supplying every course of study in the college with the completest equipment. The treasurer’s report shows that in 1893 the value of the securities of the John Henry Towne estate, held by the University, reached the large sum of $454,301.11, yielding in that year an income of $12,254.27. The progressive realization from considerable bodies of land now unproductive will eventually add largely to the revenues derived from this endowment. It is with constant gratification that reference is made to the strengthening position of the Towne Scientific School. The high value of the scientific degree (B. S.) conferred by the University is widely recognized. I would call especial attention to the arrangement by which not only a series of four-year technical courses, but also a five-year scientific course are maintained. While it is true that the chief part of the increase in the number of our students of science has been in the four-year courses (221 out of 331), it is proper to emphasize our belief in the superior value of the five-year course which affords during the first two years, occupied principally with general studies, a broad basis for the several branches of technical work to which the concluding three years of this highly effective course are devoted.

The widespread desire among American students to secure entrance to the practical pursuits of life at a comparatively early age seems quickened by increasing competition, though to some extent checked by an appreciation of the continually advancing thoroughness of preparation needed for successful work. The rapidly growing proportion of candidates for the B. S. is as clear an evidence of this, as is the difficulty of maintaining the percentage of college graduates in the prolonged courses of professional study. We have frankly recognized the reality and the reasonableness of this desire, and have applied ourselves to meet it in the College by rendering each of the four-year technical courses so strong and thorough that the B. S. won by their successful completion is a guarantee of solid educational work. None the less would the University urge on all who intend to take a scientific course and can afford to devote five years to a college education to elect the admirable course described at page 169 of the University Catalogue under the title of The Course in Science and Technology. Argument is no longer needed to convince that college life, where the influences are humanizing and elevating, is
the best preparation for all the higher pursuits of life. Equally
clear is the superiority of the man, however technical and special
may be his field of work, and indeed the more so in proportion as
his work is such, who has enjoyed the advantage of a broader
foundation of general studies. Surely it cannot be held by any that
for the attainment of these advantages, and the acquisition of a
degree attesting such scientific and technical preparation as quali-
fies for immediate responsible and lucrative employment, the period
of five years, from seventeen or eighteen onward, is excessive. Our
leading institutions plead for this greater breadth and thoroughness
of preparation. There is no advantage to the University in main-
taining this five-year course: the advantage is all for the
community. The same question arises in connection with the
preparation of students for the courses in medicine and law. It
has been found necessary to increase the length of the former to
four years, and that of the latter to three years. It is impossible
to demand a college degree (either B. A. or B. S.) for admission,
unless we wish to exclude a large proportion of our best students.
Yet all appreciate the importance of college training as a prepara-
tion for professional study. We are forcing, in many instances,
the earnest student to decide between a college course of four
years followed by a short and poor professional course in a school
of low grade, and the relinquishment of the advantages of college
so as to enter at once upon a longer and more complete course of
professional study. The University of Pennsylvania has tried to
meet this great difficulty, in the case of medical education, by
providing a skillfully adjusted course of study in biology and
associated subjects covering two years, and by decreeing that any
student who, either with us or at any accredited institution, may
at the close of Sophomore year elect such course and pursue it
successfully, shall at the close of Senior year receive the Bachelor's
Degree and be eligible for admission to the second year of the
four-year medical curriculum. In this way the combined degrees
(B. A. or B. S. and M. D.) are acquired in seven years; and the
fortunate student has enjoyed a graded course of education which
is not at present surpassed as a preparation for the medical pro-
fession. The advantages of this arrangement are so great that it
is not surprising that already at a considerable number of colleges,
provision has been made for the required instruction during the
last two years so as to enable their graduates to secure admission
to the second year of our medical course.
There is reason to hope that a similar arrangement may be effected between the Law School and the course in the Wharton School or similar courses elsewhere by which the fullest extension of the legal curriculum may be tolerated without unduly prolonging the term of study for acquiring the combined collegiate and legal degrees.

The Central Heat and Light Station was in active operation at the date of my last report, but the public inauguration of the Laboratory of Mechanical Engineering, of which it is a part, did not take place until May 26, 1893, when addresses suitable to the occasion were delivered by Mr. J. Vaughan Merrick, as chairman of the committee charged with its planning and construction; by its architect, Mr. Joseph M. Wilson, and by its director, Professor Henry Spangler. The second winter of the use of the heating and ventilating plant witnessed decided improvements in efficiency of service and in economy, and the system may now be pronounced thoroughly effective for the purposes designed, and an evidence of the professional skill of those who had charge of its construction. The admirable accommodations provided for the Mechanical Engineering School have aided greatly in its development, but the penalty of its success is already apparent, and it is evident that the space which seemed more than ample for its expected growth, will soon have to be enlarged and extended.

The Laboratory of Chemistry is now completed, and will be another example of the latest ideas and most approved material in the construction of a building, for the special and exacting requirements of its special purpose. The cost of the building has considerably exceeded the estimated amount, partly on account of unexpected difficulties in preparing the foundations on the site assigned, but nothing has been spared to make it, without extravagant architectural ornament, dignified in its exterior, and perfect in its interior appointments. A large portion of the cost of construction was assumed by Messrs. Charles C. Harrison, Alfred C. Harrison and William W. Harrison, who, in filial regard for their father, the late George Lieb Harrison, LL. D., desired that it might perpetuate the name of his father, John Harrison, the founder of chemical manufactures in this country. It is needless to say that your Board gratefully accepted the gift and consented to the request; and henceforth the building will be known as the John Harrison Laboratory of Chemistry. Its completion will accomplish two most desirable results. The work of the chemical department
will be immensely facilitated by the extensive space and improved appliances at its disposal, and the College building will not only be relieved of the disagreeable results of chemical work in a building not properly adapted to it, but will gain largely in suites of rooms that are greatly needed by other growing departments. The Laboratory consists of a central building three stories high, with two wings each of two stories. It has a front of 168 feet on Thirty-fourth street, and the wings are 105 feet in depth. The main lecture room forms the rear of the central structure, and will accommodate over two hundred persons on seats arranged in ascending tiers, and is lighted chiefly from sky-lights which are very skillfully constructed. The front of this part of the building contains the Director's office and private laboratory, students' closet room, supply room, and iron and steel laboratory. On the first floor of the wing facing Spruce street is the laboratory for beginners, containing 212 double desks, and fitted out with flues and hoods of the latest approved pattern. Adjoining it are the instructor's room, balance room, and hydrogen-sulphide room. On the second floor of this wing are the museum, a lecture room, and a qualitative laboratory, with suitable smaller apartments. The second floor of the north wing contains another lecture room, the library and reading room.

The reorganization of the college curriculum with the redistribution of the courses of studies into elective groups has already confirmed the expectation formed of its happy influences. The subject is so fully treated in Dean Jayne's report that I beg to refer thither all who are interested in this important department.

While the great success of the technical courses merits special mention, it is gratifying to point to the continued growth of the Wharton School, both in the scope of its teaching and in the number of its students. Of particular interest are the courses in Journalism in which pioneer work has been done here with convincing evidence of the value of the undertaking, and the courses of lectures by eminent specialists upon important topics of the day. The establishment of a four-year course in Finance and Economy, embracing in the two lower years some of the subjects hitherto taught in the later years in this School, not only affords opportunity for more thorough advanced work before graduation, but will bring these courses into desirable relations of continuity with the courses of instruction in the leading high schools of this and other States.
The growth of post-graduate work in our leading universities during recent years is a noteworthy and encouraging fact. It indicates the rapidly increasing demand for thorough special preparation on the part of the men and women who are entering all the higher walks of life, and at the same time the growing love for genuine scholarship in this country. It is encouraged by the strenuous efforts on the part of the universities to afford facilities in library, laboratory and museum, for advanced study and original research; and by the admirable zeal with which the labor of conducting this higher education is assumed by the leading members of their faculties. One of the most urgent educational needs of to-day is for the endowment of professorships in Faculties of Philosophy, or in the field of post-graduate work; and of fellowships which shall enable the incumbents to take advantage of the facilities now offered at our great centres of learning. It may not be out of place here to call attention to the singular anomaly that the National Government has as yet taken no action to render accessible to advanced students the splendid opportunities which exist at Washington. In spite of the earnest advice and liberal bequests of Washington and the subsequent forcible recommendations of many eminent men, the foundation of a National University—the University of the United States—at Washington, remains an unrealized proposal. It appears urgently desirable on many grounds that this great need should be met promptly and effectively by Congress. It would seem obvious that it is a true University of the highest type and limited to post-graduate work, which is needed: and it may be confidently expected that a liberal provision for such advanced instruction at the National Capital will be followed by an even more rapid growth of the post-graduate departments of every well-equipped University in the country. Although our own Philosophic Faculty was established so recently as 1884, the report of the Dean (see Appendix No. XIII,) shows that during the past year there have been no fewer than 154 students enrolled, whose diplomas represent thirty-seven different institutions. There has been a steady increase in the number of courses of study offered; in the number of students in attendance, in the zeal of both professors and students and in the grade of the work done. Attention has already been called to the change in University statutes regulating the conferring of degrees which will still further increase the attractiveness and availability of this
important department. I have on previous occasions dwelt fully on the fact that all the courses offered in the Faculty of Philosophy and the degree (Ph. D.) which may be won by their successful pursuit, are open to women on the same conditions as to men. It seems that this provision may prove an important step toward the solution of the difficulties of coeducation in institutions where from one reason or another there is objection to opening the regular college courses to both sexes alike.

The report of the Dean of the Medical Department (see Appendix No. XIV) will command the attention of all interested in the advancement of professional education. It is only natural that the policy pursued by this department, the oldest and most distinguished Medical School in America, should be watched closely; and that the results of this policy should exert an influence upon our sister schools. The enforcement of a compulsory three-year graded course by the University in 1877, and the brilliant success which attended it, marked an epoch in the history of medical education in America. It now seems difficult to conceive the prolonged and heated controversy which had preceded the adoption of that measure. The decision to extend the course of medical study to four years and the length of the sessions to eight months was reached in 1891, but not without great misgivings as to its effect on the hardly-won prosperity of the Medical School. The conditions imposed by the Board of Trustees, that a guarantee fund of $20,000 annually for five years, and a definite contribution of $50,000 toward the permanent betterment of the Medical Department, were met by the liberality of friends of the University—in chief part members of the medical faculty. The report of the Dean exhibits briefly but effectively the emphatic endorsement given by the profession and the community to the stand taken by the University.

The number of students who entered for the session of 1892–93, the last date at which matriculation for the three-year course was allowed, reached the large total of 311. This was reasonably attributed in part to the pressing forward of numbers who desired to anticipate the greater exaction of the new and prolonged course.

The class of 1891–92 had numbered 260, so that when the first class entering under the new four-year rule in 1893–94 reached the gratifying figure of 188 it was recognized at once that
the battle for Higher Medical Education was won. The total number in attendance in 1893-94 was 796, against the entirely unprecedented number of 847 in 1892-93, of which the Dean truly remarks that probably at no period in the history of any medical school in the United States has this number of students in attendance during a scholastic year been exceeded. Especially gratifying as proving the high quality of the students composing these large classes are the figures furnished by him to show the percentage of students holding some academic degree. While there is an obvious necessity for still further elevation of the standard for admission, it may be considered as definitely proved that the schools with best equipment and facilities and which permit the most thorough and practical instruction will draw the largest number of the best students in spite of more onerous exactions.

Further convincing proof of the high value set upon the diploma of the University, is furnished by the remarkable fact that in spite of the considerable number of students who are turned back at the close of each year (about twenty per cent of each class) from failure to pass the examinations required for promotion, the size of the upper classes progressively increases owing to the large number of advanced students or graduates admitted from other schools. Reference may again be made here to the important provision allowing graduates in arts or science who have pursued certain biological studies to enter the second-year class of the Medical School under the conditions fully stated in the Catalogue and in the Dean's report. The practical value of this arrangement is shown by the fact that many of the classical and scientific colleges throughout the country have already arranged courses to meet the requirements for entrance to our second-year medical class, while others are preparing to give courses in the branches named.

It is impossible in this place to dwell upon the numerous and weighty advantages afforded by the four-year course. It allows

* The addresses introductory to the course of 1877-78 and to that of 1893-94, both of which I had the honor of delivering by invitation of the Medical Faculty, have been published by the Lippincott Co., under the title of "Higher Medical Education, the True Interest of the Profession and of the Public."

† As this report goes through press, I am enabled to add that the class entering for the session of 1894-95 numbers 262, so that the total number in attendance is now 801. There is every reason to expect at least an equal number in succeeding years, so that by the time the four-year system is in full operation the number in attendance in the Medical School will approach or equal 1000.
the introduction of so much practical and clinical work that each graduate is actually well prepared to enter at once upon the practice of his profession. Only those who realize the disastrous ignorance of many who graduate under a system of short courses with scant clinical facilities will appreciate the full significance of this statement. There will be provided also a certain degree of election between special advanced courses in the fourth year, so that those who by that time can determine their lines of future work may acquire an advanced degree of knowledge in appropriate studies.

It may be doubted whether the length of the medical curriculum now attained by four annual sessions of eight or nine months each will need prolongation. Our efforts may be directed profitably to securing the needed advance in the requirements for education preparatory to entering upon that curriculum; and to the provision of more ample facilities for post-graduate work. The completion of the Wistar Institute of Anatomy and Biology, to which reference has been made earlier in this report, calls attention forcibly to what is required in other branches. Our object is to secure in each the facilities of a thoroughly equipped laboratory, occupying a special building, and adapted at once to the needs of undergraduate work, and to the advanced instruction and original investigation of post-graduate students. These facilities now exist in the Laboratory of Hygiene, in the Wistar Institute of Anatomy and Biology, and in clinical medicine they will be provided in connection with the University Hospital and the adjoining Laboratory which will be erected in the immediate future. This Laboratory of Clinical Medicine is founded as a memorial of the late William Pepper, who formerly held the chair of the Theory and Practice of Medicine, and who is justly regarded as among the great clinical teachers of America. The object of the foundation, as stated in a communication to your Board on February 24, 1894 (Appendix No. XV), is to promote the interests of the patients in the University Hospital by the prosecution of minute clinical studies and original researches, and to advance the interests of science by the publication of the results of such work. There will be needed an adequate endowment of this Laboratory; and with this it is hoped that excellent results will attend its operation. It is a source of added gratification that the sum placed at your disposal for this Laboratory will be instrumental in securing the payment of the appropriation made
by the Legislature in 1893, of $60,000 for the construction of an additional wing to the University Hospital, and of $20,000 for an extension of the Maternity Wards, subject to the condition that $80,000 additional should be subscribed and paid in from other sources for construction purposes. The prevailing financial conditions were such as to cause grave fears that this much-needed appropriation might be lost through inability to comply with the condition attached. It is a source of thankfulness that through the generous contributions placed at your disposal for this purpose, the requirements of the act have been fully met. The construction of the Hospital wing, of the new Maternity Ward and of the Clinical Laboratory, will proceed at once under the able supervision of Dr. Billings, Director of the Hospital. In grateful acknowledgment of the liberal gift of Mrs. D. Hayes Agnew, and even more out of reverence for the lofty character, and long and devoted services of Dr. Agnew—equally pre-eminent as a teacher, a writer and a practitioner—it has been unanimously resolved that the important addition about to be made to the Hospital shall bear his name.

When it is realized that for the establishment of the University Hospital there has already been secured in the course of twenty-three years, ground, buildings and endowments aggregating $1,350,000, the heavy drain upon the energies and resources of the friends of the University, incident to this essential undertaking, will be somewhat appreciated. The undertaking was, however, unavoidable. It would have been impossible to have carried through successfully the reform and elevation of medical education without the possession of a large general hospital under the exclusive control of the University. Each step taken in advance has been based upon more and more thorough practical instruction of each individual student in the Hospital Ward, and in the adjoining laboratories. The last great change, inaugurated with such brilliant success, will demand a large extension of clinical facilities. Fortunately the claims of sick and suffering humanity are here so obviously identical with those of higher medical education, that the appeal of the Hospital for increased endowments and larger current funds will surely meet with a generous response. The ever growing pressure upon the accommodations of the Hospital; the high efficiency of the service of the institution; the pre-eminent success of the recent graduates of the University, are the convincing proofs of the
wise use made of all that has been entrusted to you for this purpose, and are the most eloquent appeal for further and more adequate benefactions. The expenditures of the University Hospital for the year ending August 31, 1893, reached the large figure of $96,268, including unusually large outlays for repairs and construction. It must be expected that when the additions now to be built are completed and in full operation, the annual expenses will approximate $120,000.

Mention is fittingly made in the Dean's report of the lectures which were given by request during the last session of the Medical School by Professor J. M. DaCosta and by Dr. Isaac Ott. It was recognized that these welcome features were not merely the expression of courteous friendship, but were rather a willing testimony to the high claims of a truly scientific and unselfish system of education upon the co-operation of those who desire to see the standard of the profession elevated.

The Auxiliary Faculty of Medicine has been re-organized both in its staff and its courses of instruction. The retirement of Professor Harrison Allen in order to assume the directorship of the Wistar Institute led to changes in the Faculty. Dr. Charles K. Mills was elected Professor of Medical Jurisprudence and Dean of the Faculty. Professor Edward D. Cope was transferred to the chair of Zoölogy and Comparative Anatomy from that of Mineralogy and Geology, and Dr. Amos P. Brown was elected to the latter chair. The degree of Doctor of Philosophy is no longer given to graduates of this department as such, but their work in it, for which a certificate is given, may count as part of the work in the Faculty of Philosophy, for which that degree is given. The report of the Dean will be found in Appendix No. XVI.

The Report of the Law Department as presented by the Dean, (Appendix No. XVII) exhibits a steady increase in prosperity. This is doubly gratifying in view of the elevation of the standard, and the prolongation of the curriculum so recently accomplished. The statement as to the Biddle Memorial Library is of peculiar interest. The arrangements as to the maintenance of this library have operated even more advantageously than was anticipated; so that the possession of a rapidly growing and efficiently administered library is assured to the department. The importance of this to a Law School can not be overestimated.

For some years past the Law School and Library have been accommodated in rented apartments in the Girard Building,
with the real or supposed advantage of contiguity to the court-
rooms in the City Hall. The very great increase in the attend-
ance upon the school under its improved system, has rendered
these quarters inadequate, and the question of a new location has
forced itself upon the Faculty and friends of the department. By the
terms of gift of the Law Library it must be kept east of the Schuyl-
kill River, and it is evident that the School and Library should not
be separated.

It is a disputed question whether the offices of lawyers
are likely to gravitate toward the vicinity of the courts or to
that of the financial and business centres of the city. At the
same time it is felt that as nearly as possible the Law School
should be identified with the general life of the University, and
its students given as much as is possible of the various advantages
which cluster around the site in West Philadelphia. A happy
solution of this problem was thought to have been reached in the
proposed purchase of a large lot of ground on the south side of
Walnut street at the eastern end of the Walnut street bridge,
midway between the City Hall on the one side, and the Univer-
sity grounds on the other, and within easy walking distance from
both. Sufficient progress was made in securing subscriptions to
give assurance of the success of the undertaking; but a change
in the views of the Faculty as to the advisability of the proposed
site, led to its abandonment. The question of a suitable building
for the Law School must, however, become an urgent one within
a very short time.

The reports of the Dental School and of the Veterinary
School as presented by the Deans of their respective departments,
(Appendices No. XVIII and No. XIX) are full of encourage-
ment as to the condition and prospects of these interesting
departments.

The steady increase in the number of students in attendance
on the Dental School and the more exacting requirements of the
improved system of education enforced in it, are leading to an
urgent demand for more spacious accommodations. Various
temporary expedients have been suggested, but it is obvious that
nothing but the erection of a building specially devoted to this
school will satisfy its needs. The last decade has witnessed a
remarkable advance in the science and art of dentistry toward the
high position they should occupy as a most important branch of
medicine. The commendable zeal shown by the dental profession
in elevating the standard of education requisite for admission to its ranks has contributed principally to this result. I have felt a peculiar interest in this movement; and the prominent position held by your Dental School at every step of the advance is a source of just gratification to all concerned. The same self-sacrificing efforts on the part of the Faculty, the same anxiety as to the practical results of each important step of reform, and the same gratifying proof of the wisdom of the progressive policy pursued, that have been dwelt upon in connection with the changes in the Medical School have been exhibited in equally marked degree in the recent history of the Dental School. In the presence of so much public-spirited devotion on the part of the dental faculty, and in consideration of the priceless services now rendered by the dental profession to the community—services which not only relieve pain, but promote or restore health and prolong life—it would be an invidious reflection to express doubt as to the willingness of the community to unite in a liberal effort to secure the greatly enlarged facilities and endowments needed to place the higher dental education upon a strong and sure basis.

Reference has already been made to the necessity of increased revenues for the Veterinary School and Hospital. The grade and character of work done in both the didactic and practical branches is such as to merit the highest commendation. The diploma is regarded everywhere as of the highest rank in this specialty. The facilities for instruction are unsurpassed. The very superiority of the curriculum, involving more prolonged and advanced study, as well as greater expenditures on the part of the students, tends to restrict the number of students in attendance, in view of the ease with which a diploma may be obtained in some other veterinary schools. The disinterested policy of your school has, however, won the admiration of all who are familiar with the subject.

It is with pleasure that I repeat the acknowledgments due to the sustained liberality of the family of the late J. B. Lippincott, Esq., which alone has rendered possible an adherence to this policy. It can scarcely be doubted that when the magnitude of the interests at stake is appreciated, all difficulties will be ended. The commercial values affected by the diseases of our live-stock are so enormous; the sanitary questions connected with the transmission of disease from
sick animals, or infected animal flesh, are so startling in their importance, and the consequent demand for increasing numbers of scientifically educated veterinarians is so obvious, that we may surely count upon progressive prosperity for this admirable school of the University.

WILLIAM PEPPER,

Provost.
APPENDICES.

APPENDIX No. I.

THE PROVOST'S LETTER OF RESIGNATION.

To the Board of Trustees:

With deep thankfulness I recognize that the University has reached a stage of development and prosperity which justifies me in laying down the high office you intrusted to me more than thirteen years ago, and which I have held as long as it was possible to combine the administrative labors of Provost with the demands of medical teaching and practice. This time has now passed, and I beg therefore to tender my resignation, to take effect after the coming Commencement.

The close of the current session will witness the completion of the formative period of the University. From a group of disconnected schools there has been gradually organized a great academic body, complete in its unity and instinct with varied yet harmonious activities. Mutual confidence and co-operation have developed a system strong enough for effective central control, yet so flexible as to admit affiliation with many separate organizations.

To our University is due the credit of establishing University Extension in America, yet the important and successful society which controls this movement has no organic relations with the University, save that the Provost is ex-officio the Honorary President. The Wistar Institute of Anatomy and Biology, a magnificent memorial of the founder of American anatomy, has a separate charter, and is not owned by the University, yet is governed by a board, the majority of whose members are appointed by yourselves. The University Hospital, which has grown so prosperously, is a special trust administered by a board of twenty-two members, only four of whom are appointed by the trustees of the University.
The Department of Archaeology and Palæontology, under whose energetic operations there is developing rapidly a museum of high rank, is governed by a board of not less than thirty-six members, of whom only six are appointed by the trustees of the University. Reference is made to these familiar instances to illustrate the admirable results which may develop under a system which excludes rigid control, and rests upon mutual confidence and a common devotion to a great cause.

It has been the chief aim of your board to demonstrate to the people of this great Commonwealth that the University is truly the voluntary association of all persons and of all agencies who wish to unite in work for the elevation of society by the pursuit and diffusion of knowledge and truth. No less important has been the establishment of the principle that the University, so far from being a private and exclusive corporation, is essentially and organically a part of the municipality. The large future of the University was secured when, in 1872 and in 1883, City Councils voted, without a dissenting voice, the transfer to the University of splendid tracts of ground in consideration of the establishment in perpetuity of fifty free beds in the hospital for the poor of Philadelphia, and of fifty prize scholarships in the College, to be awarded to graduates of the public schools of Philadelphia. The subsequent accessions of territory which have brought the domain of the University up to fifty-two acres, in a compact body in the centre of the city, have been the logical consequences of these great steps; and so faithfully have all the trusts and conditions been executed, that it has come to be recognized by the municipal authorities that it is more profitable to the city to give freely to the University anything in its power to bestow which is needed for the development of that institution than to dispose of it elsewhere even at a great price. It needs only the resolute continuance of this wise policy to secure for the University full recognition as a branch of the city government, with a duly accredited representative of its great constituency in her Councils.

Progress has also been made toward the establishment of the essential principle that the University is in right, and should be in fact, the head of the educational system of the entire Commonwealth. We may fairly claim to have done much toward securing a recognition of the view that the encouragement of higher education, by the municipality and the legislature, is as
proper and important in the older communities of America as it has been decided to be in the newer States.

While the unification of the University and the establishment of broad lines of policy may seem to be the most important work of the past thirteen years, it will be found that the resources of the University and the educational work in each department have been successfully promoted. In 1881 its property was fifteen acres, while at present there are owned or controlled by the University, in a continuous tract and solely for educational purposes, not less than fifty-two acres. The value of the lands, buildings, and endowment in 1881 may be estimated at $1,600,000; it is now over $5,000,000. Prior to the date of the late John Henry Towne’s great bequest, the University had never received a single large gift or legacy. During the current year ending September 1, 1894, there will be acquired in lands, buildings, money, and subscriptions not less than $1,000,000. The members of the teaching force in 1881 numbered 88, and the students in all departments, 981; at this time the former are 268 and the attendance has reached 2180, representing every State of the union and not less than thirty-eight foreign countries. The College Department has attained a national distinction, and its complete reorganization, which has now been accomplished successfully, gives sure promise of sound and rapid progress. The Medical School has been advanced to pre-eminence in equipment and prosperity, while plans now maturing will place it abreast of the great schools of Europe. The Law School has effected the prolongation and elevation of its curriculum, and has deservedly won national repute. Encouraging progress has been made toward providing an admirable building on an approved site, so that the future eminence of the school is assured. Grati-
ifying reports may be made of the position of the Dental and Veterinary Department; and well-considered plans for their still further development need only time for their fulfillment. Upon this vigorous basis rests the Department of Philosophy, which although organized as late as 1884, and still without special endowment, has already 154 students. It represents the University in its highest and best intellectual life; it affords inspiration to teachers and students; it has enabled us to extend the richest privileges of the University to women on equal terms with men; it points the way to large endowment of research and advanced scholarship.
The necessity of dormitories to the development of the best University life has come to be clearly recognized by your Board, and generous friends stand ready to supply this important need.

It is pleasant, in these days of strength and prosperity, to reflect upon those of doubt and struggle, when ridicule met the assertion, the truth of which is now freely conceded, that nowhere can a great university be developed so favorably as in a great city.

In closing my term of service as Provost I may be permitted to allude to the motives which impel me to this step. The labor of these thirteen years has been so severe, in connection with my professional duties in the Medical School, and with the extensive medical practice necessary to provide the funds which have enabled me to initiate nearly all of the large movements undertaken during this time, that I have often felt that my life was specially preserved for the work. It has, however, been growing evident, for several years past, that the time was approaching when the immense extent of the University interests would demand the undivided activity of the most energetic man. It has now become necessary for me to choose between administrative work and medical science. My devotion to the latter has determined the choice.

No official has ever been associated with more affectionate and indulgent colleagues, or has enjoyed more loyal co-operation than has been extended to me. I am confident that the choice of my successor will be wisely and promptly made. I do not leave the service of the University, but will remain, with more free hands, ready to serve her every interest with utmost devotion.

I invoke upon your continued labors in the government of this grand institution the richest blessings of Almighty God, who has in the past so signally guarded it.

William Pepper,
Provost.
APPENDIX No. II.

DEATHS.

Jan. 10, 1894. Oswald Seidensticker, Ph. D., Litt. D., Professor of the German Language and Literature.

RESIGNATIONS.

" " Miss Ida Wood, Ph. D., as Secretary to the Graduate Department for Women.
April 4, 1893. William L. Zuill, V. M. D., as Professor of Veterinary Surgery and Obstetrics.
May 1, 1893. Robert Meade Smith, M. D., as Professor of Comparative Physiology.
May 19, 1893. William Goodell, M. D., as Professor of Gynaecology.
April 23, 1894. William Pepper, M. D., LL. D., as Provost of the University and President pro tempore of the Board of Trustees.
May 9, 1894. Horace Jayne, M. D., Ph. D., as Dean of the College Faculty and of the Faculty of Philosophy.

APPOINTMENTS.

GENERAL.

May 1, 1893. Charlemagne Tower, Jr., to be Trustee.
April 23, 1894. William West Frazier, to be Trustee.

UNLIMITED, OR FOR A PERIOD OF THREE YEARS OR MORE.

COLLEGE DEPARTMENT.

Feb. 7, 1893. Joseph French Johnson, A. B., to be Associate Professor of Business Practice.
May 19, 1893. Felix E. Schelling, A. M., to be JOHN WELSH CENTENNIAL Professor of History and English Literature.
<table>
<thead>
<tr>
<th>Date</th>
<th>Position</th>
<th>Name</th>
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<tr>
<td>May 19, 1893</td>
<td>Professor of Civil Engineering</td>
<td>Edgar Marburg, C. E.</td>
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<tr>
<td>April 23, 1894</td>
<td>Professor of Glyptology</td>
<td>Maxwell Sommerville</td>
</tr>
<tr>
<td>May 1, 1893</td>
<td>Professor of Mental Diseases and Medical Jurisprudence</td>
<td>Charles K. Mills, M. D.</td>
</tr>
<tr>
<td>June 6, 1893</td>
<td>Honorary Professor of Gynaecology</td>
<td>William Goodell, M. D.</td>
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<td>“</td>
<td>Professor of Gynaecology</td>
<td>Charles B. Penrose, M. D., Ph. D.</td>
</tr>
<tr>
<td>May 19, 1893</td>
<td>A. SYDNEY BIDDLE Professor of Law</td>
<td>George Wharton Pepper, LL. B.</td>
</tr>
<tr>
<td>May 19, 1893</td>
<td>Professor of Comparative Physiology</td>
<td>Leo Breisacher, M. D., V. M. D.</td>
</tr>
<tr>
<td>“</td>
<td>Professor of the Theory and Practice of Veterinary Medicine</td>
<td>Leonard Pearson, B. S., V. M. D.</td>
</tr>
<tr>
<td>Nov. 7, 1893</td>
<td>Professor of Veterinary Surgery and Obstetrics</td>
<td>John W. Adams, V. M. D.</td>
</tr>
<tr>
<td>Feb. 6, 1894</td>
<td></td>
<td>Rev. Leverett Bradley, A. M.</td>
</tr>
<tr>
<td>Feb. 6, 1894</td>
<td></td>
<td>Chaplain</td>
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<tr>
<td>March 7, 1893</td>
<td></td>
<td>Rev. John T. Beckley, D. D.</td>
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</table>
May 2, 1893. George Hervey Hallett, A. B., to be Tyndale Fellow.

June 6, 1893. Alfred Gudeman, Ph.D., to be Assistant Professor of Classical Philology.

" " Walter L. Webb, C. E., to be Assistant Professor of Civil Engineering.

May 19, 1893. Charles M. Burk, M. D., to be Instructor in Zoology.

" " Daniel B. Shumway, B. S., to be Instructor in English.

" " Amos Peaslee Brown, E. M., Ph. D., to be Instructor in Mining and Metallurgy.

" " J. Percy Moore, to be Instructor in Zoology.

" " John Harshberger, Ph.D., to be Assistant Instructor in Analytical Botany.

" " Wilson Eyre, Jr., to be Instructor in Pen and Ink Drawing.

" " J. J. Morris, to be Assistant Instructor in Mechanical Engineering.

" " Alexander C. Abbott, M. D., to be First Assistant in Hygiene.

" " Julian Millard, to be Instructor in Architecture.

" " Julius Ohly, Ph.D., to be Instructor in Chemistry.

" " Daniel L. Wallace, to be Assistant in Chemistry.

" " Homer Smith, A. B., to be Instructor in English.

" " Robert Bealle Burke, A. B., to be Instructor in Greek.

" " Josiah Harmar Penniman, A. B., to be Instructor in English.

" " Herbert E. Everett, to be Instructor in Drawing.

" " John Quincy Adams, Ph.D., to be Instructor in Political Science.

" " Charles Worthington, C. E., to be Instructor in Civil Engineering.

" " A. William Schramm, B. S., M. E., to be Instructor in Electrical Engineering.

" " Lucien E. Picolet, to be Instructor in Mechanical Engineering.

" " Edward Wesselhoeft, to be Instructor in German.
May 19, 1893. J. Hartley Merrick, to be Assistant to the Dean.
" " Philip P. Calvert, to be Assistant Instructor in Zoology.
" " Albert T. Clay, to be Instructor in Hebrew.
" " Henry Plasschaert, to be Instructor in Modeling.
Feb. 7, 1893. Dana C. Munro, A.M., to be Instructor in History.
May 19, 1893. Isaac J. Schwatt, Ph.D., to be Instructor in Mathematics.
" " Theodore Lorenz, to be Instructor in French.
" " Edward T. Child, B.S., M.E., to be Instructor in Mechanical Engineering.
" " C. Anderson Willis, M.E., to be Instructor in Mechanical Engineering.
" " C. W. Scribner, A.B., M.E., to be Instructor in Mechanical Engineering.
" " H. W. McConnell, to be Assistant Instructor in Mechanical Engineering.
May 19, 1893. Ingersoll Olmsted, M.B., to be Assistant in Bacteriology.
" " Hermann Fleck, Ph.D., to be Instructor in Chemistry.
" " Owen L. Shinn, to be Instructor in Chemistry.
" " J. Bird Moyer, to be Instructor in Chemistry.
" " Albert S. Bolles, Ph.D., to be University Lecturer on Banking Law and Practice.
" " Maxwell Sommerville, to be University Lecturer on Glyptology.
" " Theophilus P. Chandler, Jr., to be Lecturer in Architecture.
" " Frank Miles Day, B.S., to be Lecturer in Architecture.
" " John Stewardson, to be Lecturer in Architecture.
" " Walter Cope, to be Lecturer in Architecture.
" " Barr Ferree, to be Lecturer in Architecture.
" " William Romaine Newbold, Ph.D., to be Lecturer on Philosophy.
" " Lightner Witmer, Ph.D., to be Lecturer on Experimental Psychology.
" " Charles S. Boyer, B.S., to be Lecturer on Technical Chemistry.
May 19, 1893. Harry W. Jayne, Ph. D., to be Lecturer on Technical Chemistry.

Louis J. Matos, M. E., to be Lecturer on Technical Chemistry.

Abram H. Wintersteen, LL. B., to be Lecturer on Business Law and Practice.

T. Harvey Dougherty, to be Assistant Instructor of Zoology.

Amos J. Boyden, to be Lecturer in Architecture.

Oct. 3, 1893. Horace Clark Richards, Ph. D., to be Instructor in Physics.

William Draper Lewis, Ph. D., to be Lecturer in Institutional Law.

Emory R. Johnson, Ph. D., to be Lecturer on Transportation.

Feb. 6, 1894. Martin Grove Brumbaugh, Ph. D., to be Professor of Pedagogy.

Department of Medicine.

May 2, 1893. Roland G. Curtin, M. D., to be Lecturer on Physical Diagnosis.

Adolph W. Miller, M. D., to be Lecturer on Materia Medica and Pharmacy, and Instructor in Practical Pharmacy.

Henry R. Wharton, M. D., to be Demonstrator of Surgery.

Richard H. Harte, M. D., to be Demonstrator of Osteology.

Thomas R. Neilson, M. D., to be Assistant Demonstrator of Anatomy.

Edmund W. Holmes, M. D., to be Demonstrator of Anatomy.

Albert L. A. Toboldt, M. D., to be Assistant Instructor in Practical Pharmacy.

Judson Daland, M. D., to be Instructor in Clinical Medicine, and Lecturer on Physical Diagnosis.

J. P. Crozer Griffith, M. D., to be Instructor in Clinical Medicine.

Samuel D. Risley, M. D., to be Lecturer on Ophthalmology.
May 2, 1893. Carl Seiler, M. D., to be Lecturer on Laryngology.

" " Gwillym G. Davis, M. D., to be Assistant Demonstrator of Surgery.

" " Edward Martin, M. D., to be Instructor in Clinical Surgery and in Operative Surgery.


May 2, 1893. George H. Chambers, M. D., to be Assistant Demonstrator of Normal Histology.

" " James K. Young, M. D., to be Instructor in Orthopaedic Surgery.

" " Henry W. Cattell, M. D., to be Demonstrator of Morbid Anatomy.

" " Robert Formad, V. M. D., to be Demonstrator of Normal Histology.

" " Arthur A. Stevens, M. D., to be Lecturer on Medical Terminology and Instructor in Physical Diagnosis.

" " Benjamin F. Stahl, M. D., to be Instructor in Physical Diagnosis.

" " Harry C. Deaver, M. D., to be Assistant Demonstrator of Anatomy.

" " John C. Heisler, M. D., to be Prosector to the Professor of Anatomy and Assistant Demonstrator of Obstetrics.

" " Frederick A. Packard, M. D., to be Instructor in Physical Diagnosis.

" " Richard C. Norris, M. D., to be Instructor in Obstetrics, and Lecturer on Clinical and Operative Obstetrics.

" " J. Aubrey Davis, M. D., to be Assistant Demonstrator of Obstetrics.

" " Milton B. Hartzell, M. D., to be Instructor in Dermatology.

" " Charles S. Potts, M. D., to be Instructor in Electro-Therapeutics, and in Nervous Diseases.

" " Leon Brinkmann, M. D., to be Assistant Demonstrator of Anatomy.
John A. Boger, M.D., to be Assistant Demonstrator of Anatomy.

Walter I. Pennock, M.D., to be Assistant Demonstrator of Anatomy.

Herman B. Allyn, M.D., to be Instructor in Physical Diagnosis.

William Schleif, Ph. G., to be Assistant Demonstrator of Pharmacy.

James M. Brown, M.D., to be Instructor in Otology.

William S. Carter, M.D., to be Assistant Demonstrator of Pathological Histology.

W. Constantine Goodell, M.D., to be Instructor in Clinical Gynaecology.

Guy Hinsdale, M.D., to be Lecturer on Climatology.

M. Howard Fussell, M.D., to be Instructor in Clinical Medicine.

Samuel W. Morton, M.D., to be Instructor in Clinical Medicine.

Alfred C. Wood, M.D., to be Instructor in Clinical Surgery.

Ellwood R. Kirby, M.D., to be Assistant Instructor in Clinical Surgery.

Charles L. Leonard, M.D., to be Assistant Instructor in Clinical Surgery.

Joseph McFarland, M.D., to be Demonstrator of Pathological Histology.

George C. Stout, M.D., to be Assistant Demonstrator of Histology.

Robert S. J. Mitcheson, M.D., to be Assistant Demonstrator of Anatomy.

David B. Birney, M.D., to be Assistant Demonstrator of Surgery.

Joseph P. Tunis, M.D., to be Assistant Demonstrator of Surgery and of Anatomy.

John L. Wethered, M.D., to be Assistant Demonstrator of Pathological Histology.

William E. Hughes, M.D., to be Instructor in Physical Diagnosis.
Nov. 7, 1893. J. Alison Scott, M. D., to be Assistant Demonstrator of Morbid Anatomy.

May 2, 1893. Alfred Stengel, M. D., to be Instructor in Clinical Medicine.

" " T. Mellor Tyson, M. D., to be Instructor in Clinical Medicine.

Nov. 7, 1893. Charles W. Dulles, M. D., to be Lecturer on the History of Medicine.

Dec. 5, 1893. Daniel W. Fetterolf, M. D., to be Assistant Demonstrator of Chemistry.

" " Nathaniel A. Cashman, M. D., to be Instructor in Laryngology.

" " Samuel M. Hamill, M. D., to be Instructor in Physical Diagnosis.

" " Henry Toulmin, M. D., to be Instructor in Physical Diagnosis.

Feb. 6, 1894. David Reisman, M. D., to be Demonstrator of Pathological Histology.

Auxiliary Department of Medicine.

Nov. 7, 1893. Edward D. Cope, A. M., Ph. D., to be Professor of Zoology and Comparative Anatomy.

" " William Powell Wilson, Sc. D., to be Professor of Botany.

" " John S. Billings, M. D., LL.D., to be Professor of Hygiene.

May 2, 1893. Charles K. Mills, M. D., to be Professor of Medical Jurisprudence, and Dean of the Faculty.

Nov. 7, 1893. Amos Peaslee Brown, E. M., Ph. D., to be Professor of Mineralogy and Geology.

Department of Dentistry.

May 2, 1893. Robert Huey, D. D. S., to be Lecturer on Operative Dentistry.

" " Edward C. Kirk, D. D. S., to be Lecturer on Operative Dentistry.

" " John D. Thomas, D. D. S., to be Lecturer on Nitrous Oxide.

" " Harry B. McFadden, D. D. S., to be Demonstrator of Mechanical Dentistry.

" " James E. Loder, D. D. S., to be Assistant Demonstrator of Operative Dentistry.

" " Joseph W. White, D. D. S., to be Assistant Demonstarator of Operative Dentistry.

" " Ambler Tees, Jr., D. D. S., to be Assistant Demonstrator of Mechanical Dentistry, and Demonstrator of Continuous Gum Work.

" " R. Hamill D. Swing, D. D. S., to be Assistant Demonstrator of Operative Dentistry, and Demonstrator of Anaesthetics.

" " Frederick W. Amend, Jr., D. D. S., to be Assistant Demonstrator of Mechanical Dentistry.

" " Milton N. Keim, Jr., D. D. S., to be Assistant Demonstrator of Mechanical Dentistry.

" " J. Edward Dunwoody, D. D. S., to be Assistant Demonstrator of Operative Dentistry.

" " Charles A. E. Codman, D. D. S., to be Assistant Demonstrator of Operative Dentistry.

" " Frederic A. Peeso, D. D. S., to be Demonstrator of Crown and Bridge Work.

" " James G. Lane, D. D. S., to be Assistant Demonstrator of Crown and Bridge Work.

" " C. Herbert Wilson, D. D. S., to be Assistant Demonstrator of Mechanical Dentistry.

" " Louis E. Rauch, D. D. S., to be Assistant Demonstrator of Operative Dentistry.

" " J. Thomas Lippincott, D. D. S., to be Assistant Demonstrator of Operative Dentistry.

" " Edmund W. Holmes, M. D., to be Demonstrator of Anatomy.

" " Robert Formad, V. M. D., to be Demonstrator of Normal Histology.


" " Charles Newgarden, D. D. S., to be Assistant Demonstrator of Mechanical Dentistry.

Robert J. Seymour, D. D. S., to be Assistant Demonstrator of Mechanical Dentistry.

DEPARTMENT OF VETERINARY MEDICINE.

May 2, 1893. Alexander Glass, V. S., to be Lecturer on the Theory and Practice of Canine Medicine.

Robert Formad, V. M. D., to be Lecturer on Veterinary Sanitary Science, and Demonstrator of Normal and Pathological Histology and of Morbid Anatomy.

William H. Ridge, V. M. D., to be Demonstrator of Veterinary Obstetrics.

Edwin S. Muir, Ph. G., V. M. D., to be Instructor in Veterinary Materia Medica and Pharmacy.

B. Frank Senseman, V. M. D., to be Demonstrator of Veterinary Anatomy.

John Harshberger, Ph. D., to be Instructor in General Biology, Botany and Zoölogy.

Charles E. Cotton, V. M. D., to be Assistant Demonstrator of Veterinary Anatomy.

Franz Enge, to be Demonstrator of Forging and Horse-shoeing.

DEPARTMENT OF HYGIENE.

May 2, 1893. A. C. Abbott, M. D., to be First Assistant in Hygiene.

May 1, 1894. Mazyck P. Ravenel, M. D., to be Thomas A, Scott Fellow in Hygiene.

May 1, 1894. Ingersoll Olmsted, M. D., to be Assistant in Bacteriology.

May 1, 1894. Hill Sloane Warwick, M. D., to be Assistant in Chemistry.
APPENDIX No. III.

LEGISLATIVE ENACTMENTS BEARING UPON THE BLOCKLEY PROPERTY, PORTIONS OF WHICH NOW CONSTITUTE THE UNIVERSITY DOMAIN.

No. 1.

A FURTHER SUPPLEMENT TO AN ACT INCORPORATING THE CITY OF PHILADELPHIA.

SALE OF ALMSHOUSE GROUNDS AND BUILDINGS AUTHORIZED.

CONDITIONS.

SECTION 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same, That the city of Philadelphia is hereby empowered to make private or public sale, and convey in fee simple or reserving ground rents, the present almshouse grounds, or any part thereof, situate in the Twenty-fourth ward of said city, containing one hundred and eighty-seven acres, more or less, and the buildings thereon erected, subject to the following conditions:

I. That the city of Philadelphia shall reserve a part of said ground, not exceeding forty acres, to be laid out and maintained as an open public place forever, for the health and recreation of the people.

II. That the said city shall also reserve at Pine and South streets, on the river Schuylkill, pieces of ground sufficient, in the opinion of the chief engineer and surveyor of said city, for abutments and approaches thereto, for a bridge or bridges, which may be lawfully authorized to be erected at either of said streets.

CITY MAY PURCHASE LAND AND ERECT ALMSHOUSE.

SEC. 2. That the city of Philadelphia is hereby empowered to purchase land and erect thereon an alms or poor house, (with or without a house of correction and employment, as may be deemed expedient) and in payment thereof to create a loan which shall be exempt from State tax.
PROCEEDS OF SALE, HOW APPLIED.

SEC. 3. That the proceeds arising from the sale of the grounds and buildings specified in the first section of this act, shall be specifically applied to and pledged for the payment of the loan authorized by the second section of this act; and if ground rents shall be reserved, or mortgages taken in payment, the same, when sold or paid off, shall be applied to and for the same purpose.

ELISHA W. DAVIS,
Speaker of the House of Representatives.

JOHN P. PENNEY,
Speaker of the Senate pro tem.

Approved the first day of May, Anno Domini one thousand eight hundred and sixty-two.

A. G. CURTIN.

No. 2.

ORIGINAL PURCHASE BY THE UNIVERSITY IN 1869.

AN ORDINANCE

To authorize the sale of a lot of ground in the Twenty-seventh Ward.

SECTION 1. The Select and Common Councils of the City of Philadelphia do ordain, That the Mayor of the City be and he is hereby authorized to sell to the Trustees of the University of Pennsylvania, their successors and assigns, "All that certain lot or piece of ground, being part of what is commonly known as the Almshouse Farm, situate in the Twenty-seventh Ward of the City of Philadelphia, and bounded and described as follows, to wit: Beginning at a point where the northeastern boundary line of the said Almshouse Farm intersects the middle of the Darby road; thence along said boundary line southeastwardly, to a point where the same intersects the middle line of Thirty-fourth street (as continued); thence along the middle line of said Thirty-fourth street southward, crossing Locust street, to a point where the said line intersects the middle line of Spruce street, thence along the
middle line of Spruce street (as continued) westward to a point where said line intersects the middle line of Thirty-sixth street (as continued); thence northward along the middle line of said Thirty-sixth street, to a point where said line intersects the middle line of said Darby road; thence along the middle line of said Darby road, by its several courses northeastwardly, to the point where said middle line intersects the said northeastern boundary line of the Almshouse Farm, being the place of beginning; for the price of eight thousand dollars an acre." The area of said piece of ground to be ascertained by a survey thereof, to be made by the proper survey officers of the City of Philadelphia: Provided, That before the deeds shall be executed, the streets (excepting Irving street) as proposed unanimously by the Committee on Poor of Councils shall be first opened and dedicated to the public use, so far as the above property is concerned; And provided, however, That the proceeds of said sale shall be paid to the City Treasurer, and form part of the sinking fund of the City of Philadelphia; And provided, also, That the said Trustees shall, when requested by ordinance or the Survey Department, duly dedicate to the City of Philadelphia for public use as streets and highways, all the ground covered by the streets or parts of streets which shall or may pass over said tract of land; And provided, also, That they, the said Trustees, shall, at the time of their execution of the deed, enter into a sufficient agreement with the City as to require them, without expense to said City: to open, grade, pave and curb said streets, and parts of streets and intersections thereof, at such times and manner as may be deemed necessary by the authorities of said City; And provided, also, That said Trustees shall at the same time enter into an agreement with the City that said property, or improvements to be made thereon, shall not be exempt from taxation, except that portion thereof as is actually in use for University purposes, and that even such exemption shall not be claimed until such time as all the other real estate owned by said University, becomes liable to taxation; And provided also, That the terms of sale mentioned in this ordinance shall be accepted and fully complied with by said purchasers, within six months from the date of the approval by the Mayor of this ordinance, and said purchasers shall pay all expenses for stamps and conveyancing.

Sec. 2. That the Mayor of the City be and is hereby authorized to affix the corporate seal of the City to such deed or deeds as
may be necessary to convey the said tract of land to the said purchasers in accordance with this ordinance.

Louis Wagner,
President of Common Council.

Attest—Benjamin Haines,
Chief of Select Council.

Thomas A. Barlow,
President pro tem. of Select Council.

Approved this eighteenth day of December, Anno Domini, one thousand eight hundred and sixty-nine (A. D. 1869).

Daniel M. Fox,
Mayor of Philadelphia.

No. 3.

Acquisition of Site for University Hospital.

An Ordinance

Authorizing the sale and conveyance of a tract of land in the Twenty-seventh Ward to the Trustees of the University of Pennsylvania for hospital purposes.

Whereas, An application has been made to the Councils of the City of Philadelphia by members of the Medical Faculty and Board of Trustees of the University of Pennsylvania, with other citizens, for the grant and conveyance to the said Trustees of the University of Pennsylvania of a tract of land, now in the property of the City, for the purpose of erecting thereon a hospital and buildings pertaining to the instruction to be there given; and in consideration thereof the said Trustees have agreed that the said tract of land when conveyed, shall never be alienated from the said University of Pennsylvania, and to erect and maintain forever on said ground a general hospital containing at least fifty free beds, for the care and relief of the poor in times of sickness or accident.
And whereas, We, the Councils of said City, believe that the proposed object is of the purest benevolence, and a wise disposition of the property of the citizens entrusted to our keeping, therefore:

SECTION I. The Select and Common Councils of the City of Philadelphia do ordain, That for and in consideration of the sum of five hundred (500) dollars in cash, to be paid to the Commissioners of the Sinking Fund of the City, and the covenants and conditions hereinafter set forth, to be kept and performed by the Trustees of the University of Pennsylvania, that the Mayor be and is hereby authorized to sign, seal, acknowledge and deliver on behalf of the City of Philadelphia, the necessary and proper deed of conveyance, whereby all that certain tract or piece of land, situate in the Twenty-seventh Ward, bounded on the north by the middle line of Spruce street, on the east by that of Thirty-fourth street, on the south by that of Pine street, and on the west by that of Thirty-sixth street, containing five and a-half acres, more or less, shall be sold, granted and conveyed unto the said Trustees of the University of Pennsylvania, and their successors, in fee simple, in trust, for and subject, however, to the following uses, covenants and conditions, to wit:

First, That the said tract or piece of land shall be forever held by the said Trustees of the University of Pennsylvania, for the purpose of erecting thereon and maintaining a building or buildings to be devoted to general hospital purposes, as aforesaid.

Second, That the said Trustees shall erect and complete the said building within five years from the first day of July, A. D. 1872.

Third, That said Trustees shall set apart and forever maintain in said hospital, at no time less than fifty free beds, for the use of the poor of the City requiring hospital treatment.

Fourth, That the said Trustees shall report to Councils in the month of January succeeding the erection and completion of said hospital, and annually thereafter, the number of free beds maintained, together with such other information as may be desired by Councils.

Fifth, That in the event of the failure of said Trustees of the University of Pennsylvania to erect and complete the said hospital building within five years from the first day of July, A. D. 1872, or upon said completion they shall refuse or neglect to set apart and forever maintain at all times not less than fifty free beds for
the poor of the City, when requiring hospital treatment, or shall sell or alienate the said tract or piece of land hereby authorized to be conveyed to them, or any part thereof, then such sale and alienation by said Trustees shall be null and void, and the tract or piece of land hereby authorized to be conveyed to said Trustees, with the building or buildings thereon erected, shall revert to, and again become the property and estate of the City of Philadelphia.

SEC. 2. That the covenants and conditions set forth in the first section of this ordinance shall be fully recited in and made a part of the deed and conveyance, to be executed by and between the Mayor on behalf of the City, and the Trustees of the University of Pennsylvania.

SEC. 3. That all ordinances or parts thereof, so far as the same may be inconsistent with the provisions of this ordinance, be and the same are hereby repealed.

LOUIS WAGNER,
President of Common Council.

Attest—JOHN ECKSTEIN,
Clerk of Common Council.

W. E. LITTLETON,
President of Select Council.

Approved this eighteenth day of May, Anno Domini, eighteen hundred and seventy-two (A. D. 1872).

WM. S. STOKLEY,
Mayor of Philadelphia.

No. 4.

ACQUISITION OF LAND IN RETURN FOR CITY PRIZE SCHOLARSHIPS.

AN ORDINANCE

To sell and convey certain lots of land to the Trustees of the University of Pennsylvania.

SECTION 1. The Select and Common Councils of the City of Philadelphia do ordain, That the Mayor of this City be authorized
to sign and affix the seal of the City to a deed, in form to be approved by the City Solicitor, which shall convey unto the Trustees of the University of Pennsylvania and their successors, all that lot of ground in the Twenty-seventh Ward of the City of Philadelphia.

I. All that certain lot or piece of ground situate in the Twenty-seventh Ward of the City of Philadelphia, beginning at the northwest corner of Pine street and Thirty-sixth street, thence extending westward along the north side of Pine street one thousand and seventy-three (1073) feet nine (9) inches to the southeast side of Woodlands avenue, thence northeastward along the same six hundred and twenty-six (626) feet nine and three-eighths (9\frac{3}{8}) inches to the south side of Spruce street, thence eastward along the same five hundred and thirty-four (534) feet nine and three-quarters (9\frac{3}{4}) inches to the west side of Thirty-sixth street, and thence southward along the same three hundred and twenty (320) feet to the north side of Pine street and place of beginning.

II. All that certain triangular lot or piece of ground situate in the Twenty-seventh Ward of the City of Philadelphia, beginning at the corner formed by the south side of Pine street and the northeast side of Cleveland avenue, thence extending eastward along the south side of Pine street nine hundred and ninety-two (992) feet five and three-eighths (5\frac{3}{8}) inches to the northwest side of Guardian avenue, thence southwestward along the same seven hundred and eighty-six (786) feet five and three-eighths (5\frac{3}{8}) inches to the northeast side of Cleveland avenue, and thence northwestward along the same six hundred and thirty-two (632) feet two (2) inches to the south side of Pine street and place of beginning.

III. All that certain lot or piece of ground situate in the Twenty-seventh Ward of the City of Philadelphia, beginning at the corner formed by the south side of Pine street and the southwest side of Cleveland avenue, thence extending southeastward along the west side of Cleveland avenue six hundred and eighty (680) feet five and one-eighth (5\frac{1}{8}) inches to a point, thence southwestward along other ground of the City of Philadelphia one hundred (100) feet and five-eighths (\frac{5}{8}) of an inch to ground of the Woodlands Cemetery, thence northwestward along the same seven hundred and forty-one (741) feet eight and seven-eighths
(8¾) inches to the southeast side of Woodlands avenue, thence along the same twenty-nine (29) feet seven and three-quarters (7¾) inches to the south side of Pine street, and thence eastward along the same eighty-nine (89) feet and one and one-quarter (1¼) inches to the southwest side of Cleveland avenue and place of beginning, reserving thereout a ground rent to the City of Philadelphia of five hundred (500) dollars per annum, redeemable at any time by the payment to the said City of the sum of ten thousand (10,000) dollars, lawful money of the United States, to have and to hold the said land to the said Trustees for the use of the said University of Pennsylvania for its authorized educational purposes, and subject also to the following conditions, to wit: That the said Trustees of the said University of Pennsylvania shall establish and forever maintain at least fifty (50) free scholarships, of an annual value of not less than seven thousand five hundred (7,500) dollars per annum, to be awarded under such conditions as may from time to time be deemed suitable to worthy and deserving students of the Public Schools of Philadelphia: And further, That they shall cause to be made and maintained, on the line of Thirty-seventh street, between Spruce and Pine streets, on the first lot of said ground, a flagged footwalk, open at all times to the public: And further, That said land shall never be alienated by the Trustees of the University of Pennsylvania without the consent of the City: And further, That no buildings other than for educational purposes shall ever be erected thereon: And further, That if Cleveland avenue should be widened to a width not exceeding one hundred (100) feet, the said Trustees will dedicate the land taken to public use.

WILLIAM HENRY LEX,
President of Common Council.

Attest—GEORGE W. KOCHERSPERGER,
Assistant Clerk of Common Council.

GEORGE W. BUMM,
President of Select Council.

Approved this twenty-fourth day of January, Anno Domini one thousand eight hundred and eighty-two (A. D. 1882).

SAMUEL G. KING,
Mayor of Philadelphia.
No. 5.
RESERVATION OF LAND FOR PARK PURPOSES.
AN ORDINANCE
To set apart a portion of the Almshouse property, to be improved for the health and public welfare of the citizens of Philadelphia, and providing for the grading of the same.

SECTION 1. The Select and Common Councils of the City of Philadelphia do ordain, That all the Almshouse property in West Philadelphia, bounded by South street, Spruce street, Thirty-fourth street, Vintage avenue, on to the southern boundary of the city property, and thereto to the Schuylkill river, and Schuylkill river be, and is, hereby set apart for the purposes of being improved, for the health and public welfare of the citizens of Philadelphia.

SEC. 2. That the Chief Engineer and Surveyor is hereby authorized to appoint two laborers to level the ashes, etc., that may be placed on said ground, so that the property may be filled up to a proper level to the Port Warden's line; and that all citizens are hereby authorized to dump ashes, etc., thereon, under the direction of the Chief Engineer and Surveyor, until the same is raised to a proper level.

SEC. 3. That the Chief Commissioner of Highways is authorized to draw warrants for the payment of said laborers, for grading streets, in the annual appropriation to the Department of Highways.

Approved the sixth day of July, A. D. 1883.

SAMUEL G. KING,
Mayor of the City of Philadelphia.

No. 6.
ORIGINAL SALE OF LAND NOW OCCUPIED BY FOULKE & LONG INSTITUTE.*
AN ORDINANCE
Directing the Mayor and Commissioner of Markets and City Property to offer at public sale a certain lot of ground in the Twenty-seventh Ward.

SECTION 1. The Select and Common Councils of the City of Philadelphia do ordain, That the Mayor and Commissioner of

* This piece of land was subsequently purchased by the Foulke & Long Institute from Joseph M. Bennett, Esq.
Markets and City Property be, and they are, hereby authorized and directed to offer at public sale all that certain lot of ground belonging to the City of Philadelphia described as follows, to wit: Beginning at the northeast corner of Thirty-fourth and Locust streets, in the Twenty-seventh Ward of said city, thence extending north along the east side of said Thirty-fourth street a distance of one hundred and ninety-six (196) feet ten and one-eighth (10\(\frac{1}{8}\)) inches, to a point; thence along a line bearing south fifty (50) degrees twelve (12) minutes thirty (30) seconds east, a distance of four hundred and eight (408) feet eleven and one-eighth (11\(\frac{1}{8}\)) inches, to a point on the north side of Locust street; thence west along the north side of said Locust street, a distance of three hundred and fifty-eight (358) feet five and one-half (5\(\frac{1}{2}\)) inches, to the place of beginning: Provided, That the sale of said lot shall be subject to the confirmation of said Councils.

Approved the fifth day of April, A. D. 1884.

SAMUEL G. KING,
Mayor of Philadelphia.

No. 7.

ACQUISITION OF LAND NOW OCCUPIED BY THE WISTAR INSTITUTE.

AN ORDINANCE

To sell and convey a certain lot of land to the Trustees of the University of Pennsylvania.

SECTION I. The select and Common Councils of the City of Philadelphia do ordain, That the Mayor of this City be authorized to sign and affix the seal of the city to a deed, in form to be approved by the City Solicitor, which shall convey unto the Trustees of the University of Pennsylvania and their successors, all that certain lot or piece of ground situate in the Twenty-seventh Ward, of the City of Philadelphia, described as follows, viz: Beginning at a point the intersection of the westerly line of Thirty-sixth street with the southeasterly line of Woodland avenue; thence extending along the southeasterly line of said Woodland
avenue south 70 degrees, 18 minutes and 7 seconds west 248 feet 3 inches to ground occupied by the City Police Station; thence along said ground south 4 degrees, 20 minutes and 26 seconds east 115 feet 6 inches to the northerly line of Spruce street; thence along said line south 78 degrees, 59 minutes east 182 feet 10½ inches to the westerly line of said Thirty-sixth street; thence along the same north 11 degrees 1 minute east 237 feet 11 inches to the southeasterly line of said Woodland avenue and place of beginning; in consideration of the sum of one dollar to have and to hold the said lot to the said Trustees for the use of said University for its authorized educational purposes, subject also to the following conditions: That the said land shall never be alienated by the Trustees of the University of Pennsylvania without the consent of the City, and further, that no buildings other than such as shall be essential to the educational system of the University shall be erected thereon; and further, That the said Trustees will erect and maintain a fire-proof library building, and provide means to maintain it, as a free library of reference open to the entire community, and that work thereon shall be begun within four months from the date of the conveyance.

Approved the twenty-first day of March, A. D. 1888.

EDWIN H. FITLER,
Mayor of Philadelphia.

No. 8.

VACATION OF LOCUST STREET FROM COLLEGE CAMPUS.

AN ORDINANCE

To strike from the plan of the City Locust street, between Woodland avenue and Thirty-fourth street, in the Twenty-seventh Ward.

SECTION 1. The Select and Common Councils of the City of Philadelphia do ordain, That the Department of Public Works be authorized to revise Plan No. 43, by striking therefrom Locust street between Woodland avenue and Thirty-fourth street, in the Twenty-seventh Ward.

Approved the third day of April, A. D. 1888.

EDWIN H. FITLER,
Mayor of Philadelphia.
No. 9.

PURCHASE OF LAND, NOW OCCUPIED BY LABORATORIES, AND ALSO OF THAT NOW KNOWN AS FRANKLIN FIELD.

AN ORDINANCE

To confirm the sale of certain real estate belonging to the City of Philadelphia.

SECTION I. The Select and Common Councils of the City of Philadelphia do ordain, That the sale made, after due advertisement, on Tuesday, twelfth day of March, Anno Domini 1889, by Messrs. M. Thomas & Sons, auctioneers, at public sale, by order of Edwin H. Fitler, Mayor, and William S. Stokley, Director of the Department of Public Safety, pursuant to the provisions of an ordinance approved January 24, 1889, entitled "An Ordinance directing the Mayor and Director of the Department of Public Safety to offer at public sale five certain lots or pieces of ground in the Twenty-seventh Ward, to wit: No. 1. All that lot of ground situate on the south side of Locust street, on the east side of Thirty-fourth street, on the northeasterly side of South street, and on the northwesterly side of Thirty-third street, in the Twenty-seventh Ward, containing in front, on said Locust street, four hundred and forty-one (441) feet, one and one-eighth (1 1/8) inches on said Thirty-third street, four hundred and forty-two (442) feet five and one-half (5 1/2) inches, on said South street two hundred and thirty-eight (238) feet nine and seven-eighths (9 7/8) inches. No. 2. All that certain lot of ground at the northeast corner of Thirty-third and South street, in the Twenty-seventh Ward; thence extending along the said Thirty-third street northeasterly three hundred and forty-six (346) feet to the line of property lately leased to the Keystone Battery; thence extending along the said line southwesterly one hundred and seventy-four (174) feet eight and one-quarter (8 1/4) inches to a point; thence still along the said line northeasterly ninety-six (96) feet five and one-half (5 1/2) inches to Marston street, thence along the said Marston street southeasterly three hundred and fifty-four (354) feet to Meadland avenue; thence by the said Meadland avenue southwesterly four hundred and forty-two (442) feet five and one-half (5 1/2) inches to South street; and thence by said South street northwesterly five
hundred and twenty-eight (528) feet eight and one-quarter (8¼) inches to Thirty-third street, and place of beginning. No. 3. All that lot of ground beginning at the northeast corner of Meadland avenue and South street, in the Twenty-seventh Ward; thence extending along the said Meadland avenue northeasterly four hundred and forty-two (442) feet five and one-half (5½) inches to Marston street; thence along the said Marston street southeasterly one hundred and sixty-six (166) feet five and three-eighths (3¾) inches to the line of land now or late, of the West Chester and Philadelphia Railroad Company; thence, by the same, in a southwesterly direction, four hundred and forty-six (446) feet nine and three-quarters (9¾) inches to South street; and thence by said South street northwesterly two hundred and fourteen (214) feet three and one-eighth (3¼) inches to the place of beginning, unto William Pepper, Provost of the University of Pennsylvania, for the sum of one hundred and forty-nine thousand and eight hundred (149,800) dollars. No. 4. All that triangular lot of ground situate at the north corner of Meadland avenue and Marston street, in the Twenty-seventh Ward, beginning at the intersection of said Meadland avenue and Marston street; thence northeasterly along said Meadland avenue eleven (11) feet one and one-quarter (1¼) inches to the Almshouse line, being the northeasterly line of property belonging to the City of Philadelphia, and known as the Almshouse property; thence northwesterly one hundred and thirty-six (136) feet one and three-eighths (1¾) inches along the said Almshouse line to the northwesterly side of the said Marston street; thence southeasterly along the line of the said Marston street, one hundred and thirty-five (135) feet eight (8) inches, to the place of beginning. No. 5. All that lot of ground situate on the east corner of Meadland avenue and Marston street, in the Twenty-seventh Ward, beginning at the point of intersection of said Meadland avenue and Marston street; thence northeasterly, along said Meadland avenue sixteen (16) feet one and one-eighth (1¾) inches, to the Almshouse line, being the northeasterly line of property belonging to the City of Philadelphia, and known as the Almshouse property; thence southeasterly along the Almshouse line, one hundred and thirty-eight (138) feet eight and seven-eighths (8¾) inches, to the line of the West Chester and Philadelphia Railroad Company; thence along the said line southerly twenty-nine (29) feet and three (3) inches, to the
northeast side of said Marston street; thence northwesterly, along said Marston street, one hundred and forty-nine (149) feet one and three-quarters \((1\frac{3}{4})\) inches to Meadland avenue, and place of beginning, to J. M. Gummey & Sons, for the sum of two thousand two hundred (2200) dollars, be and the same is hereby confirmed.

SEC. 2. The Mayor of the City of Philadelphia is hereby authorized, empowered and directed, upon the said purchasers paying the amounts of purchase money, after deducting the necessary expenses of said sale, to execute, under the corporate seal of the City of Philadelphia, acknowledge and make proof of said seal, and deliver a deed conveying said premises unto said purchasers in fee absolutely: Provided, That the said purchase money shall be paid within thirty (30) days after the passage of this ordinance.

The said payment to be made to the City Treasurer, through the Department of Public Safety, Bureau of City Property.

Approved the thirtieth day of March, A. D. 1889.

EDWIN H. FITLER,
Mayor of Philadelphia.

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ACQUISITION OF THE NORTHEAST CORNER OF THIRTY-FOURTH AND SPRUCE STREETS.

AN ORDINANCE

To vacate a certain piece of ground at Thirty-third and South streets, for the purpose of straightening streets, and to convey the same to the Trustees of the University of Pennsylvania.

SECTION I. The Select and Common Councils of the City of Philadelphia do ordain. That all that tract of land beginning on the east side of Thirty-fourth street, at a point two hundred and twenty-five (225) feet seven and one-quarter \((7\frac{3}{4})\) inches south of the south line of Locust street; thence southwardly along the east line of Thirty-fourth street one hundred and fifty (150) feet, more or less, to its intersection with the north side of Spruce street; thence eastwardly along the said north line of Spruce street
one hundred and ninety (190) feet, more or less, to its intersection with the west line of Thirty-third street; thence northeastwardly along the west line of Thirty-third street fifteen (15) feet, more or less, to a point on the west line of Thirty-third street, four hundred and forty-two (442) feet five and one-half (5½) inches south-westwardly of the south side of Locust street; thence northwestwardly two hundred and sixty (260) feet three and one-eighth (3⅛) inches to the point of beginning, shall be vacated, and that so much of the ordinance approved June 21, 1892, providing for the paving of the said piece of ground hereby vacated be, and the same is hereby repealed, and that the Mayor of this City be authorized to sign and affix the seal of the City to a deed for the consideration of one (1) dollar, in form to be approved by the City Solicitor, which shall convey unto the Trustees of the University of Pennsylvania all the tract of land thus vacated and hereinabove described, to have and to hold the said land to the said Trustees for the use of the said University of Pennsylvania for its authorized educational purposes, and subject to the conditions that said land shall never be alienated by the Trustees of the University of Pennsylvania without the consent of the City, and further, that no buildings, other than for educational purposes, shall ever be erected thereon.

Approved the thirteenth day of January, A. D. 1892.

Edwin S. Stuart, Mayor of Philadelphia.

No. 11.

Transfer of Land by the University to the Wistar Institute.

An Ordinance

To authorize the Trustees of the University of Pennsylvania, to sell and convey, part of the lot of land conveyed to the said Trustees by the City of Philadelphia, under the terms of an ordinance approved the twenty-first day of March, 1888.

Section 1. The Select and Common Councils of the City of Philadelphia do ordain, That the consent of the City of Philadelphia is hereby given to the conveyance of such portion as shall be found expedient, of a lot of land in the Twenty-seventh Ward, of
the City of Philadelphia, as was conveyed to the Trustees of the University of Pennsylvania under the authority of an ordinance approved March 21st, 1888, by the Trustees of the University of Pennsylvania, to a corporation to be organized for the purpose of establishing a museum to receive and preserve anatomical and other specimens, and to promote the study of biology, anatomy, and kindred sciences.

Approved the nineteenth day of March, A. D. 1892.

EDWIN S. STUART,
Mayor of Philadelphia.

No. 12.

ACQUISITION OF LAND FOR MUSEUM AND PARK PURPOSES.

AN ORDINANCE

To authorize the immediate opening of a portion of the Almshouse grounds set apart for park purposes by the Ordinance approved July 6, 1883, for public use as a Museum and Botanical Garden and Park, and conveying the same to the Trustees of the University of Pennsylvania in trust for the purposes herein set forth.

SECTION I. The Select and Common Councils of the City of Philadelphia do ordain, That so much of the Almshouse grounds which was set apart for public park purposes under and by virtue of the ordinance approved July 6, 1883, as is described as follows: All that certain lot or piece of ground in the Twenty-seventh Ward of the City of Philadelphia, beginning at the southeast corner of Thirty-fourth and Spruce streets, thence extending eastward along the south side of Spruce street to its intersection with the southwest side of South street, thence along the same southeastward to the northwest boundary of the right of way of the West Chester and Philadelphia Railroad, thence along the same southwestward to the northeast side of Almshouse or Blockley lane, thence along the same to the northwest boundary line of the present Water Department storage yard, thence following the direction of this line to the northeast for a distance of four hundred (400) feet, more or less, thence northwesterly along a line parallel to and thirty (30) feet to the northeast of the northeast wall of the present Almshouse stone barn, for a distance of three hundred and fifty (350) feet, more or less, thence southwestward
along a line parallel to and about thirty (30) feet to the northwest of the northwest wall of the aforesaid barn, to its intersection with the east side of Thirty-fourth street, thence along the same to the south side of Spruce street, and place of beginning, containing eight acres, more or less, shall be forthwith opened to use as a public park forever.

SEC. 2. For the purpose of securing the suitable improvement of the same, said lot of ground above described shall be conveyed to the Trustees of the University of Pennsylvania in trust to lay out and maintain the same forever as and for a Museum and a Botanical Garden and Park without expense to the City of Philadelphia, to be opened to the free access of the public at all times forever, under suitable regulations, to be from time to time agreed upon by the said Trustees and Mayor of the said city; and also to erect thereon a Museum of Science and Art, without expense to the said city: Provided, That the said grounds shall be placed in the proper condition for the purposes of this ordinance within five years from the date of the execution of the deed creating and accepting said trust herein created, said deed of trust to be prepared by the City Solicitor with all suitable covenants and provisions necessary to carry out the intent of this ordinance, and secure the privileges to all parties herein named, to be executed by the Mayor of the City, and the said Trustees, with the proper legal authority, accepting the same: And provided further, That in the event of the failure on the part of said Trustees of the University of Pennsylvania to place the said grounds in the proper condition for the purposes hereof within the said five years, or of maintaining the same as a Museum and a Botanical Garden and Park, and keeping the same open to the public as aforesaid at all times hereafter forever, or shall divert the said ground to any other purposes than those specified in this ordinance, then the trust created by this ordinance shall cease and determine, and this ordinance and all privileges granted hereunder shall become null and void, and the said property shall revert to the City of Philadelphia free, clear and discharged of any and all trusts hereby created, or expenses or obligations created by reason of this ordinance.

Approved the thirtieth day of March, A. D. 1894.

EDWIN S. STUART,
Mayor of Philadelphia.
ESTABLISHMENT OF THE PHILADELPHIA MUSEUMS.

AN ORDINANCE

For the creation of a Board of Trustees for establishing Public Museums, and for placing in its custody certain educational and economic collections belonging to the City of Philadelphia, and to authorize certain transfers therefor.

SECTION I. The Select and Common Councils of Philadelphia do ordain: That with a view of promoting the development of a great group of museums, general, scientific, economic, educational, and commercial, the Councils of the City of Philadelphia do hereby delegate the collections secured by Professor W. P. Wilson from the World's Columbian Exposition, at Chicago, as the representative of the Mayor and Councils of the City of Philadelphia, in trust to a Board of Trustees, to be known as the Board of Trustees of the Philadelphia Museums, composed of the Mayor of the City of Philadelphia, ex-officio; the Presidents of both Branches of City Councils, ex-officio; the President of the Board of Public Education, ex-officio; the Superintendent of Public Schools, ex-officio; a representative of the Board of Public Education, and of the Park Commission, elected by both representative bodies, with one citizen to be elected annually by each Branch of City Councils; and Charles H. Cramp, Clarence H. Clark, Daniel Baugh, Sara Y. Stevenson, Thomas Dolan, William Pepper, Charlemagne Tower, Jr., and Arthur Biddle; and which Board of Trustees shall take steps to secure funds and a suitable site for museum buildings to accommodate said collections, and shall have power to elect its own officers: Provided, That all vacancies in the said Board of Trustees shall be filled by the Mayor, subject to confirmation by Select Council, excepting ex-officio members, representatives of Boards of Public Education and Park Commission, and the citizens elected by each branch of Councils.

SECT. 2. The City Controller is hereby authorized and directed to make the following transfers, viz: from Item 53½ for educational museum seven thousand five hundred (7,500) dollars and eight (8) cents in the annual appropriation to the Board of Public Education for the year 1894, and from Item 19½ for economic museums ten thousand and ninety-two (10,092) dollars and four (4) cents, in the annual appropriation to the
commissioners of Fairmount Park for said year, in all seventeen thousand five hundred and ninety-two (17,592) dollars and twelve (12) cents, to new Item 10½ in the annual appropriation to the Mayor for said year for the purposes of the Board of Trustees mentioned in the first section of this ordinance.

Approved the fifteenth day of June, A. D. 1894.

Edwin S. Stuart,
Mayor of Philadelphia.

APPENDIX No. IV.

DEPARTMENT OF ARCHAEOLOGY AND PALEONTOLOGY.

REPORT OF THE PRESIDENT.

The Department of Archaeology and Palaeontology was created by the Trustees of the University of Pennsylvania in December, 1891.

Its purposes are to provide instruction in Archaeology, Ethnology and Palaeontology, and to extend scientific inquiry by means of original investigation into the study of these subjects. Among the means employed by it to accomplish these are: first, the establishment of a Museum and Library which shall be open to students and to others seeking information in this direction; second, courses of lectures; and third, the sending out of exploring expeditions, or the assisting of explorers already in the field who may be pursuing researches in which this Department is interested.

The Department is now made up of seven Sections, which are devoted respectively to the following subjects: American and Prehistoric Archaeology, Asia and General Ethnology, Babylonian Archaeology, Egyptian and Mediterranean Archaeology, Glyptology, Casts and Palaeontology.

The government of the Department is vested in a Board of Managers. Under them is the Director of the Museum, who has charge of the relations of the Museum with other museums and institutions, and is its general executive officer. Each of the seven Sections of the Department is under the supervision of a
special committee of the Board of Managers; and the Museum is divided into seven corresponding Sections, each in charge of a Curator who is made responsible for the care of its collections.

The Department is supported by the annual subscriptions of the members of the University Archaeological Association, and by gifts from its sympathizers and friends. It receives no financial aid from the University.

Its collections are displayed at present in the Library Building of the University, at Thirty-fourth street and Woodland avenue; though this accommodation is far short of what is necessary for its growing demands by reason of the constantly increasing number of objects of great interest and rarity which it is acquiring.

A movement is now being made to secure money for the erection of a commodious, convenient, fire-proof building upon the grounds of the University to which the collections of the Department may be removed. This building is intended to provide for the proper arrangement and display of the objects in order that they may be made available to students and accessible to visitors; to contain lecture rooms in which instruction may be given directly within reach of the specimens which illustrate it; to receive donations of collections already formed, and to offer a safe repository for such loan collections as their owners may consent to exhibit there, to the advantage of the University of Pennsylvania and the benefit of the general public.

The attention of the members of the Association is most earnestly directed to the urgency of this undertaking. A considerable sum of money has already been subscribed toward this building fund which, though not equal to the needs, assures the ultimate accomplishment of the purpose in view; and it is believed that the money yet required will be subscribed by those who desire to secure to this community the advantages derived from so broad a field of enlightenment in Philadelphia.

The practical work of the Department during the last year has been of unusual importance, notably in connection with the great Spanish-American Exhibition held at Madrid during the summer of 1893, in honor of the discovery of America, as well as with the World's Columbian Exposition at Chicago, in 1894.

The Department sent to the Exhibition at Madrid, under the personal charge of the Director, Mr. Culin, a collection of American Archaeological specimens which met there with an exceedingly
cordial reception from the Spanish authorities, and proved to be of great interest to the visitors and scholars who went to Madrid upon that occasion from every part of Europe. At the close of the Exhibition the Junta Directiva awarded to the Department in recognition of its merits as an exhibitor, a medal of the highest class. The Director was enabled through this Exhibition at Madrid to acquire very important additions to the collections of the Museum.

At the Columbian Exposition at Chicago, the display made by the Department of Archaeology and Palæontology was much larger and more important than at Madrid, because the collections were in this instance more readily transported to destination; and the exhibits included, besides the specimens from the American Section, very carefully selected illustrations of ancient civilization from the cases of our Egyptian, Mediterranean and Babylonian Sections at the Museum.

The Egyptian and Mediterranean Section exhibited collections representing the very latest archaeological work done in Egypt by Mr. W. M. Flinders-Petrie, as well as a collection from Cyprus, obtained from the well-known explorer Dr. Max Ohnefalsch-Richter; and it is especially gratifying to note that the collection from ancient Nippur exhibited by the Babylonian Section, represented at Chicago the only work of exploration carried under the auspices of an American Institution in the field of the Old World Archaeology.

The importance of the scientific results of this expedition cannot be overestimated. Some of the best specimens were displayed, carefully classified and labeled by the Curator, Dr. Hermann V. Hilprecht, and the whole work represented by the exhibit shed lustre not only upon the Department of Archaeology, but upon the University of Pennsylvania.

As a result, we have the satisfaction of knowing that our Department by thus contributing to the dissemination of knowledge and information, not only excited the evident interest of the public, but took rank by the assent of those officially appointed to decide, among the foremost representatives of learning and scientific investigation.

The Department received seven awards from the judges of the Exposition, and it was also enabled to make exceedingly valuable additions to its collections through the courtesy of foreign governments and their representatives. In this
connection are to be mentioned the generous gifts of the Government of Costa Rica and the Government of Venezuela, as well as a valuable exchange made with the Imperial Museum of Tokio, Japan.

The obligations of the managers are due to several individual supporters of the Museum who contributed money after the Columbian Exposition had closed, to enable us to take advantage of an opportunity not likely to recur, and to secure several valuable additions to our collections which otherwise must have gone elsewhere.

The American Section, of which Mr. Henry C. Mercer has been elected Honorary Curator, has extended its investigations through Mr. Mercer's personal activity during the year, and with noteworthy results in the Valley of the Delaware River in Pennsylvania and New Jersey, and into the prehistoric caves of Tennessee. It has enriched its collection also by generous gifts and by the loan of many valuable specimens. It is especially indebted in this respect to Mr. Charles Laubach, Dr. Robert H. Lamborn, Mr. F. C. Macauley, Dr. C. C. Abbott and Dr. Carl Lummoltz, the latter of whom has recently presented a series of objects illustrating the life of the tribes living in the caves of the Sierra Madre (Chihuahua), including pre-Columbian as well as modern skulls, etc., collected by him during his recent expedition into northern Mexico.

The work of the Babylonian Section has been industriously carried on by the Curator, Dr. Hermann V. Hilprecht, in three different directions, aside from the devotion of much time and careful study to the cleaning, cataloguing and labeling of the "Nippur Collections" now at the Museum, and from the careful preparation and display of the Chicago Exhibit which safely returned in December.

First. The excavations at Nippur have been continuously pursued under the personal supervision of the Director, Mr. J. H. Haynes, in the summer season as well as during the winter months, and the very important result has been obtained that the great Temple of Bél from the top to its foundation, about 140 feet in height, is now almost completely uncovered, and all its annexes and shrines will soon be thoroughly explored. It is expected that discoveries of a permanent value to archaeological science will be made upon that site during the coming year. It has already produced many inscribed stones, cuneiform tablets and other
objects illustrative of the temple service, the life, customs and religion of the Babylonian people 4,000 years before the Christian era.

Second. The first part of the results of the Babylonian Expedition was published during the year, ("Old Babylonian Inscriptions chiefly from Nippur," by H. V. Hilprecht, Ph. D., Philadelphia, 1893), and the second part is expected to be published through the liberality of the American Philosophical Society within the next few months. A volume upon the cuneiforms texts of the Cassite period (c. 1700–1200 B. C.), and another upon the tablets from Cappadocia, of which the Museum possesses the richest collection, are also in the course of preparation.

Third. During the summer of 1893, Dr. Hilprecht was sent to Constantinople by the Babylonian Publication Committee, in order to examine the inscriptions of the cuneiform tablets which had been deposited there according to the laws governing the disposal of such objects in the Turkish Empire. He spent five weeks in making these investigations, and at the end of that time he was requested by His Excellency, Hamdy Bey, Director General of the Imperial Ottoman Museum, to remain in Constantinople five weeks longer for the purpose of reorganizing the Semitic Section of the Imperial Museum and furnishing the basis for a catalogue for that section. Dr. Hilprecht complied with the request, and, in recognition of his services, Hamdy Bey presented to the University of Pennsylvania a number of valuable casts of Babylonian, Phœnician, Sabæan and Greek inscriptions.

Rev. E. W. Klingensmith, who during the past year has been studying Semitic languages in the University, has received the Assyrian fellowship for the year 1893–1894.

The scientific value and the influence of the Egyptian Section have been widely extended by the patient industry and the scholarly attainments of Mrs. Cornelius Stevenson, its Honorary Curator, during the past year. Its contribution to the World's Columbian Exposition at Chicago, which was especially notable among the foremost exhibits illustrative of the history of civilization, did great service to the University of Pennsylvania, by bringing it into contact with the representatives of other universities and of learned societies, as well as with scholars, from every part of the world. An important result to the Museum has been the loan made to it, at Mrs. Stevenson's solicitation, of the " de Potter Collection," one of the most valuable collections of
Egyptian bronze statuettes and other small objects in this country. Another result of scientific value was the co-operation of this Section with the Drexel Institute and the Academy of the Fine Arts to bring to Philadelphia for public exhibition the rare Graeco-Egyptian portraits known as the "Graf Collection," which the owner consented to deposit at the Academy of the Fine Arts, in Philadelphia, for several weeks after the close of the Columbian Exposition and before returning with it to Europe. During the presence here of this collection Mrs. Stevenson delivered two public lectures upon Ancient Painting, before large and interested audiences—one at the Drexel Institute and the other at the Academy of the Fine Arts—upon which occasions she used the portraits of this precious collection to illustrate her subject.

Mrs. Stevenson has also delivered a series of lectures, in the course of which she has received valuable assistance from Dr. Daniel G. Brinton, Mr. Henry C. Mercer, and Dr. Morris Jastrow, Jr., at the New Century Club, for the purpose of directing attention to the subject of archaeology and of developing more general interest in the studies relating to it. She has met there with extremely promising results; and, in addition to this work, she has arranged with the American Journal of Archaeology for the publication of the collections in the Egyptian Section.

The Section is indebted to the generous interest of Mrs. John Harrison, who has added to her numerous former gifts a fine mummy of the Ptolemaic period, which she secured whilst she was in Egypt, in 1892, as well as many other objects of importance. It owes its grateful recognition, also, to Dr. Robert H. Lamborn, to Mr. Daniel Baugh, to Mr. Harry Rogers, to Mrs. George L. Harrison, Jr., to Mrs. William Weightman, Jr., and to Mr. Charles H. Cramp—all of whom have made valuable contributions to the Museum.

A very curious Roman portrait bust, from El-Khargeh, in the Great Oasis, formerly belonging to the "Graf Collection" of Graeco-Egyptian Mummy-portraits, as well as a fine gold ring of King Amenhotep III (?), were purchased by the Egyptian Section, for the Museum, as also a number of historical scarabs, with the purpose of beginning the formation of a chronological series. In this connection it is hoped that travelers upon the Nile will be mindful of the University Museum, and of the importance of increasing its collections.
The Section of Glyptology was established by Professor Maxwell Sommerville, who, after having devoted many years to the study of the glyptic art, has made a rare collection of gems and talismans, now widely known as the "Sommerville Collection." This collection Professor Sommerville brought with him to America upon his return from an extended residence abroad, and, with a patriotic desire for the advancement of culture in his own country, he has deposited it, to that end, for public inspection, in the Museum of Archaeology and Palæontology of the University of Pennsylvania, where he has also consented to perform the service of Curator of the Section of Glyptology.

The Section having been thoroughly organized during the past year, and having obtained a distinct position in the Museum, careful attention has been given to the systematic classification of the objects, with reference to the epochs which they represent respectively. At the same time no opportunity has been neglected which might afford new acquisitions. Professor Sommerville reports that he examined personally the mass of antique objects from every part of the world that was offered for sale at the Columbian Exposition at Chicago. He found, however, comparatively few specimens of great intrinsic value which are not already well represented in the Museum, though he acquired some interesting engraved gems and two Babylonian cylinders, one of which bears upon it a figure apparently undergoing the punishment of flagellation. He has increased the collection also by the purchase of amulets, which he considers his richest acquisition in Chicago, and of talismans from Algiers, Bulgaria, Korea, India, Johore, Syria, and Turkey, with specimens from the Pueblo Indians.

The Curator has continued throughout the year his work of preparing a technical description of the collection, of which some sixteen hundred objects still remain to be described.

By the aid of private subscriptions made by members of the Board of Managers of the Museum, glass cases have been furnished for the display of the collection, in which it is now arranged, in the west and southwest rooms of the Glyptic Section on the upper floor of the Library Building of the University of Pennsylvania.

Professor Sommerville has directed the construction, at his own expense, of 267 new velvet-lined cases, for the purpose of exhibiting separate gems and talismans to greater advantage.
He has, also, decorated the walls of the rooms of his Section with East India textiles. By a decision of the Board of Managers, this Section will be open to the public upon Monday and Wednesday in every week, from 3 o'clock p.m. to 5, and Professor Sommerville desires to be quoted as saying, that "these facilities being offered, it is hoped that an increased interest in the welfare of our University Museum may be aroused in the community by these evidences of our progress."

A Section of Casts has been established in the Museum during the past year, under the chairmanship of Arthur Biddle, Esq., of which Mrs. Charles Platt, Jr., has accepted the secretaryship. The first meeting of its committee was held on the seventh of November, 1893, and upon that occasion it was decided to lay the foundation of a collection of casts by purchasing certain reproductions of ancient Greek and Roman sculpture that had been exhibited during the summer at Chicago. The cost of those objects was afterwards found, however, to be so great, that the means of the Section would not justify their acquisition. It was then decided to raise a fund for the purpose of buying a number of casts which were at the Peabody Museum of Archaeology, and were the result of important scientific explorations undertaken in Honduras and Guatemala under the auspices of Harvard University; and a sub-committee, consisting of Mrs. Cornelius Stevenson, Chairman, Mrs. Arthur V. Meigs, Mrs. Charles Platt, Jr., Mr. Wilson Eyre, Jr., and Mr. Biddle was appointed to superintend directly the purchase of such casts as may be considered desirable for the Museum. This sub-committee has decided to make a purchase of certain of the casts at the Peabody Museum.

A collection of photographs has already been bought by the Section of Casts to illustrate interesting archaeological objects at Copan (Honduras); and in furtherance of the general purposes of this Section, the committee has determined to hold an entertainment at the Academy of the Fine Arts on the fourth of April, the net proceeds of which shall be divided equally between the Section of Casts and the Academy of the Fine Arts.

Through the efforts of the committee of this Section, in which the zealous interest of Mrs. Charles Platt, Jr., is especially to be distinguished, the sum of $1000 has already been raised by subscription for the extending of this very promising new development in the University Museum.
The Section of Asia and General Ethnology was formed at the annual meeting of the University Archaeological Association in January, 1894, out of what was formerly designated the Oriental Section. Its development thus far, although of unquestionable importance, has been confined to one or two special branches of ethnology. At the request of the management of the World's Columbian Exposition, Mr. Stewart Culin, the Curator of the Oriental Section, was enabled, by his presence in Chicago, to exhibit there the important collection of Oriental games which he has formed with unexpectedly interesting results. Mr. Culin declares, in his annual report to the Board of Managers of the department, that he has succeeded in demonstrating the family relation of most of the principal games of Europe and Asia, and their common origin in many instances. He points out, also, the remarkable resemblance between them and the native games of the American Indians, which he believes to arise from a parallel development, rather than from transmission.

A detailed report, in which the American games will be described by Mr. Frank Hamilton Cushing, and the Oriental games from specimens in the University Museum, by Mr. Stewart Culin, will shortly be published by the United States Bureau of American Ethnology, at Washington.

The late acquisitions of this Section, made up largely of objects obtained at the Columbian Exposition, include an important series from H. H. The Sultan of Johore; Chinese porcelain images; masks, weapons, etc., from Ceylon, and games of all countries; a series of military banners from Korea, and a valuable deposit of Indo-Greek sculptures from Afghanistan.

The Archaeological Library, begun a year ago by Dr. Robert H. Lamborn, who then deposited 400 volumes for the use of students of archaeology, has been greatly added to by the generosity of the founder, and to-day numbers over 1800 volumes; twenty more boxes of books are announced as on the way.

The usefulness of this adjunct to the Museum cannot be overestimated, and the enlightened liberality of Dr. Robert H. Lamborn is worthy the highest recognition.

The Museum is opened to students and to the public every week-day, from 10 o'clock a.m. to 5 p.m.

Respectfully submitted,

CHARLEMAGNE TOWER, JR.,
President.
APPENDIX No. V.

REPORT ON UNIVERSITY EXHIBITS IN COLUMBIAN EXPOSITION.

DR. WILLIAM PEPPER, Provost.

January 2, 1894.

Dear Sir: I have the honor to report to you, and to the Board of Trustees, the completion of the work entrusted to me in Chicago during the past year. This work was of two kinds. First, the making of an exhibit in the Department of Liberal Arts of the World's Columbian Exhibition, and second, the securing of specimens, objects, books and other materials for the enrichment of the University laboratories and libraries.

The exhibit of the University had an excellent position in the south gallery of the Manufactures and Liberal Arts Building, fronting on two main aisles. The space occupied was 48 by 28 feet or about 1300 square feet. This was about half the space assigned to Princeton, about one-fifth of the space occupied by Harvard, and was about equal to the space of the University of Michigan. The fact that space was not assigned to the University until late in February, 1893, interfered somewhat with the preparation of the exhibit, as it was then too late to make special preparation in the various laboratories. The exhibit as finally arranged consisted of these parts:

1. A collection of 142 photographs illustrating the exterior of all the buildings, and the interiors of all departments.

2. An exhibit from the School of Architecture, consisting of drawings and plans, the work of the students of that Department.

3. An exhibit of the Veterinary School, consisting of Pathological preparations, the work of the students.

4. A Biological exhibit of pictures and microscopic sections by students. Dr. Greenman's Ryder microtome was also exhibited with specimens of its work. In the same room was shown Dr. Greenman's new Contour apparatus.

5. An exhibit of the Reaction-time apparatus from the laboratory of Experimental Psychology, arranged for actual experiments.

6. An exhibit of the periodical publications of the University; a set of books and other publications by the present members of the University staff.
7. A set of charts of statistics showing the development of the University, especially during recent years.

8. A complete set of the Muybridge photographs in animal locomotion, the results of the work of Professor Muybridge, under the auspices of the University some years ago.

9. Representative collections illustrating the University Department of Archaeology, comprising collections from Egypt, the Mediterranean, Babylon, Africa and America. This Archaeological exhibit occupied one-third of the space assigned to the University, and attracted a large degree of scientific and popular interest.

Judged purely from a popular standpoint, the exhibit seems to have compared favorably with other University exhibits. There is cause for regret, nevertheless, that the interest of all the departments could not be secured, as without their co-operation the exhibit was necessarily incomplete, and to that extent not representative, but the general impression made by the exhibit was a favorable one.

It has been useful to the University in various ways, especially, perhaps, in that it has brought the University into contact with a large number of people, who were previously unacquainted with its work. The number of visitors during the summer was about 200,000. This estimation is based on actual counts taken from time to time. One day's count alone showed above 900 visitors actually in the exhibit, not counting those who merely passed by it; and on another day a count showed that over 200 persons entered in one hour the section devoted to Archaeology. Among these visitors were about 2000 of the University's Alumni, and many persons from Philadelphia, the favorable impression made upon these latter being especially noteworthy. University catalogues, and a short account of the University's work in pamphlet form were widely distributed, together with many special Department circulars. There were also secured many addresses of students to whom information concerning the University courses was afterward sent.

As a result of this exhibit, and of those in the Women's Building made by Mrs. Cornelius Stevenson, and in the Anthropological building by Mr. Stewart Culin, the University has been awarded ten medals of the first class, more, I believe, than were awarded to any other institution exhibiting at the exhibition.

I have further to report that the University has secured, largely through the efforts of Mrs. Stevenson, Dr. W. P. Wilson
and Mr. Culin, with whom I have co-operated, large additions to its collections in Archaeology and Anthropology. A full report cannot yet be made, but the acquisition will comprise many hundreds of rare and valuable objects. I have the honor to hand you, herewith, the report of Mr. Stewart Culin, which deals especially with these acquisitions. Dr. Wilson, while working primarily in the interest of the city of Philadelphia, has been able to add hundreds of dollars worth of objects to the University's Museums of Forestry, Botany, and Economic and Natural Products.

I am glad to say that as a result of the summer's work the University Library will be enriched by about 800 titles, chiefly in pamphlets. From the French government, besides many pamphlets, were secured eighteen large volumes of geography, archaeology, architecture, and botany, with many plates. Generous gifts were also made by other foreign countries, notably Russia, Germany and Japan.

The expenses of the exhibit have been already reported to you, so far as they are complete. The total expenses will be something over $4200, defrayed by a special fund raised by Provost Pepper—although much of this was for articles which can be used to advantage here in the University. It is interesting to note that Princeton is said to have spent about $6000—and I am credibly informed that Harvard's exhibit cost not less than $16,000.

In conclusion I have to say that the University's valuable show-cases, pictures and museum objects have been returned without injury, and will be in a short time re-installed in their accustomed places.

Trusting that the summer's work may meet with your approval,

I am very respectfully yours,

E. W. Mumford,
Assistant Secretary.
APPENDIX No. VI.

THE COMMITTEES OF THE BOARD OF TRUSTEES.

At the stated meeting of the Trustees held April 3, 1884, the statutes relating to the Standing Committees of the Board were amended with the effect of establishing the following Committees in place of those which had previously existed.

1. On Finance and Property.
2. On the Library and Museums.
3. On the College.
4. On the Department of Medicine and Allied Schools.
5. On the Department of Law, including Legal Relations.
6. On Physical Education.
8. On the Department of Philosophy.

The Committee on Finance and Property is elected annually at the stated meeting in January; the other Committees are appointed by the Provost, and announced at the same meeting.

The Committee on Finance and Property is divided into sub-committees on Increase of University Resources, on Investments, on Accounts and Property, and on Trust Obligations and Record of Legacies.

The Committee on the College is divided into sub-committees on Arts, on Towne School, on Wharton School, on Biological School, and on Architecture School respectively.

APPENDIX No. VII.

EXERCISES OF COMMENCEMENT WEEK, 1894.

Thursday, May 31.—8 p. m. Annual Commencement Exercises of the Zelosophic Society. College Chapel.

Friday, June 1.—8 p. m. Annual junior oratorical competition for the alumni prize. College Chapel.

Saturday, June 2.—4 p. m. Reception and tea, School of Architecture. Exhibition rooms of the school, College Hall.
This reception and tea is given by the Faculty of the School of Architecture to the students of the school and invited guests.

8 p.m. Sophomore cremation exercises. University Athletic Grounds. Admission 25 cents. Tickets can be had at the gate.

Sunday, June 3.—8 p.m. Baccalaureate sermon before the University. Preacher, Rev. Samuel D. McConnell, D. D. Association Hall, Fifteenth and Chestnut streets.

Students and Faculties of all departments, in academic cap and gown if possible, will assemble at the Y. M. C. A. rooms on second floor, at 7:45 p.m. punctually.

Monday, June 4.—10:30 a.m. Class-day exercises. Chestnut Street Opera House. Reading of class history, poem, prophecy, etc. Presentations.

2:30 p.m. Commencement athletic sports, University Athletic Association, University Athletic Grounds, Thirty-seventh and Spruce streets.

The University Track Athletic Team and noted amateur athletes from other colleges and non-collegiate organizations will compete. Tickets (price 50 cents) on sale at Spalding's on and after May 28.

8 p.m. Ivy planting exercises with oration and poem, and songs by the University Glee Club.

9 p.m. Open air concert, full military band.

9 p.m. University dance in commencement pavilion.

These last three events will take place upon the College Campus. Tickets (price $1) admitting to all three, may be obtained from Henry Worth Thornton, Treasurer, 300 South Thirty-sixth street.

Tuesday, June 5.—10 a.m. Formation of University Procession, University Buildings, West Philadelphia.

The Governor of Pennsylvania, escorted by his staff; the Mayor of Philadelphia, escorted by the city officials; the Provost and Trustees of the University; the University Faculties and the students of all departments, both graduating classes and under class men will assemble upon the Campus at ten o'clock, will form
in procession and will proceed down Woodland avenue to Walnut street, thence east over the Walnut Street Bridge to Broad street, and thence south on Broad street to the Academy of Music.

11 a.m. Annual Commencement Exercises in the American Academy of Music. These exercises mark the one hundred and fifty-fourth (154th) year of the University's life.

The stage will be reserved for the University officials, guests of the University and distinguished alumni. The parquet and as many rows of the parquet circle as are necessary will be reserved for the graduating classes and undergraduates. Bachelors' Oration, Law Oration and Valedictory. Trustees' address to the retiring Provost with presentation of statue, by Horace Howard Furness, LL. D. Conferring of honorary degrees and degrees in course in the faculties of the college department, of philosophy and of law. Conferring of the honorary degree of doctor of laws upon the retiring Provost by the Governor of the Commonwealth.

7 p.m. Annual meeting Society of the Alumni of the College Department, University Library, followed by alumni collation in commencement pavilion.

Information in regard to collation and tickets therefor may be obtained from Mr. E. W. Mumford, College Hall.

8 p.m. Annual Commencement Exercises of the Philomathean Society, College Chapel.

Wednesday, June 6, Alumni Day.—11 a.m. General reunion of alumni of all departments, University Campus.

11.30 a.m. Presentation of statue of Benjamin Franklin from the World's Fair. Presentation oration by Russell Duane, Esq., '91, Law.

12.30 p.m. General meeting of alumni of all departments, University Library, followed by alumni collation in commencement pavilion.

Classes of any department may obtain a separate table for this collation by forwarding a request for the same, accompanied by a remittance of $10, to E. W. Mumford, '89, College Hall, before June 2.

2 p.m. Annual reunion of the Society of the Alumni, Department of Dentistry. Colonnade Hotel.
3.30 p. m. A base-ball game will be arranged for this day and hour at the University Athletic Grounds, Thirty-seventh and Spruce streets.

Information as to tickets when the game is arranged can be obtained at Spalding's, Eleventh and Chestnut streets.

7 p. m. Annual dinner of the Society of the Alumni Department of Dentistry. Colonnade Hotel.

7.30 p. m. Commencement dinner tendered by Faculty of Dentistry to graduating class. Bullitt Building.

8 p. m. Performance of "King Arthur" by Mask and Wig Club of the University of Pennsylvania, for the benefit of the Franklin Field Fund. Chestnut Street Opera House.

It is desired to secure the attendance at this performance of as many University alumni as possible. For information apply to George Q. Horwitz, '86, 623 Walnut street, and for tickets at the Box Office of the Chestnut Street Opera House.

8.30 p. m. Banquet of Alumni Society of the Medical Department. St. George's Hall, Thirteenth and Arch streets. For information apply to Dr. R. A. Cleeman, 2135 Spruce street.

Thursday, June 7—11 a. m. Annual Commencement Exercises, American Academy of Music. Conferring of degrees in course in the faculties of the School of Medicine and allied schools.

As the faculties and students of the medical and allied schools are invited to attend the opening Commencement Exercises on June 5, so the faculties and students of other schools are invited to attend these exercises.

4 p. m. Exercises of the Phi Beta Kappa Society. Introductory address by the president, Rev. William H. Furness, D. D. Oration by Hampton L. Carson, Esq., '71. University Library, Thirty-fourth street south of Walnut.

MEMORANDA.

The Alumni are reminded that, on the afternoon of Friday, June 15, 1894, an eight-oared shell race between Pennsylvania and Cornell will be rowed down stream on a four-mile-straight-away course on the Upper Delaware, finishing opposite the Morrelton Inn, at Torresdale. The race promises to be one of the most eventful and exciting in the annals of American
•sport. For information in regard to places on steamboats or grandstand, or in regard to the chartering of tugs, apply to the Rowing Committee, 701 Drexel Building.

On Thursday, June 7, in the University Library, the first announcement will be made of the awarding of the Traveling Scholarship in Architecture and of the prizes in the Students' Hall Competition. There will also be an exhibition of the drawings in both competitions in the Library.

Alumni of the College Department are notified of the publication of the great Matriculate Catalogue which contains a biographical notice of every student who has registered in this Department of the University from the earliest times to 1893. The catalogue may be obtained below cost at $5 from John Douglass Brown, Jr., Esq., 519 Drexel Building.

The Committee in charge of the Commencement Week Exercises consists of Edward Garret McCollin, '78; John Marshall, M. D., George Q. Horwitz, '86; H. B. Robb, '86; George Wharton Pepper, '87, and E. W. Mumford, '89.

For any information not contained in the above program apply to the Chairman of the Committee, George Wharton Pepper, '87, 701 Drexel Building.

APPENDIX No. VIII.

SECTION 29 AND 30 OF THE STATUTES AS AMENDED APRIL 3, 1894.

Sect. 29. There shall be two public Commencements held annually for conferring Degrees: the first, for Degrees in Medicine, Dentistry and Veterinary Surgery; and the second, for Degrees in the Arts, Law, Science, Auxiliary Department of Medicine, Music, Finance and Economy, and in Philosophy, on such days in June as may be fixed by the Trustees.

At all Commencements and on other public occasions connected with the University, the Provost, Vice-Provost, professors and students, unless excused by the Provost, shall appear in college caps and gowns.

Degrees may be conferred in Academic Council on recommendation of a faculty, or at the pleasure of the board, at such a time as may be designated in the mandamus ordering the same. Due notice shall be given to each Trustee and each member of the Council of the time and place appointed, which notice shall also specify the degrees to be given and the persons recommended for
the same; and the ceremony of conferring the degrees shall not proceed unless at least seven members of the council are present. The rules for conferring such degrees and for the mandamus ordering the same, shall be such as are in these statutes prescribed for conferring degrees at public commencements, and announcement of all degrees conferred in Academic Council shall be made at the next succeeding public Commencement of the department in which the degree is given."

Sect. 30. Honorary degrees may be conferred on whomsoever may be deemed worthy, in the following manner: a nomination of the candidate for such a degree, with a statement of his claims to the distinction, shall be made in writing and presented to the Board of Trustees at a stated meeting. This nomination shall be referred to the standing Committee on the department to which the proposed degree pertains. The committee shall report on the nomination at the next or at a subsequent stated meeting. If a favorable report is made on the nomination, all action thereon shall lie over to another stated meeting, and thereafter the Trustees shall vote thereon; the unanimous vote of the Trustees casting ballots shall be required for conferring an honorary degree. Degrees thus voted shall be conferred at the next Commencement of the appropriate department, or in Academic Council.

APPENDIX No. IX.

RULES ADOPTED FOR THE REGULATION OF ATHLETIC SPORTS OF THE UNIVERSITY OF PENNSYLVANIA.

RULE I. No student shall be allowed to represent the University of Pennsylvania in any public athletic contest, either individually or as a member of any team, who either before or since entering the University shall have engaged for money in any athletic competition, whether for a stake or a money prize, or a share of the entrance fees or admission money, or who shall have taught or engaged in any athletic exercise or sport as a means of livelihood, or who shall at any time have received or taken part in any athletic sport or contest for any pecuniary gain or emolument whatever, direct or indirect, with the single exception that he may have received from the college organization or from any
permanent amateur association of which he was at the time a member, the amount by which the expenses necessarily incurred by him in representing this organization in athletic contests exceeded his ordinary expenses.

RULE II.—Section 1. No one shall be allowed to represent the University of Pennsylvania in any public athletic contest, individually or as a member of the team, unless he is and intends to be throughout the college year a bona fide member of the University, taking a full year's work.

Sec. 2. A student who is dropped for neglect of his studies into a lower class, shall be debarred from taking part in intercollegiate contests until the end of the next academic year, or until he is permitted by the Faculty to rejoin his class.

Sec. 3. No student of the University who is not a student in "the college," and no student in the college who has ever played in an intercollegiate contest upon a team of any other college or university, shall play upon a University of Pennsylvania team until he has resided one academic year at the University, and passed the annual examination upon a full year's work.

RULE III. No student shall represent the University of Pennsylvania in any public athletic contest, either individually or as a member of the team, for more than four years. In reckoning the four years, the year of probation mentioned in Rule II shall be excluded, also any year lost to a student by illness.

RULE IV. No student shall be permitted to participate in any athletic contest until he shall have procured a certificate of physical fitness, issued by the director of physical culture, in conformity with the rules hereafter to be adopted by the Faculty Conference Committee.

RULE V. No student shall be permitted to play on more than one athletic team in a single college year, unless he obtains permission so to do from the Faculty Conference Committee.

RULE VI. The elections of captains of University teams shall be subject to joint ratification by the Faculty Conference Committee and the Board of Directors of the Athletic Association.

RULE VII. Each captain of a University team shall at the beginning of his season submit to the Deans of the several departments of the University, a schedule or roster of the hours of practice set for his candidates, together with a list of such candidates, and he shall notify the Deans from time to time of changes and modifications in said schedule and said list.
APPENDIX No. X.

BIBLIOGRAPHY.

ALEXANDER C. ABBOTT, M. D.


(3) Considerations Concerning Asiatic Cholera. The Medical News, June 10, 1893.

(4) A Description of the proposed New Laundry of the University of Pennsylvania Hospital, with Special Remarks and Experiments upon Disinfection in Connection with the Work of Hospital Laundries. Transactions of the International Congress of Charities, Correction and Philanthropy, Chicago, June 12 to 18, 1893.

(5) The Results of Inoculations of Milch Cows with Cultures of the Bacillus Diphtheriae. Journal of Pathology and Bacteriology (London and Edinburgh), October, 1893.

(6) Considerations Concerning Diphtheria. Dominion Medical Monthly (Toronto), October, 1893.

JOHN QUINCY ADAMS, PH. D.
Published, "Die Gebäude und Mietstener in Oesterreich." Halle, 1892.

HARRISON ALLEN, M. D.
"Errors in the Actions of the Muscles of the Parts used in Speech." Report of the Proceedings of the Second Summer Meeting of the American Association to Promote the Teaching of Speech to the Deaf, 1892.


Remarks on the Congenital Defects of the Face with Exhibition of a Rare Form of Cleft Palate. N. Y. Medical Journal, December, 1893.


Rhinoliths. International Medical Magazine, 1894.

Herman B. Allyn, M. D.


John Ashhurst, Jr., M. D.


Personal Experience in the Treatment of Vesical Calculus. 1893. Together with numerous Clinical Lectures which have appeared in the "International Clinics," "International Medical Journal," "University Medical Magazine," etc.

George F. Barker, Ph. B., M. D.


John S. Billings, M. D., LL. D.


Condensed (A) Statements of the Requirements of the Principal University Medical Schools in Europe with regard to Candidates for the Degree of Doctor of Medicine. Printed in Baltimore, 1893.


Municipal Sanitation in New York and Brooklyn. The Forum, New York, 1893, XV.


GEORGE TUCKER BISPHAM, A. M.


GEORGE DANA BOARDMAN, D. D., LL. D.

The Golden Year. Philadelphia.
March. The Church of Mankind. New York.
May. Tribute to Robert W. McAll (France). Philadelphia.

The Soul's Easter. Philadelphia.
CHARLES MEREDITH BURK, M. D.


DANIEL G. Brinton, M. D., LL. D., Sc. D.

Current Notes on Anthropology. In Science for January 27, February 10 and 24, March 10 and 24, April 14, May 12 and 26, June 9 and 23, July 7, August 11, October 13, November 10 and 24, December 22.
On the words “Anahuac” and “Nahuatl.” In the American Antiquarian, November, 1893, pp. 7.
The Native Calendar of Central America and Mexico. In Proceedings of the American Philosophical Society, October, and separately, pp. 59, 8vo.
On an Inscribed Tablet from Long Island. In the Archæologist, November, pp. 3.
On the Beginning of Man. In the Forum, November.
On Anvil-Shaped Stones. In the same.

HENRY W. CATTELL, M. D.

Inflammation; Pus; Positively and Negatively Chemo-Tactic Substances. The Medical and Surgical Reporter, January 14, 1893.
Some Notes on Scarlet Fever based on One Hundred and Eighteen Consecutive Cases. International Medical Magazine for March, 1893.
Some Who Have Suffered for Pathology’s Sake. University Medical Magazine, March, 1893.

Some Practical Post-Mortem Points. A paper read before the Philadelphia County Medical Society, October 25, 1893.

Notes on the Demonstrations in Morbid Anatomy, including Autopsies. Published by the International Medical Magazine Company.

Perforation of Meckel's Diverticulum in a Case of Typhoid Fever. Philadelphia Hospital Reports for 1893.

Numerous Contributions to the Philadelphia Pathological Society. Volume XVI.

Pathology at the Institution for Feeble-Minded Children at Elwyn. Read before the First Pan-American Congress at Washington.

Edward D. Cope, Ph. D.


On the Batrachia and Reptilia of the Plains at Latitude 36° 30'. Proceedings of Philadelphia Academy, 1893.


On Cyphornis, an Extinct Genus of Birds; Ibid., 1894.

On Mammalia of the Plistocene of the Plains; Ibid., 1894.

EDWIN S. CRAWLEY, PH. D.

A paper on Uninodal Quartics, read before the New York Mathematical Society, May 6, 1893.

STEWART CULIN.

Notes on the Chinese Coins in Memorial Hall, Fairmount Park, Philadelphia, 1886.

The Practise of Medicine by the Chinese in America. Medical and Surgical Reporter, March 19, 1887.


East Indian Fortune-Telling with Dice. Syrian Games with Knuckle Bones and Tip Cats.

Loan Exhibition (Catalogue). Objects used in Religious Ceremonies and Charms and Implements for Divination. Edited by Stewart Culin, Philadelphia. Printed for the University, 1892, pp. 174.

Exposición Historico-Americana, Catalogo de las Colecciones Arqueológicas sección de arqueología y paleontología, Universidad de Pensilvania. Madrid, 1892.


Exhibit of Games in the Columbian Exposition. Journal of American Folk-lore, September, 1893.


ROLAND G. CURTIN, M. D.


Address of Welcome to the Foreign Delegates to the Medico-Climatological Congress of the World’s Fair Auxiliary, Chicago, 1893.

Treatment of Influenza in 1893 and 1894, with a résumé of the symptoms during the same period. Drs. E. W. Watson and Roland G. Curtin.

Are the Cases of Fever with excessive sweating, observed and described of late, a Manifestation of Influenzial poison, and are they identical with the “Sweating Sickness,” and “Picardy Sweat Cardiac Sickness” and “Miliary Fever,” as described by ancient writers and by Hecker? Transactions of Pan-American Medical Congress, Washington, December, 1893. Drs. Watson and Curtin.

Clinical Teaching and Clinical Teachers of the Philadelphia Hospital (Blockley). Philadelphia Hospital Report, Vol. II, 1892.


Article on Traumatisms and Chronic Inflammatory Conditions around the Heart, as a Cause of Angina Pectoris. Transactions of American Climatological Association.


JUDSON DALAND, M. D.


June. A Case of Pyopneumothorax of Nine Months' Duration. Read before, and published in the Transactions of, the Philadelphia County Medical Society, Volume I, 1887.


1891, Oct. Ueber das Volumen der rothen und weissen Blutkörperchen im Blute des gesunden und kranken Menschen. Published in the Fortschritte der Medicin, Nos. 20 and 21, October and November, 1891.

Nov. A Volumetric Study of the Red and White Corpuscles of Human Blood in Health and Disease, by aid of the Hæmatokrit. Published in the University Medical Magazine, November, 1891.

Oct. A Clinical Description of Dysentery as it Occurs in Nicaragua. Published in the Therapeutic Gazette, December, 1892, after being read before the Philadelphia County Medical Society.

Dec. A New Method of Separating the White from the Red Corpuscles, by Means of the Hæmatokrit. Read before the Members of the Franklin Institute, and published in their Journal, September, 1893.

Report of the Origin and Progress of the American-Berlin Medical Society. Published in the University Medical Magazine, December, 1892.

1893, Jan. A Clinical Study of Eleven Cases of Asiatic Cholera, Treated by Hypodermoclysis and Enteroclysis. Read before the College of Physicians of Philadelphia, and
published in the University Medical Magazine, January, 1893.
Hysterical Seizures Relieved by Hypnotic Suggestion. Read before the Philadelphia Neurological Society, and published in the University Medical Magazine, April, 1893.

Apr. Hypnotism; its Use and Abuse. Published in Lippincott's Magazine, September, 1893.

May. Treatment of Cholera. Read before the American Climatological Association, and published in the American Journal of the Medical Sciences, July, 1893.


Obituary of Dr. John M. Keating. Published in the International Clinics, January, 1894.

Diagnosis of Mitral Valvulitis, with a Report of Three Cases. Published in the International Clinics, January, 1894.

Feb. The Etiology, Diagnosis and Treatment of Idiopathic Pernicious Anæmia, based upon a Study of Five Cases. Read before the Clinical Research Society of Philadelphia.

Mar. A New Hæmatokrit and a New Technique. Read before the International Medical Congress at Rome.

EDWIN T. DARBY, M.D., D.D.S.

GWILYM G. DAVIS, M.D.


Specimen of Barton's Fracture Produced Post-mortem. Transactions of the Philadelphia Pathological Society, 1893.

CHARLES W. DULLES, M. D.

(NOT HITHERTO REPORTED.)

Suprapubic Lithotomy. American Journal of Medical Sciences, July, 1875. (Abstract of Graduating Thesis Medical Department University of Pennsylvania.)

Case of Suprapublic Lithotomy. Medical and Surgical Reporter, April 29, 1876.

Case of Hemorrhage into the Ventricles of the Brain, in an Infant Child of Six Months. Philadelphia Medical Times, July 22, 1876.

Interesting Gunshot Wound. Philadelphia Medical Times, November 25, 1876.


Four Cases of Cerebral Injury. Philadelphia Medical Times, September 29, 1877.


Chancre of the Lip. Medical and Surgical Reporter, January 5, 1878.

Suprapubic Lithotomy. American Journal of Medical Sciences, April, 1878.


Ein Fall von Syphilis durch eine zahnärztliche Operation acquirirt. Heilbronn, February 21, 1879.

Abscess of the Liver; Operation; Recovery. Philadelphia Medical Times, March 29, 1879.


Eating. Lippincott's Magazine, April, 1880.
Erythema Multiforme. Specialist and Intelligencer, December, 1880.
The Origin of Syphilis. American Specialist, May, 1881.
Primary Manifestations of Syphilis. American Specialist, July, 1881.
Strangulated Femoral Hernia; Operation; Bowel Ruptured; Death. Philadelphia Medical Times, July 2, 1881.
Typhoid Fever at Three Years of Age. Philadelphia Medical Times, March 25, 1882.
Note on a Case of Eczema of the Face in an Infant. Medical News, February 3, 1883.
Ulcer of the Stomach with Unusual Features. Medical News, October 20, 1883.
Examination of the Urine. Philadelphia Medical Times, December 1, 1883.
Disorders Mistaken for Hydrophobia. Read before the Medical Society of the State of Pennsylvania, May 15, 1884.

Suggestions from Dispensary Experience, for the Surgery of General Practice. Read before the Philadelphia County Medical Society, December 10, 1884. Proceedings of the Philadelphia County Medical Society, Volume VII.


Hydrophobia. The Lancet (London), August 22, 1885.


Comments on Pasteur's Method of Treating Hydrophobia. Medical Record, February 13, 1886.

Case of So-called Hydrophobia. The Lancet (London), May 1, 1886.

Pasteur's Method of Treating Hydrophobia. Published by the London Society for the Protection of Animals from Vivisection, 1886.


The Schuylkill as a Source of Water Supply. Reports of Philadelphia Water Department for 1887.

Hernia Inguino-properitonealis. Medical News, January 22, 1887.


Syphilis in Relation to Marriage. (Ed.), Specialist and Intelligence, November, 1880.


Suprapubic Lithotomy and Suturing the Bladder. (Ed.), Medical News, September 12, 1885.

Distention of the Rectum and Suprapubic Lithotomy. (Ed.), Medical News, November 7, 1885.


Treatment of Syphilis. (Ed.), Medical News, August 14, 1886.
Detection of Chronic Bright’s Disease. Medical News, August 28, 1886.
Spermatorrhœa in Gonorrhœa. (Ed.), Medical News, November 27, 1886.
Treatment of Syphilis. (Ed.), Medical News, January 22, 1887.
Treatment of Ecstrophy of the Bladder. (Ed.), Medical News, April 2, 1887.
Suprapubic Lithotomy. Transactions of the Medical Society of Pennsylvania, 1887.
Suprapubic Lithotomy. The Lancet (London), December 3, 1887.
Die Formen des Harnröhrnen-Trippers, etc. (The Varieties of Urethral Catarrh, etc.) Grünfeld. (Rev.), American Journal of Medical Sciences, April, 1878.
Guide to the Examination of Urine, etc. Hofmann and Ultzmann. (Rev.), American Journal of Medical Sciences, January, 1880.
Clinical Remarks on Gleet, etc. Ogilvie Will. (Rev.), American Journal of Medical Sciences, January, 1880.
Coulson on the Diseases of the Bladder and Prostate. (Rev.), American Journal of Medical Sciences, April, 1881.
La Syphilis, son histoire et sa Traitem ent. Tartenson. (Rev.), American Journal of Medical Sciences, July, 1881.
Clinical Lectures on Syphilis. Otis. (Rev.), October, 1881.
Lectures on Syphilis, etc. Lane. (Rev.), American Journal of Medical Sciences, October, 1881.


Clinical Analysis of the Urine, etc. Smith. (Rev.), Medical News, February 25, 1882.

Practical Treatise on Impotence, Sterility, etc. S. W. Gross. (Rev.), Medical News, September 1, 1883.

Observations on Lithotomy, Lithotrity, etc. Reginald Harrison. (Rev.), American Journal of Medical Sciences, October, 1883.

Diseases of the Prostate, etc. Sir Henry Thompson. (Rev.), Medical News, November 10, 1883.


Treatment of Syphilis in Newborn Children, etc. Diday. (Rev.), American Journal of Medical Sciences, January, 1881.

Ueber Pyurie (Eiterharnen) und ihre Behandlung. (Pus in the Urine, etc.) Ultzmann. (Rev.), American Journal of Medical Sciences, April, 1881.

Excessive Venery, etc. Howe. (Rev.), Medical News, August 2, 1881.


Diseases of the Bladder, etc. Gant. (Rev.), American Journal of Medical Sciences, October, 1881.

Syphilis and Pseudo-Syphilis. Cooper. (Rev.), American Journal of Medical Sciences, October, 1881.


Urinary and Renal Derangements, etc. Beale. (Rev.), American Journal of Medical Sciences, January, 1886.

Urinary and Renal Diseases. Roberts and Maguire. (Rev.), American Journal of Medical Sciences, January, 1886.

Treatment of Tumors of the Bladder. Medical and Surgical Reporter, July 9, 1887.
Gas in the Bladder. Ibid, July 30, 1887.
On the Act of Conception. Ibid, November 5, 1887.
Suture of the Urethra after Laceration. Ibid, November 26, 1887.
Method of Conception. Ibid, January 21, 1888.
Treatment of Sterility. Ibid, January 21, 1888.
Masturbation in Women and Girls. Ibid, February 1, 1888.
Castration as a Cure for Crime. Ibid, April 21, 1888.
Impregnation after Castration. Ibid, May 19, 1888.
Catheterizing the Male Ureter. Ibid., May 19, 1888.
Catheterization. Ibid., June 2, 1888.
Nephrotomy. Ibid., June 3, 1888.
Suprapubic Lithotomy. Ibid., June 30, 1888.

Books.

What to do First in Accidents or Poisoning. Philadelphia, 1880, 32mo, pp. v, 64.

Current Report.

Rare Luxation at the Elbow. Medical News, June 20, 1891.
Dangerous Splinter Wound of the Orbit. Ibid.


Obscure Forms of Gout. Medical News, March 5, 1892. Reprint.


Hydrophobia in the United States with Suggestions as to Treatment. Transactions of the College of Physicians of Philadelphia, 1894.

**LOUIS A. DUHRING, M. D.**


Compound Tincture of Coal Tar. American Journal of Medical Sciences, May, 1894.

**MORTON W. EASTON, PH.D.**


**ROLAND P. FALKNER, PH.D.**


Academic Instruction in Political and Economic Science in Italy. Annals of American Academy of Political and Social Science, April, 1891.


Statistics of Prisoners, 1890, 1892, pp. 56.
Retail Prices and Wages. Senate Report 896, Fifty-second Congress.
Report of Statistician, 1892, pp. 90.
Numerous signed Reviews in the Annals of the American Academy of Political and Social Science.

BARR FERREE.


Unsigned articles, editorials, notes, reviews, in various architectural periodicals, about seventy-five in number, omitted from this list.

HORACE HOWARD FURNES, LL. D.

The Variorum Shakespeare. "As You Like It," Vol. VIII., 1890.


WILLIAM GOODELL, M. D.


Menorrhagia, Dysmenorrhoea and Leucorrhoea. Practice, January, 1893.

Prolapse of Womb from Hypertrophic Elongation of the Cervix. Medical and Surgical Reporter, February 4, 1893, p. 163.


Remarks on Case of Tubal Pregnancy. Medical News, April 15, 1893.

The Effect of Castration on Women, and Other Problems in Gynaecology. Medical News, December 9, 1893.


2. Krates of Mallos and Columbus. Johns Hopkins Circulars, December, 1892.
7. Literary Frauds among the Greeks in Memorial Volume for Professor H. Drisler, 1894.
8. P. Cornelii Taciti Dialogus de Oratoribus. Edited with Prolegomena (pp. xiii-cxxxviii); text and critical apparatus (pp. 1-55); exegetical and critical commentary (pp. 56-381); Bibliography, index nominum et rerum, index locorum. Ginn & Co., Boston, 1894.

For previous publications (1888–1891) see Bibliographia Hopkiniensis, I.

MILTON B. HARTZELL, M. D.

2. Red Chromidrosis (?). University Medical Magazine, July, 1893.

JOHN C. HEISLER, M. D.

Thermic Fever, with an Unusual Sequela—Multiple Neuritis. University Medical Magazine, March, 1893.
Cystitis in the Female, with Special Reference to Treatment. University Medical Magazine, September, 1893.
HERMAN V. HILPRECHT, PH. D.

1. Zu Jastrow's "A Cylinder of Marduktabikzirim." Zeitschrift für Assyriologie, VIII.
8. Contributions to "Theologisches Literaturblatt," edited by Professor Luthardt, of the University of Leipzig.

GUY HINSDALE, M. D.

2. Two Complicated Labors: Deliveries by Version and by Cæsarean Section; Recoveries. The Medical News, Philadelphia, November 25, 1893.

BARTON COOKE HIRST, M. D.

1. Chapter in Starr's work on Children's Diseases, Congenital Heart Affections.

GEORGE H. HORN, M.D.

MORRIS JASTROW, JR., PH. D.
5. The Hebrew Prophets in their Historical Setting. Reform Advocate, February 20, 1894.
Emory R. Johnson, Ph. D.


Gregory B. Keen, A. M.


Charles Lester Leonard, M. D.


William Draper Lewis, Ph. D.


Edgar Marburg, C. E.


John Marshall, M. D.

Medicus' Qualitative Analysis. Third edition, revised.

John M. Macfarlane, D. Sc.

JOSEPH MCFARLAND, M. D.

The Nervous Form of Mercurial Poisoning. University Medical Magazine, March, 1892.
Are Coccidia Found in Cancer? University Medical Magazine, September, 1893.

EDWARD MARTIN, M. D.

Epididymitis Caused by Abdominal Strain. The Medical News, November 29, 1890.
Abscess of Liver. Medical News, December 20, 1890.
Aristol. Medical News, November 1, 1890.
Gonorrhceal Epididymitis. The University Medical Magazine, May, 1891.
The Prophylaxis of Gonorrhæa. The Therapeutic Gazette, March 15, 1892.
The Commoner Fractures of Children and Their Treatment. The Therapeutic Gazette, October 15, 1892.
Vulvo-Vaginitis in Children. The Journal of Cutaneous and Genito-Urinary Diseases, November, 1892.
Enterance of Air into Veins. The International Medical Magazine, November, 1892.
Wounds of the Femoral Vein. University Medical Magazine, November, 1892.
Essentials of Minor Surgery, Bandaging and Venereal Diseases. W. B. Saunders, Publisher.
Wounds and Obstruction of the Intestines. (With Dr. H. A. Hare.) (Fiske Fund Prize of 1890.) Published by W. B. Saunders, Philadelphia.


Impotence and Sexual Weakness in the Male and Female. George S. Davis, Detroit, Mich., 1893. (Second edition preparing.)


Numerous editorials and miscellaneous contributions in various periodicals, especially in The Therapeutic Gazette.

JOHN B. MCMASTER, PH. D.

6. The Emigration to the Mississippi Valley from the Atlantic Coast.
8. History of the People of the United States. Vol. IV.

HENRY C. MERCER.

Notes taken in December, 1892, and March, 1893, at the Quaternary Gravel Pits of Abbeville, St. Acheul and Chelles. Archaeologist, July, 1893.
Trenton and Gomme Gravel Specimens compared with Ancient Quarry Refuse in America and Europe. American Naturalist, November, 1893.


The Discovery of an Artificially Flaked Flint Specimen in the Quaternary Gravels of San Isidro, Spain. Proceedings of International Congress of Anthropology, Chicago, September, 1893.


An Ancient Argillite Quarry and Village Site on the Delaware. Published by the Author, Doylestown, September, 1893.

The Lenape Stone, or the Indian and the Mammoth. G. P. Putnam’s Sons, 1885.


Notes Taken at Random. Read before the Bucks County Historical Society. Published by the Author, Doylestown, June, 1893.

Report on Progress of Field Work at Gaddis Run and Durham and Hartman’s Caves, to University of Pennsylvania Archaeological Association, October 27, 1893.

Report on Progress of Field Work in Texas and at the Nickajack and Lookout Caves in Tennessee, to the University of Pennsylvania Archaeological Association, January 6, 1894.

Re-Exploration of Hartman’s Cave near Stroudsburg, Pennsylvania, in 1893. Read before Academy of Natural Sciences in February, 1894. (Now in press.)

Discovery of Another Argillite Quarry on the Delaware. Science, October 6, 1893.

CHARLES K. MILLS, M. D.

Neuritis and Myelitis and the Forms of Paralysis and Pseudo-Paralysis Following Labor. University Medical Magazine, May, 1893.
Some Affections of the Third and Fifth Cranial Nerves. Journal of Nervous and Mental Disease, August, 1893. (With Dr. J. W. McConnell.)


Edited Vol. II. Philadelphia Hospital Reports (with Dr. J. W. Walk).

In An American Textbook of the Diseases of Children, edited by Louis Starr, M.D., the following chapters: Speech Defects and Anomalies; Idiocy and Imbecility; Cretinism; Myotonia, or Thomsen's Disease; Acromegaly; Athetosis and Athetoid Affections; Insanity in Children; Imperative Movements in Defective Children, also Head-nodding, Head-shaking, Head-rotating, Head-banging, and Nystagmus in Infants; Headache.


Mirror Writing. Journal of Nervous and Mental Disease, February, 1894.

Haemorrhage into the Cerebellum and Fourth Ventricle, etc. Journal of Nervous and Mental Diseases, January, 1890. And other Reports of Cases and Operations in the same journal during 1890.

Spasmodic Torticollis. University Medical Magazine, February, 1890.

Notes on Some Cases of Chorea and Tremor. Journal of Nervous and Mental Diseases, March, 1890.


Edited the Philadelphia Hospital Reports, Vol. I., 1890.


Notes on the History of the Philadelphia Hospital since 1860. Philadelphia Hospital Reports, Vol. I., 1890. (With Dr. Roland G. Curtin.)


Myotonia and Athetoid Spasm. International Clinic, 1891.
Lesions of the Superior Temporal Convolution Accurately Locating the Auditory Centre. University Medical Magazine, November, 1891.

Autopsy in a Case of Athetoid Spasm and Myotonia. Journal of Nervous and Mental Diseases, December, 1891.

Subcortical Hemorrhagic Cyst beneath the Arm and Leg Areas. Journal of Nervous and Mental Diseases, December, 1891.

JOHN K. MITCHELL, M. D.

Hysterical Anaesthesia, with a Study of the Fields of Vision (with Dr. G. E. De Schweinitz). American Journal of Medical Sciences, November, 1889.


Treatment of Neurasthenia and Hystera by Rest, Isolation, etc. International System of Therapeutics, Vol. I., 1890.

A Case of Local Catalepsy. American Journal of Medical Sciences, August, 1893.

A Case of Locomotor Ataxia Beginning in the Arms. American Journal of Medical Sciences, June, 1893.


S. WEIR MITCHELL, M. D., LL. D.

The Conduct of the Medical Life.

Francis Drake.

The Mother.

DANA CARLETON MUNRO, A. M.

Edited, Urban and the Crusaders. Vol. I., No. 2, of Translations and Reprints from the Original Sources of European History.

Book Reviews, etc.

JOHN H. MUSser, M. D.

Universal Melanotic Sarcomata. Philadelphia Hospital Reports for 1892.

A Case of Abscess of the Liver Following Amoebic Dysentery. Transactions of the Philadelphia County Medical Society, February 22, 1893.


A Practical Treatise on Medical Diagnosis for Students and Physicians.

WILLIAM ROMAINE NEWBOLD, PH. D.


WILLIAM F. NORRIS, M. D.


SIMON N. PATTEN, PH. D.

Cannan's History of the Theories of Production and Distribution. (Review.) Annals of the American Academy, September, 1893.


The Place of University Extension. University Extension, February, 1894.


CHARLES B. PENROSE, M. D.


Acute Peritonitis from Gonorrhoea. Medical News, July 5, 1890.

Operation for Ankylosis of the Temporo-Maxillary Articulation. Medical News, December 6, 1890.
The Treatment of Haemorrhoids by Excision. Medical News, October 11, 1890.

Hysterectomy for Other Conditions than Fibroid and Malignant Tumors. Medical News, March 17, 1894.


Gravid Fallopian Tube Removed by Celiotomy before Rupture. University Medical Magazine, February, 1894.

Two Cases of Calcification of the Uterus. University Medical Magazine, April, 1894.

A Case of Hysterectomy in which the Ureter was Resected and Implantated into the Bladder. University Medical Magazine, April, 1894.

Samuel W. Pennypacker, LL. D.

1. Charade. 8vo, 12 pp., 1866.
3. Rittenhouse's Orrery in Lossing's American Historical Record, 1873.
8. The Pennypacker Reunion. 8vo, pp. 51, 1877.
13. James Abram Garfield. 8vo, pp. 8, 1881.
20. An Address at the Bicentennial Celebration of the Settlement of Germantown, Pa., and the Beginning of German Emigration to America, October 6, 1883. 8vo, pp. 12. Philadelphia, 1883. Translated into German, and into Dutch by Dr. Scheffer, of Amsterdam.
29. Twenty-sixth Pennsylvania Emergency Infantry. An address at the Dedication, September 1, 1892, of the Monument to commemorate the services of the regiment on the battlefield of Gettysburg. 8vo, pp. 26. Philadelphia, 1892.
30. Pennsylvania Colonial Cases. The administration of law in Pennsylvania prior to A. D. 1700, as shown in the cases decided and in the Court of Proceedings. 8vo, pp. 185. Philadelphia, 1892.

31. The Pennypacker Pedigree. Philadelphia. (Fifty copies privately printed.)

32. The Weekly Notes of Cases. 33 vols. 1875–1894. (Reporter for C. P., Nos. 2 and 3.)

WILLIAM PEPPER, M. D., LL. D.

Some Unusual Types of Pneumonia. University Magazine.


Provost's Annual Report, 1893.

Higher Medical Education. Address Delivered at the Inauguration of the Four-Year Course in Medicine. University of Pennsylvania, October, 1894.

Textbook of Medicine by American Teachers. Vol. II. Edited by Dr. Pepper.

Presidential Address before First Pan-American Medical Congress, September, 1893.

Commencement Address at State College, Pa., June, 1894.

Municipal and National Relations of the Medical Profession. Delivered at Cleveland, Ohio, June, 1894.

CHARLES S. POTTS, M. D.


On the use of Quinine in the treatment of Chorea in conjunction with Dr. W. A. N. Dorland. Read at the Meeting of the American Medical Association, in June. Published in University Medical Magazine, August, 1893.

A Case of Multiple Neuritis due to Arsenic used for the treatment of Chorea. University Medical Magazine.

A Case presenting Hallucinations of Sight, Taste, Touch and Smell. Journal of Nervous and Mental Diseases, March, 1894.

Quinine as a Remedy for Enureses. Therapeutic Gazette.
The Traumatic Neuroses. A lecture delivered before the Quiz classes of Drs. J. Chalmers and Da Costa and Dr. Braden Kyle. Jefferson Medical College.

B. ALEXANDER RANDALL, M. D.
Can the Loss of the Eyes by Ophthalmia neonatorum always be prevented? Transactions American Ophthalmological Society, 1893.
Entwined and Crossing Retinal Vessels. Ophthalmic Record, May, 1893.
Remarks on Fifty Mastoid Operations done in the past four years. Transactions Philadelphia Medical Society.
Earache and Acute Middle-ear Inflammation. American Journal Medical Sciences, February, 1893.
Attempt to restore an Auricle bitten off in Childhood. Archives of Otology.
Mastoid Anatomy from the Surgical Standpoint. Reference Handbook of Medical Science Supplement, 1894.
The Results of Mastoid Suppuration and Caries; Mastoid Inflammation without Suppuration; Epidermal Impaction in the Canal. International Clinics, January, 1894.
A Case of Tympanic Suppuration; Facial Palsy and Auricular Abscess. International Clinics, 1893.
A Case of Muco-purulent Inflammation of the Middle-ear; A Case of Myringitis or Acute Catarrhal Otitis with Bulla of the External Canal. International Clinics, 1893.

EDWARD T. REICHERT, M. D.

1. Thermogenic Centres, with Special Reference to Automatic Centres. University Medical Magazine, March, 1893.

HUGO A. RENNERT, PH. D.


SAMUEL D. RISLEY, M. D.


JOSEPH T. ROTHROCK, B. S., M. D.

Quercus macrocarpa (Overcup Oak). Illustrated, in Forest Leaves, April, 1893.

Juglans nigra (Black Walnut). Illustrated, in Forest Leaves, June, 1893.

Carya alba (Shellbark Hickory). Illustrated, in Forest Leaves, August, 1893.

Diospyros virginiana (the Persimmon). Illustrated, in Forest Leaves, October, 1893.

The Forest Primeval. Illustrated, in Forest Leaves, December, 1893. Also in same number, Wood Structure in its Relation to Mechanical Purposes. Illustrated.

Ulmus Americana (American, or White Elm). In Forest Leaves, February, 1894.

Fraxinus Americana (White Ash). Illustrated, in Forest Leaves, April, 1894.

A great number of briefer articles on Pennsylvania Forestry, in Forest Leaves and elsewhere.


JOHN A. RYDER, PH. D.


FELIX E. SCHELLING, A. M.

Note: George Rudolph Wecherlin, a Borrower of Raleigh and Wotton. Modern Language Notes, April, 1894.


ISAAC J. SCHWATT, PH. D.

1. Some Properties of the Triangle.

2. A Paper read before the New York Mathematical Society on the Application of Brocard’s and Grebe’s Theories to Conic Sections.
Edgar F. Smith, Ph. D.


The following Ph. D. theses were suggested, and carried to completion under my direction and supervision:


B. Franklin Stahl, M. D.

MAXWELL SOMMERVILLE.

A series of papers on all the Glyptic Epochs: Phœnia, the Abraxas, Early Christian and Byzantine.
A Review of Pliny's contributions to Amuletic Lore.
A General Mention of Talismans and Amulets.
An Essay on Phallicism.
A Paper on Kabylia in the Atlas Mountains, Northern Africa.

ALFRED STENGEL, M. D.

Methods of Examining the Blood. University Medical Magazine, March, 1893.
Transactions of the Pathological Society of Philadelphia. Vol. XVI.
Book Reviews and Editorial Articles in Medical News and University Medical Magazine.
1. Duodernal Ulcer.
2. Primary Cirrhotic Cancer of Liver.
3. Intestinal Obstruction due to Gall Stone.
4. Leukæmic Blood.
5. Extensive Aortic Valve-Disease with Fatty Heart.
6. Congenital Cystic Kidneys.
7. Malarial Cirrhosis of the Liver, with Enlargement of the Spleen.
8. Anchyllostomum duodenale and Bothriocephalus latus.

ARTHUR A. STEVENS, M. D.

Manual of Therapeutics, 1894.

ALFRED STillé, M. D., LL. D.

Address to the Stillé Medical Society, University Medical Magazine, I., 379.
On Counterfeitt Death. Ibid., II., 671.
Necrological Notice of Professor Agnew. Ibid., IV., 555.
Desultory Thoughts, addressed to the Stillé Medical Society, 1892.
Address to the Association of Ex-Resident and Resident Physicians of the Philadelphia Hospital. University Medical Magazine, V., 750.


Notice of the Life and Character of George Cheyne Shattuck, M. D. Transactions College of Physicians, June, 1893.

National Dispensatory, in collaboration with Professor Maisch, Professor Caspari, and H. C. C. Maisch. Fifth edition, 1894.

GEORGE C. STOUT, M. D.

An article on Dr. J. Muná.
An article on Otomycosis.

SARA YORKE STEVENSON, SC. D.

The Feathers and the Wings in Early Mythology. Oriental Studies, 1894.


On an Ancient Egyptian Rite illustrating a Primitive Mode of Thought. International Congress of Anthropology, Chicago, 1894.

JOHN D. THOMAS, D. D. S.

Extracting Teeth, and Conditions Warranting such Procedure. Dental Cosmos, April, 1893.

The Anaesthetic Zone in Nitrous Oxide Anaesthesia.

FRANCIS NEWTON THORPE, PH. D.


The Principles of Government in the United States; Outlines of Lectures, in the School of American History and Institutions, pp. 32. Lancaster, 1893.


JAMES TRUMAN, D. D. S.

Forces which Make for Progress. 1893.
Nomenclature as Applied to Dentistry. International Dental Journal, 1893.
To Whom Belongs the Honor of Discovery. International Dental Journal, 1893.
Various book reviews and miscellaneous articles.

JAMES TYSON, M. D.

BOOKS.


PAPERS AND PAMPHLETS.

1. Epidemic Influenza or Catarrhal Fever. Abstract of a Clinical Lecture delivered at the Hospital of the University of Pennsylvania, January 16, 1890. Medical News, February 8, 1890.
2. Clinical Lecture on Diabetes Mellitus. Medical and Surgical Reporter, January 4, 1890.
3. Clinical Lecture on Idiopathic Hæmaturia, Fibrinous Moulds of the Ureter and Interstitial Nephritis the Result of Impacted Calculus. Medical and Surgical Reporter, January 25, 1890.
5. Some Considerations Preliminary to the Study of Medicine being the Introductory Address to the One Hundred and Twenty-fourth Annual Session of the Medical Department of the University of Pennsylvania, delivered October 1, 1889. Pamphlet, 8vo, pp. 16.


7. Clinical Lecture on Chronic Emphysema and Chronic Bronchitis with Emphysema. Medical and Surgical Reporter, April 26, 1890.


10. The Bright’s Disease of Pregnancy, with Special Reference to its Management. New York Medical Record, January 3, 1891.


13. Clinical Lecture on a Case of Exophthalmic Goitre, two Cases of Hæmiplegia and one of Rheumatoid Arthritis. Medical and Surgical Reporter, September 26, 1891.


16. Medical Treatment of Acute and Chronic Cystitis. A paper read before the Philadelphia County Medical Society, November 11, 1891, and republished in the Medical and Surgical Reporter, December 19, 1891, and other journals.

17. Note on the Present Epidemic of Influenza. Times and Register, January 16, 1892.


19. Investigation of a Case of Nervous Disease. University Medical Magazine, April, 1892.

21. Aceton and Diacetic Acid, their Detection and Clinical Significance when found in Urine. University Medical Magazine, October, 1892.

22. The Morbid Anatomy and Diagnosis of Cholera. Read before the Philadelphia County Medical Society, September 14, 1892, and published in Medical News, September 17 to 24, 1892.


25. Chlorosis. A Clinical Lecture delivered at University Hospital. Published in University Magazine, February, 1893.


27. Heart Disease or Kidney Disease. Read before the Medical Society of the State of Pennsylvania, May 17, 1893, and published in the Medical News, July 3, 1893; also in the Transactions of the Society.


30. Diphtheria. A paper read before the John Guiteras Medical Society of the University of Pennsylvania, April 4, 1893.

31. On the Pathology and Treatment of Gout. A paper read before the Pan-American Medical Congress, September, 1893. Published in the Therapeutic Gazette, November 15, 1893.


JAMES WALLACE, M. D.

1. The Correction of Conical Cornea.
2. A New Astigmatic Chart.
3. Phlyctenular Keratitis.
4. Aristol in Interstitial Keratitis.
5. Granular Conjunctivitis.
7. Gonorrheal Ophthalmia.
9. Spontaneous Replacement of a Detached Retina.

HILL S. WARWICK, M. D.


HENRY R. WHARTON, M. D.

The following articles in American Text-book of Diseases of Children. (Starr.)
Tracheotomy.
Intubation of the Larynx.
Congenital Malformation of the Intestine.
Diseases of the Anus and Rectum.
Phimosis.

J. WILLIAM WHITE, M. D.


6. Surgical Operations and Interesting Cases at the German Hospital. Reported by Dr. Arthur J. Patek, University Medical Magazine, March, 1894.


8. Syphilis. In collaboration with Dr. Wm. H. Furness. Annual of the Universal Medical Sciences, 1893.

9. Syphilis. In collaboration with Dr. Wm. H. Furness. Annual of the Universal Medical Sciences, 1894.

10. Surgical Progress. Abstracts in the American Journal of the Medical Sciences, 1893, 1894. In collaboration with Dr. A. C. Wood and Dr. C. L. Leonard.

WM. POWELL WILSON, Sc. D.
The Influence of External Conditions on Plant Life, in Biological Lectures, Marine Biological Laboratory, Wood's Holl, 1893.

DE FOREST WILLARD, M. D.


Talipes Calcaneus and Valgus. Medical News, 1893.

Address, Mutual Aid Association. Transactions Philadelphia County Medical Society, 1893.


Abscess of Liver following Amöbic Dysentery. (Musser.) University Medical Magazine, 1893, p. 525.

Cholecystectomy for Impacted Gall Stones. Transactions American Surgical Association, 1893.

LIGHTNER WITMER, PH. D.


2. Some Recent Experiments in the Aesthetics of Simple Visual Forms.


6. Pleasure and Pain from the Psychological Standpoint. Read before the Neurological Section of the Academy of Medicine of New York, February, 1894.

HORATIO C. WOOD, M. D., LL. D.

The Choreic Movement. Journal Nervous and Mental Diseases, April, 1893.

On the Action of Nitrous Oxide and the Mixture of Nitrous Oxide and Oxygen. Dental Cosmos, May, 1893.

On Chronic Contracted Kidney. University Medical Magazine, June, 1893.


THE TRUSTEE OF THE HOSPITAL.
The Friends and the Freedman.
Papers read before the International Congress of Charities and
Corrections, 1894.

JAMES K. YOUNG, M. D.
Annual Universal of the Medical Sciences. Section on Anatomy.
1891.
The same: Section on Anatomy, illustrated, 1892.
Keating's Cyclopaedia, 1890.
I. Treatise on Orthopaedic Surgery. Lea Bros. & Co., pp. 500,
illustrated, 1894.
A Pathological Classification of Hip Disease. Medical News.
Editorials and Reviews upon Orthopaedic Surgery and Anatomy.
Medical News.
Report of Clinical Lectures, by Professor De Forest Willard.
Medical News.
The Wood Bandage and Corset. Archives of Pediatrics and
Gynaecology.
The Diseases of the Eye associated with Spinal Caries. Trans-
actions American Orthopaedic Association, 1890.
Report of Bilateral Lumbar Abscess, with a Case. From Ameri-
can Orthopaedic Association, 1891.
Recovery from Hip Disease with Perfect Motion. University
Medical Magazine.
Ideal Plantar Spring for Flat-foot. University Medical Magazine.
Treatment of Cervical Potts Disease. University Medical Magazine.
Tenotomy of the Peronei for Talipes Valgus. University Medical
Magazine.
APPENDIX No. XI.

REPORT OF LIBRARIAN.

WILLIAM PEPPER, M.D., LL.D., PROVOST:

Dear Sir:—I have the honor to make the following report for the year ending October 1, 1893:

During that period the General Library has received accessions numbering 2494 bound volumes and 7894 unbound volumes, pamphlets and periodicals (exclusive of periodicals regularly subscribed for out of the various funds), distributed as follows:

The Tobias Wagner Library, 371 bound volumes.
The Isaac Norris Library, 22 bound volumes.
The J. B. Lippincott Library, 247 bound volumes.
The Evans Rogers Library, 22 bound volumes.
The Henry Seybert Library of Modern Spiritualism, 144 bound volumes and 20 unbound pamphlets.
The Krauth Library of Philosophy, 25 bound volumes.
The B. B. Comegys, Jr., Library of Philosophy, 21 bound volumes.
The Psychological Library, 173 bound volumes.
The Leutsch Library, 4 bound volumes.
The William Pepper Medical Library, 44 bound and 43 unbound volumes and pamphlets.
The Wharton School of Finance and Economy, by gift of Joseph Wharton, 164 bound volumes.
Forty bound volumes were purchased out of the Library General Fund, resulting from the sale of duplicates.
The gifts to the Library were, as usual, numerous and valuable, amounting to 2217 bound volumes and 7831 unbound volume, pamphlets and periodicals.

Among these special mention may be made of some 450 volumes procured through Mr. Stewart Culin, while attending the recent international exhibition at Madrid, from the Spanish Ministerio de Fomento and several living Spanish writers. Many books were also received from Dr. Horace Howard Furness, Dr. S. Weir Mitchell, Charles Hare Hutchinson, Esq., Miss Edith Shapleigh, Joseph G. Rosengarten, Esq., Dr. Arthur V. Meigs, Dr. Marcus Jastrow, Professor Morris Jastrow, Jr., Mr. William R. Newbold, Mr. F. C. Macauley, the estate of Dillwyn Parrish, and other...
sources. A library of Chinese works was presented to us by Mr. L. Dupont Syle; and, finally, the class of 1893, of the College, continued the admirable practice of its predecessors in presenting a sum of money to be expended in the purchase of books on several subjects.

During the year department libraries were established in the College, numbering, with the books reserved for use in the Biological Laboratory, about 600 volumes.

To the George Biddle Memorial Law Library were added 727 volumes, making the total 9145 volumes at the close of the year.

The cataloguing of the Library has proceeded as usual, and since the last report 27,342 cards have been written, representing 11,495 works in 13,507 volumes.

A marked increase has been observed in the use of the Library on the part of both professors and students, as well as of persons not connected with the University, a natural result of the growing realization of the great value of the collections now contained in it.

Respectfully submitted,

GREGORY B. KEEN,
Librarian.
APPENDIX No. XII.

REPORT OF THE DEAN OF THE COLLEGE FACULTY.

TO THE Provost.

Dear Sir:—I have the honor to present my report as Dean of the College Faculty covering the period from the end of the first term of the year 1892–93, to the end of the present year in June, 1894.

The following tables show the number of students in College during that time, and their rank and distribution among the different courses:
### Arts:

**Freshmen:**
- Regular: 44
- Special or Partial: 4
- Total: 48

**Sophomores:**
- Regular: 21
- Special or Partial: 6
- Total: 27

**Juniors:**
- Regular: 17
- Special or Partial: 4
- Total: 21

**Seniors:**
- Regular: 23
- Special or Partial: 2
- Total: 25

### Science:

**Freshmen:**
- Regular: 47
- Special or Partial: 13
- Total: 60

**Sophomores:**
- Regular: 38
- Special or Partial: 20
- Total: 58

### Technical Courses:

**Freshmen:**
- In Chemistry: 4
- In Chemical Engineering: 9
- In Civil Engineering: 3
- In Mechanical Engineering: 1
- In Architecture: 4

**Sophomores:**
- In Chemistry: 1
- In Chemical Engineering: 1
- In Civil Engineering: 2
- In Mechanical Engineering: 1
- In Architecture: 4

*Now called Arts and Science.  **Now called Science and Technology.*
### UNIVERSITY OF PENNSYLVANIA: STUDENTS IN THE COLLEGE.—Continued.

<table>
<thead>
<tr>
<th></th>
<th>1889-90</th>
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<th>1891-92</th>
<th>1892-93</th>
<th>1893-94</th>
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<td>17</td>
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<td>10</td>
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*Note: The table provides a breakdown of student enrollments by major and year from 1889-90 to 1893-94.*
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<td>3</td>
<td>26</td>
<td>26</td>
<td>9</td>
<td>9</td>
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</tbody>
</table>

| Fellows                  | 2 | 2 | 7 | 7 | 10| 10| 11| 11| 12| 12| 12| 12|

| Special Course in Architectural Drawing and Painting |          | 25| 25| 15 |   |   |   |   |   |   |   |   |

| Total number             | 430| 479| 565| 617| 689|
The following table shows the number of instructors and students in each year for the last twenty years:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>74-75</th>
<th>75-76</th>
<th>76-77</th>
<th>77-78</th>
<th>78-79</th>
<th>79-80</th>
<th>80-81</th>
<th>81-82</th>
<th>82-83</th>
<th>83-84</th>
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<tr>
<td>Instructors</td>
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<td>32</td>
<td>34</td>
<td>34</td>
<td>33</td>
<td>36</td>
<td>30</td>
<td>24</td>
<td>56</td>
<td>31</td>
</tr>
<tr>
<td>Students</td>
<td>215</td>
<td>240</td>
<td>236</td>
<td>264</td>
<td>279</td>
<td>286</td>
<td>296</td>
<td>335</td>
<td>356</td>
<td>416</td>
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<table>
<thead>
<tr>
<th>YEAR</th>
<th>84-85</th>
<th>85-86</th>
<th>86-87</th>
<th>87-88</th>
<th>88-89</th>
<th>89-90</th>
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<th>91-92</th>
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<th>93-94</th>
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<tbody>
<tr>
<td>Instructors</td>
<td>38</td>
<td>39</td>
<td>42</td>
<td>47</td>
<td>48</td>
<td>56</td>
<td>68</td>
<td>75</td>
<td>88</td>
<td>96</td>
</tr>
<tr>
<td>Students</td>
<td>381</td>
<td>388</td>
<td>375</td>
<td>352</td>
<td>406</td>
<td>430</td>
<td>479</td>
<td>565</td>
<td>616</td>
<td>689</td>
</tr>
</tbody>
</table>

An examination of these tables shows that the growth of the College has been continuous, and divided among all departments. The number of students has doubled within the past ten years, and is now nearly four times what it was twenty years ago. The actual increase during the present year is larger than in any year in the history of the College.

Apparently it is slightly exceeded by the increase in the year 1891-92, but this is due to a change in the plan of registration.

In that year were included certain classes of special students, who attended for a limited amount of instruction, and whose connection with the College was very slight. It has now been thought best not to include these as members of the College, but to regard them as merely affiliated with the College. The class in water-color painting, registered in 1891-92, may be taken as an example, and this year there were classes—which, although not indicated above, have their places below in the list of courses given by the different instructors—in Mathematics, English Literature and American and European History of a grade which is not regarded as that of college work, and yet differs from the work in University Extension. The results obtained in these classes have been most satisfactory, and many students are materially assisted who otherwise would be unable to obtain the instruction they desire. If these students were included, the total number in the College would exceed seven hundred and fifty.

The increase in the number of students in the Arts course—which by the reorganization described below is now known as the
courses in Arts and Science, has been marked. This is in part, an increase by students drawn from without by the more attractive arrangement of the course and in common with the general growth of the College, and in part at the expense of the other existing courses. The withdrawal of the course in Natural History, has relegated the students formerly registered in that course to the courses in Arts and Science, and a considerable number of Sophomores in the course in Science—now known as the course in Science and Technology—who proposed taking the courses in Languages, Economics or pure Science in Junior year, and were therefore not seeking the technical scientific courses, changed to the Sophomore class of the new Arts course.

This shows a large decrease in the Sophomore class in the course in Science and Technology, but the Freshman class has again increased, and, as in the future, students in this course cannot change to other courses, and are regarded upon entrance as applicants for what may be termed the five-year courses in Technical Science, the loss will shortly be made up. This is the hope of all concerned in technical education, as these courses are held to be the best for that class of students.

The principal increase in the rolls has been in the four-year technical courses. Of the 313 students pursuing the courses in Architecture, Chemistry, Chemical Engineering, Civil Engineering, Mechanical Engineering and Electrical Engineering, 221 are in the four-year courses, and 92 are in the Junior, Senior and Post Senior years of the five-year courses in Chemistry, Civil Engineering and Mechanical Engineering.
The following table presents a recapitulation of the students in the technical scientific courses, for a period covered by the last five years:

<table>
<thead>
<tr>
<th>Recapitulation</th>
<th>1889-90</th>
<th>1890-91</th>
<th>1891-92</th>
<th>1892-93</th>
<th>1893-94</th>
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<tr>
<td><strong>Technical Students:</strong></td>
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<tr>
<td>In Chemistry,</td>
<td>19</td>
<td>24</td>
<td>36</td>
<td>55</td>
<td>61</td>
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<tr>
<td>In Chemical Engineering,</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>5</td>
</tr>
<tr>
<td>In Civil Engineering,</td>
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<td>30</td>
<td>30</td>
<td>39</td>
<td>54</td>
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<td>In Mining,</td>
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<td>—</td>
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<tr>
<td>In Mechanical Engineering,</td>
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<td>85</td>
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<td><strong>Total:</strong></td>
<td>78</td>
<td>126</td>
<td>190</td>
<td>237</td>
<td>313</td>
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</table>

The Junior and Senior classes in the Chemistry, Civil, and Mechanical Engineering include students taking either the four-year course or the five-year course. The division of these classes is shown in the following table:

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<td>Five-Year Course.</td>
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<td>Regular.</td>
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<td><strong>Juniors:</strong></td>
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<td>In Mechanical Engineering,</td>
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<td>In Civil Engineering,</td>
<td>5</td>
<td>2</td>
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<tr>
<td>In Mechanical Engineering,</td>
<td>10</td>
<td>2</td>
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<tr>
<td><strong>Total:</strong></td>
<td>48</td>
<td>19</td>
</tr>
</tbody>
</table>
In the technical courses all Post Seniors (25) belong to the five-year course and all Freshmen and Sophomores (157) to the four-year course. There are no five-year courses in Architecture and Chemical Engineering.

The classes in the Wharton School, the School of Biology and the course in Music show healthy increase. This is a source of gratification, as much more care has been bestowed upon the admission of candidates to these courses and the standard of work has been advanced.

With the growth of the College as a whole there has been a steady growth in the number of students who come to us from places other than Philadelphia and its suburbs. In 1889-90 these students were 21 per cent of the entire student body; in 1890, 23 per cent; in 1891, 27 per cent; in 1892, 30 per cent, and in 1893, over 33 per cent.

The whole number of students admitted to the College this year was 298. Of these, 197 are upon the Freshman rolls, the remaining were admitted to advanced standing and take special courses in Biology and Music.

The following table shows the growth of the Freshman class during the past four years:

<table>
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<tr>
<th></th>
<th>1889-90</th>
<th>1890-91</th>
<th>1891-92</th>
<th>1892-93</th>
<th>1893-94</th>
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<tbody>
<tr>
<td>Freshmen</td>
<td>113</td>
<td>109</td>
<td>140</td>
<td>146</td>
<td>197</td>
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<td>(Including Partial Students working with Freshmen class, but excluding Special Students in Biology, Architecture and Music.)</td>
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</table>

The following tables show the courses of instruction given during the present year with the number of students attending each course. They may be compared with the tables presented in the report for 1889. The departments are denoted by the following symbols:

Arts and Science, A; Science and Technology, Sc. for the lower classes, and Sc. 1, 2, 3, 4 in the upper classes for Chemistry, Mining, Civil and Mechanical Engineering respectively; the four-year courses Mechanical Engineering, M. E.; Electrical Engineering, E. E.; Chemistry, Ch.; Chemical Engineering,
Ch. E.; Civil Engineering, C. E.; Architecture, Arch.; Wharton
School, Wh.; Biology, B.; Music, M.; Special Course in Archi-
The numbers of the classes precede the symbols for the depart-
ments, and are: Freshmen, 4; Sophomores, 3; Juniors, 2;
Seniors, 1. Courses open to all students, under restrictions, are
not given a class number. The elective courses are in italics.
<table>
<thead>
<tr>
<th>Class</th>
<th>Subject of Course</th>
<th>Hours per Week</th>
<th>Number of Students</th>
<th>Instructor</th>
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<tr>
<td></td>
<td></td>
<td>Term 1</td>
<td>Term 2</td>
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<tr>
<td>1, 2 A</td>
<td>Sanskrit.</td>
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<tr>
<td>1 A.</td>
<td>1. Whitney's <em>Sanskrit Grammar.</em> Tarman's <em>Reader,</em></td>
<td>2</td>
<td>2</td>
<td>3</td>
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<tr>
<td></td>
<td>2. Tarman's <em>Reader.</em> Selected Hymns from the Veda,</td>
<td></td>
<td></td>
<td>omitted</td>
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<td></td>
<td><strong>HEBREW.</strong></td>
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<tr>
<td></td>
<td>into English and <em>vice versa.</em> Six or eight chapters of</td>
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<td></td>
<td>Genesis. Translation at sight.</td>
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<tr>
<td>1 A.</td>
<td>2. Review of grammar. Selections from historical and</td>
<td>2</td>
<td>2</td>
<td>5</td>
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<td></td>
<td>prophetic books.</td>
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<tr>
<td>1 A.</td>
<td>3. Review of grammar. Reading at sight. Translation,</td>
<td>1</td>
<td>2</td>
<td>5</td>
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<tr>
<td></td>
<td><strong>GREEK.</strong></td>
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<tr>
<td>4 A.</td>
<td>1. Xenophon's <em>Economicus.</em> Greek composition,</td>
<td>1</td>
<td>1</td>
<td>24</td>
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<tr>
<td></td>
<td>Lysias. Plato's <em>Apology,</em> Greek composition,</td>
<td>I, 2</td>
<td>I, 2</td>
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<tr>
<td>3 A.</td>
<td>2. Xenophon's <em>Hieron.</em> Euripides' <em>Medea,</em> Plato's</td>
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<td>24</td>
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<td></td>
<td><em>Laches,</em> Andocides' <em>De Mystarum.</em> Greek composition,</td>
<td>II, 2</td>
<td>II, 2</td>
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<td></td>
<td>Jevon's Greek Literature. Private reading. Sophocles'</td>
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<td></td>
<td><em>Philoctetes.</em> Euripides' <em>Bacchae,</em></td>
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<tr>
<td>1 A.</td>
<td>4. Plato's <em>Protagoras,</em></td>
<td>3</td>
<td>3</td>
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<td></td>
<td>4. Aristophanes' <em>Clouds,</em></td>
<td>1</td>
<td>1</td>
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<td>1 A.</td>
<td>4. Homer's <em>Iliad.</em> Jevon's Greek literature. Private</td>
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<td></td>
<td>reading. <em>Odyssey,</em></td>
<td>2</td>
<td>2</td>
<td>17</td>
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<td></td>
<td><strong>A. Demosthenes' Oration on the Crown</strong> (voluntary),</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>CLASS.</td>
<td>SUBJECT OF COURSE.</td>
<td>HOURS PER WEEK.</td>
<td>INSTRUCTORS.</td>
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<td>Term 1</td>
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<td>Number of Students</td>
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<td>FRENCH.</td>
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<tr>
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<td>3 Arch.</td>
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<td>17</td>
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<tr>
<td>3 Sc.</td>
<td></td>
<td>2</td>
<td>2</td>
<td>27</td>
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<tr>
<td>3 M. E.</td>
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<td>1</td>
<td>1</td>
<td>55</td>
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<td>3 C. E.</td>
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<td>4</td>
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<tr>
<td>4 Sc.</td>
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<td>5.</td>
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OLD FRENCH.

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<th>CLASS.</th>
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<th>HOURS PER WEEK.</th>
<th>INSTRUCTORS.</th>
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<tr>
<td>1, 2 A.</td>
<td></td>
<td>2</td>
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<tr>
<td>1, 2 A.</td>
<td><em>Toynbee, Specimens of Old French,</em></td>
<td>2</td>
<td>2</td>
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</tbody>
</table>
### OLD PROVENÇAL.

| 1, 2 A. | Lectures on the Grammar. Bartsch's *Chrestomathie Provençale*. The Poème sur Boece, the prose extracts, and selections from the following Troubadours will be read: Cercalmont, Marcabrun, Jaufre Rudel, Guillem de Cabestaing, Peire Rogier, Alphonse II., Roi d'Aragon, Arnaut de Maroll, Peire Vidal, Girant de Salinlac, Girant Riquier, Roman de Jaufre, Peire de Corbiac, Peirol, Daude de Pradas. | 1 | 1 | 3 | Prof. Rennert.

### ITALIAN.

| 1, 2 A. | Dante, *Selections from the Inferno*; Tasso, *La Gerusalemme Liberata*. Cantos 1 and 2. Lectures on the Literature. (Snell's *Primer of Italian Literature* as a basis.) | 2 | 2 | 6 |

### SPANISH.


### GERMAN.

| 1 A. | Platen's *Abassiden*; Goethe's *Egmont*; Schiller's *Gedichte*; Jagemann's *Materials for German Composition*; History of German Literature. | 3 | 3 | 8 |

| 2 Sc. | Gore's *German Science Reader*; Helmholtz's *Goethe's Wissenschaftliche Arbeiten*; Freytag's *Journalisten*; | 2 | 2 | 1 |

| 2 A. | Whitney's *Brief German Grammar*; Niebuhr's *Heroengeschichten*; Koerner's *Zriny*; Stein's *German Exercises*, | 4 | 4 | 6 |

| 3 Sc. | Cohn's *Bakterien*; Virchow's *Nahrungs- und Genussmittel*; Heine's *Prose*; Harris' *German Composition*, | 2 | 6 | 30 |

| 6 Sc. | Cohn's *Bakterien*; Virchow's *Nahrungs- und Genussmittel*; Heine's *Prose*; Harris' *German Composition*, | 4 | 4 | 6 |

| 8 Sc. | | | | |

Prof. Seidensticker.

Prof. Gudeman.

Prof. Seidensticker.

Prof. Gudeman.

Mr. Wesselhoft.
<table>
<thead>
<tr>
<th>Class.</th>
<th>Subject of Course.</th>
<th>Hours per Week.</th>
<th>Number of Students.</th>
<th>Instructors.</th>
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</thead>
<tbody>
<tr>
<td>4 Sc.</td>
<td>6. Collar-Eysenbach's German Grammar; Hauff's Das Kalle Herz; Auerbach's Brigitta; Heyse's L'Arrabiata.</td>
<td>5</td>
<td>33</td>
<td>Mr. Wesselhoeft.</td>
</tr>
<tr>
<td>4 M. E. 4 C. E. 4 Ch. E. B. 1.</td>
<td>7. The same, without Hauff's Das Kalle Herz.</td>
<td>3</td>
<td>40</td>
<td>&quot;</td>
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<td>B. 2.</td>
<td>9. Joynes-Meissner's German Grammar; Brandt's German Reader. Three hours.</td>
<td>3</td>
<td>12</td>
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<tr>
<td>1 A.</td>
<td>10. Grammar and exercises continued. Hodges' Course of Scientific German; Cohn's Bakterien.</td>
<td>2</td>
<td>8</td>
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<td>1, 2 A.</td>
<td>4. Gothic Grammar and Ulfilas.</td>
<td>2</td>
<td>8</td>
<td>omitted</td>
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<tr>
<td>1, 2 A.</td>
<td>5. Difficulties and mooted points of German Grammar.</td>
<td>1</td>
<td>omitted</td>
<td>Prof. Seidensticker.</td>
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</table>

**PHILOSOPHY.**

<table>
<thead>
<tr>
<th>2 Wh.</th>
<th>2 Sc.</th>
<th>2 A.</th>
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<th>2 Ch.</th>
<th>2 Sc.</th>
<th>2 A.</th>
<th>1 A.</th>
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<tbody>
<tr>
<td>1. LOGIC.—Lectures and recitations, covering in outline the Inductive and Deductive Logic. Jevons' Lessons in Logic is the textbook used.</td>
<td>2</td>
<td>96</td>
<td>Prof. Fullerton.</td>
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<tr>
<td>2. ETHICS.—Lectures and recitations. The course is critical and constructive.</td>
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<tr>
<td>6. HISTORY OF ETHICAL THEORIES. (Ancient and Mediaeval.)</td>
<td>1</td>
<td>4</td>
<td>Dr. Newbold.</td>
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<tr>
<td>7. HISTORY OF ETHICAL THEORIES. (Modern.)</td>
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<tr>
<td>3. HISTORY OF PHILOSOPHY.—Lectures with use of Schweigter's Outline,</td>
<td>2</td>
<td>21</td>
<td>Prof. Fullerton.</td>
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<tr>
<td>4. THE DEVELOPMENT OF IDEALISM.—Lectures and recitations,</td>
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<tr>
<td>5. THE PHILOSOPHICAL CLUB.—Open to Seniors of all departments. Meets once in a fortnight, in the evening, for discussions on special topics in Philosophy and Psychology,</td>
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### PSYCHOLOGY.

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<tr>
<td>1. GENERAL PSYCHOLOGY.—James' <em>Outlines of Psychology</em>,</td>
<td>2. EXPERIMENTAL PSYCHOLOGY.—The Physiology of the Nervous System, and Sensation,</td>
<td>3. EXPERIMENTAL PSYCHOLOGY.—The Psychology of Perception,</td>
<td>4. GENERAL PSYCHOLOGY,</td>
<td>5. AMERICAN POLITICAL ORATIONS,</td>
<td>6. GOVERNMENT IN THE UNITED STATES, (a) the States, (b) the Nation (1776–1892),</td>
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### AMERICAN HISTORY AND GOVERNMENT.

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<th>5 Prof. Thorpe.</th>
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<td>(b) The Colonial Charters, 1606–1776.</td>
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<td>(c) The State Constitutions and State Governments, 1776–1892.</td>
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<td>Charter, Constitutions, 1776, 1790, 1834, 1873.</td>
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<td>(b) The Government of Massachusetts, 1620–1892.</td>
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<tr>
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<td>Charter, Constitution, 1780.</td>
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<td></td>
<td>(c) The Government of Virginia, 1606–1892.</td>
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<td>Charters, Constitutions, 1776, 1830, 1850, 1864, 1868–1870.</td>
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<td>(d) The Constitution of the States of the Northwest.</td>
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<td>(e) The Government of American Cities. History,</td>
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<td>I A. H.</td>
<td>2. English Constitutional History.—The Social and Political Condition of England</td>
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<td>in the Early Middle Ages, and the Constitutional Development since,</td>
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**European History.**

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**Instructors.**

- Prof. Thorpe.
- Prof. Cheyney.
- Prof. Robinson.
- Mr. Munro.
| 1, 2 Wh. | 3. **English Economic History.**—The systems of land-holding and industry in early England, and the economic changes and social development since, ... |
| 1 Wh. | 10. **Mediaeval History.**—The great founders among the new races, Theodoric, Clovis, Charlemagne. The age of the Crusades, ... |
| 1 Wh. | 7. **The Renaissance and Reformation.**—The beginnings of the modern spirit in Italy and Germany, illustrated by the progress of Literature and Art during the fourteenth and fifteenth centuries. The history of the Papacy from the opening of the Conciliar period to indicate the earlier stages of the Reformation, and the progress of the Renaissance. The history of the period of Charles V., and of the Thirty Years' War, ... |

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<th>PUBLIC LAW AND POLITICS</th>
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**BUSINESS LAW AND PRACTICE.**

| 1 Wh. | METHODS OF ACCOUNTING, | 2 | 2 | 37 | Prof. Falkner. |
| 2 Wh. | MERCANTILE PRACTICE. — Modern business methods, corporations, trusts, panics and stock and produce exchanges, | 2 | 2 | 37 | Prof. Johnson. |
| 1 Wh. | MERCANTILE PRACTICE.—History and Development of Corporations and Trusts; Railway and Corporation Finance, | 2 | 2 | 20 | “ |
| 1 Wh. | MERCANTILE LAW, | - | 2 | 20 | Prof. Falkner. |
| Post Sc. | 4. BUSINESS LAW AND CONTRACTS, with especial reference to Engineering Contracts, | 1 | 1 | 22 | Mr. Wintersteen. |

**ECONOMICS AND SOCIAL SCIENCE.**

| 2 Wh. | POLITICAL ECONOMY.—Walker's *Political Economy*, and Adam Smith's *Wealth of Nations*, | 2 | 2 | 37 | Prof. Patten. |
| 2 Wh. | GEOGRAPHY AND HISTORY OF COMMERCE, | 1 | 1 | 37 | Prof. Falkner. |
| 2 Wh. | LECTURES ON FINANCE.—Banks of the United States. Ten Lectures, | - | - | 37 | Dr. Bolles. |
| 2 Wh. | LECTURES ON FINANCE.—General Theory of Banking. Ten Lectures, | - | - | 37 | Dr. Adams, Prof. Patten. |
| 1 Wh. | 5. POLITICAL ECONOMY.—Mill's *Political Economy*, | 2 | - | 20 | “ |
| 1 Wh. | 6. POLITICAL ECONOMY.—Ingram's *History of Political Economy* and Patten's *Dynamic Economics*, | - | 2 | 20 | “ |
1 Wh.
9. STATISTICS.—Lectures on investigation.

1 Wh.
15. LECTURES ON TRANSPORTATION.—Railroads, Waterways.

1 Wh.
7. FINANCE.—Bastable's work on Public Finance, supplemented by lectures.

1 Wh.
11. LECTURES ON FINANCE.—The Money Market, Bonds, Mortgages, Investments, Panics, Corporations, etc. Ten Lectures.

LECTURES ON TRANSPORTATION

FINANCE

LECTURES ON FINANCE

JOURNALISM.

1. ART AND HISTORY OF NEWSPAPER-MAKING.

2. NEWSPAPER-MAKING.—Law of libel; business management; typographical unions; cost and revenue; advertising; method of criticism, etc.

3. NEWSPAPER PRACTICE.—Exercises in reporting; editing of copy; condensation, etc.

4. CURRENT TOPICS.—Lectures on live issues in the United States and foreign countries. Professor JOHNSON will be assisted in this course by other instructors.

NOTE.—All the Courses in Journalism are open as voluntaries to all Juniors and Seniors in the College.

MATHEMATICS.


2. ALGEBRA.—C. Smith's Treatises on Algebra. Third edition. This course differs from Course 1, chiefly in the amount and nature of the work in the same topics.
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<th>CLASS.</th>
<th>SUBJECT OF COURSE.</th>
<th>HOURS PER WEEK.</th>
<th>Number of Students</th>
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<td>4 A.</td>
<td>3: SOLID GEOMETRY. — Chauvenet’s Geometry (Byerly’s edition),</td>
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<td>II. 2</td>
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<td>III. 2</td>
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<td>4 Ch.</td>
<td>5: TRIGONOMETRY.—Crawley’s Elements of Trigonometry: Prescribed for Freshmen in Arts and Science, Architecture and Chemistry. Two hours. Two sections of the Class meet Dr. Schwatt. (Second part of First Term, and Second Term),</td>
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<td>II. 2</td>
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<td>4 Sc.</td>
<td>6: PLANE AND SPHERICAL TRIGONOMETRY.—Crawley’s Elements of Trigonometry and Newcomb’s Tables of Logarithms. The derivation and application of the ordinary trigonometric formulae, the solution of Plane and Spherical Triangles, together with some introduction to Trigonometric Analysis,</td>
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<td>4 M. E.</td>
<td>8: PLANE AND SPHERICAL TRIGONOMETRY.—Crawley’s Elements of Trigonometry and Newcomb’s Tables of Logarithms. This course is more advanced than 6.</td>
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<td>7: SPECIAL WORK IN GEOMETRY, ALGEBRA AND TRIGONOMETRY,</td>
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<td>5 Sc.</td>
<td>10: ANALYTIC GEOMETRY.—Nichol’s Analytic Geometry,</td>
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<td>5 Sc.</td>
<td>11: ANALYTIC GEOMETRY.—Nichol’s Analytic Geometry, The fundamental properties of the straight line, Circle, Parabola, Ellipse and Hyperbola, including the chapter on the general equation of the second degree,</td>
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### 3 M. E.

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<th>Course Description</th>
<th>Credits</th>
<th>Notes</th>
<th>Instructor</th>
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<tr>
<td>11. ANALYTIC GEOMETRY.—C. Smith's <em>Conic Sections</em>. The fundamental properties of the straight line, Circle, Parabola, Ellipse and Hyperbola, including the chapter on the general equation of the second degree.</td>
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<td>Asst. Prof. Fisher.</td>
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<tr>
<td>16. DIFFERENTIAL AND INTEGRAL CALCULUS.—Rice and Johnson's <em>Differential and Integral Calculus</em> (abridged). A continuation of the preceding course.</td>
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### 3 C. E.

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<td>15a. CALCULUS.—The Elements of the Differential and Integral Calculus.</td>
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<td>12. ANALYTIC GEOMETRY OF THREE DIMENSIONS.—Smith's <em>Solid Geometry</em></td>
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### 2 M. E.

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<tr>
<td>19. ASTRONOMY.—Young's <em>Astronomy</em>, Williams, and lectures with references to Bertrand.</td>
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<td>Prof. Kendall.</td>
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<td>20. QUATERNIONS.—Lectures. For the Faculty prize in Mathematics, to members of the Junior Class.</td>
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<td>Asst. Prof. Fisher.</td>
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<td>27. A Course for Special Students, in preparation for work in the Department of Philosophy. Advanced course in Analytic Geometry, Modern Geometry.</td>
<td>1</td>
<td>1</td>
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<tr>
<td>22. THEORY OF EQUATIONS.—Burnside and Panton's <em>Theory of Equations</em>, including Determinants, Forsythe and lectures.</td>
<td>2</td>
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<td>Asst. Prof. Fisher.</td>
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<td>23. DIFFERENTIAL EQUATIONS.—Porsythe and lectures.</td>
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<td>Asst. Prof. Fisher.</td>
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<td>24. PROJECTIVE GEOMETRY.—Cremona's <em>Elements of Projective Geometry</em>, with supplementary lectures.</td>
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<td>Dr. Schwatt.</td>
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<td>25. METHODS OF CURVE TRACING, with some introduction to the THEORY OF HIGHER PLANE CURVES.</td>
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<td>26. MODERN GEOMETRY.—Lectures on Brocard's and Grebe's theories of the plane triangle; followed by applications of the same to conic sections.</td>
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<td>Asst. Prof. Fisher.</td>
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### CHEMISTRY

1. **General Inorganic Chemistry.**—The Freshman Class of the four-year course in Chemistry devote six hours per week to the experimental portion of this course; the Freshmen in Chemical Engineering, eight hours per week. Both classes recite twice per week. The Freshmen in Mechanical Engineering, Civil Engineering and Architecture, as well as the Sophomores in Arts and Science and in Science and Technology, devote three hours per week to this course. They all recite one hour per week.

2. **Analytical Chemistry.**—Qualitative Analysis. Laboratory practice with recitations. Preparation of a series of inorganic salts. The Juniors in Science and Technology in the Chemical Section are required to take twelve hours in this subject; the Sophomores of the four-year course in Chemistry, from eighteen to twenty hours; the Sophomores in Chemical Engineering, twelve hours; the Juniors in Metallurgy and Mining, six hours; Juniors and Sophomores in Civil Engineering (four-year course), four hours; Sophomores in Mechanical Engineering (four-year course) three hours (*First Term*); and the second-year Biological Class, six hours.

3. **Analytical Chemistry.**—Quantitative Analysis. Practice in both gravimetric and volumetric analysis, with careful drill in mineral analysis. Seniors in Chemistry take six hours in this course; Seniors in Metallurgy and Mining, four hours; Juniors in four-year Chemical course, twelve hours; Juniors in Chemical Engineering, twelve hours; and Sophomores in four-year Mechanical Engineering course, three hours (*for Second Term*).

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<th>Subject of Course</th>
<th>Hours Per Week</th>
<th>Number of Students</th>
<th>Instructors</th>
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<td>1 Sc. I.</td>
<td>ORGANIC CHEMISTRY—The instruction is by recitation and lectures. Prescribed for Juniors in Science and Technology in the Chemical Section, Juniors in the four-year course in Chemistry, and Juniors in Chemical Engineering, two hours.</td>
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<td>Prof. Smith and Assistants.</td>
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<tr>
<td>1 Sc. I.</td>
<td>ORGANIC CHEMISTRY—The Preparation of a series of typical organic compounds. It supplements Course 4, and is required of Seniors in Science and Technology in the Chemical Section, six hours, and Juniors in four-year course in Chemistry, twelve hours. One hour per week is devoted to a lecture or recitation on this subject,</td>
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<td>1 Sc. I.</td>
<td>APPLIED CHEMISTRY.—Lectures upon subjects pertaining both to inorganic and organic Chemistry, supplemented by regular and frequent excursions to works in and out of the city. This course is required of Seniors in Science and Technology in the Chemical Section, Seniors in Chemical Engineering, and Juniors in the four-year course in Chemistry. This regular work in College is supplemented by a course of lectures occupying one hour per week, delivered by graduates,</td>
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<td>INDUSTRIAL CHEMISTRY.—The execution of experimental studies in both applied inorganic and organic Chemistry,</td>
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<td>Post Ch.</td>
<td>SEMINAR.—Reading of journals, papers on special topics in Chemistry. Lectures delivered by advanced students,</td>
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<td>CHEMICAL THEORY—Lectures and recitations,</td>
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<td>10. ADVANCED ANALYTICAL CHEMISTRY.—This includes the discussion of electrolytic methods, gas analysis, and special topics in this field of Chemistry,</td>
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<td>3. MASS-PHYSICS, ENERGY,</td>
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<td>2 M. E.</td>
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<tr>
<td>2 C. E.</td>
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**SANITARY SCIENCE.**

1. Sanitary Science.—Lectures on Heating and Ventilation in their relation to architectural practice. Illustrated by models and drawings,

<table>
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<tr>
<th></th>
<th>Term 1</th>
<th>Term 2</th>
<th>Number of Students</th>
<th>Instructors.</th>
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<td>Prof. Barker.</td>
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<td>Dr. Abbott.</td>
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<td>Asst. Prof. Goodspeed. Dr. Richards.</td>
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<td></td>
<td>57</td>
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<td>40</td>
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<td>6-3</td>
<td>39</td>
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<td>Prof. Barker.</td>
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</table>
### SANITARY SCIENCE

2. **SANITARY SCIENCE.**—Lectures on Plumbing and Drainage in their relation to architectural practice. Illustrated by models and drawings.

<table>
<thead>
<tr>
<th>Semester</th>
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#### METALLURGY

1. **Theory of Metallurgical processes, and of the dressing and mechanical treatment of ores.**

2. **Assaying.**

3. **Demonstrations of the principal metallurgical processes by furnace.**

4. **Lectures on the production of pig, weld, and temper iron, and of silver, copper and lead. The class also makes visits to metallurgical works in the city and State.**

<table>
<thead>
<tr>
<th>Semester</th>
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#### MINERALOGY

1. **Mineralogy Begun.**—Crystallography, native elements, sulphides, chlorides, fluorides and oxides.

2. **Mineralogy.**—Sulphates, phosphates, etc. Carbonates and silicates.

3. **Determinative Mineralogy.**

4. **Physical Mineralogy.**—Determination of minerals by physical properties, use of contact and reflecting goniometer, polariscope, stauroscope, refractometer, etc.

5. **Mineralogy, Briefer Course.**—This course embraces the salient points of Courses 1 and 2, but only such minerals as are of economic importance are considered.

<table>
<thead>
<tr>
<th>Semester</th>
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#### MINING

1. **Mining Engineering.**—Construction of parts of mines and mining machinery, from notes and sketches.

2. **Mining Engineering.**—Lectures on the methods used in prospecting for and developing ore and coal deposits.

<table>
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<tr>
<td>Post Sc. 2</td>
<td>3. MINING ENGINEERING.—Lectures on the ventilation and drainage of mines. Special mining problems in faulted strata, more especially in coal mining. Excursions for two weeks to the Anthracite Coal Regions, to make underground surveys, and to learn how to examine a mine and report its condition.</td>
</tr>
<tr>
<td>1 Sc. 2</td>
<td>4. MINING ENGINEERING.—Lectures on the principles involved and the machinery employed in haulage, hoisting and pumping in mines.</td>
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<tr>
<td></td>
<td>GEOLGY.</td>
</tr>
<tr>
<td></td>
<td>1. LITHOLOGY.—Prescribed for Juniors in Metallurgy and Mining.</td>
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<tr>
<td>2 Sc. 2</td>
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<tr>
<td>Post Sc. 1, 2, 3</td>
<td>3. STRATIGRAPHY of the rock systems in connection with Paleontology, Laws of Dynamite Geology, Structural Geology of North America, with reference to that of Europe, with the principal minerals and fossils and distribution of metals and fuels.</td>
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<tr>
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<td>BIOLOGY.</td>
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<td>ZOOLOGY.</td>
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<td>1 B</td>
<td>3. SYSTEMATIC STUDY OF THE INVERTEBRATES.—Laboratory work, with explanatory Lectures.</td>
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<td>1 B</td>
<td>8. MAMMALIAN ANATOMY.—Lectures and Laboratory work,</td>
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<td>2 B</td>
<td>24. HUMAN ANATOMY.—Laboratory exercises. Six hours,</td>
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<tr>
<td>2 B</td>
<td>5. ELEMENTARY VERTEBRATE MORPHOLOGY.—Laboratory exercises, with explanatory Lectures,</td>
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<tr>
<td>6. ANIMAL HISTOLOGY.—Lectures and Laboratory work</td>
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<td>7. ANIMAL EMBRYOLOGY.—Lectures and Laboratory work</td>
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<tr>
<td>9. ANIMAL HISTOLOGY.—Advanced Course. Lectures and Laboratory work</td>
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<td>10. ANIMAL EMBRYOLOGY.—Advanced Course. Lectures and Laboratory work</td>
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<td>11. ANIMAL, EMBRYOLOGY.—Advanced Course. Lectures and Laboratory work</td>
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<td>12. VERTEBRATE MORPHOLOGY.—Advanced Course. Lectures and Laboratory work</td>
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<td>13. ANTELOLOGY OF THE MAMMALIA.—Lectures and Laboratory work</td>
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<tr>
<td>22. THE MECHANISM OF LOCUMOTION,</td>
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<tr>
<td>23. MAMMALIAN NEUROLOGY AND CRANIOLOGY</td>
<td>2</td>
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<tr>
<td>21. ENTOMOLOGY.—The General Anatomy of Insects, with practical exercises in Systematic Coleopterology</td>
<td>omitted</td>
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<tr>
<td>14. GENERAL STRUCTURAL BOTANY.—Lectures and Laboratory work</td>
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<td>15. SYSTEMATIC STUDY OF THE PHENOGAMS.—Lectures and Laboratory work</td>
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<td>16. PLANT HISTOLOGY.—Lectures and Laboratory work</td>
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<td>17. SYSTEMATIC STUDY OF CRYPTOGRAMS.—Lectures and Laboratory work</td>
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<tr>
<td>18. PLANT PHYSIOLOGY.—Lectures and Laboratory work</td>
<td>7</td>
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<tr>
<td>19. ECONOMIC BOTANY.—Lectures,</td>
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<tr>
<td>26. COMPARATIVE MORPHOLOGY (MACRO- AND MICROSCOPIC) OF LEADING NATURAL ORDERS OF PLANTS.—Lectures and daily Laboratory exercises,</td>
<td>2</td>
</tr>
<tr>
<td>27. A COURSE OF LECTURES and Practical Demonstrations on the organization of Museums of Comparative Botany for Schools, Colleges and Universities,</td>
<td>omitted</td>
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</table>
## Subject of Course

### Architecture

<table>
<thead>
<tr>
<th>Class</th>
<th>Subject of Course</th>
<th>Hours per Week</th>
<th>Number of Students</th>
<th>Instructors</th>
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<tbody>
<tr>
<td>4 Arch.</td>
<td><strong>Architectural Drawing</strong>—Completion of a stated amount of drawing during the summer vacation as per programme issued at end of College year. Drawings criticised and passed upon at close of vacation by the instructor. Prescribed (alternately with office work) for all undergraduates in Architecture.</td>
<td>Term 1: 5, Term 2: 5</td>
<td>16</td>
<td>Mr. Dawson</td>
</tr>
<tr>
<td>4 Arch.</td>
<td><strong>Mechanical Drawing</strong>—Geometrical problems and ornamental forms to cultivate accuracy in the use of drawing instruments. Projections, isometric drawing and elementary shades and shadows.</td>
<td>Term 1: 3, Term 2: —</td>
<td>16</td>
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<tr>
<td>4 Arch.</td>
<td><strong>Elements of Architecture</strong>—Typical Greek, Roman and Gothic Mouldings. Architectural features rendered in India ink.</td>
<td>Term 1: 3, Term 2: —</td>
<td>16</td>
<td>Mr. Millard</td>
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<tr>
<td>4 Arch.</td>
<td><strong>Elementary Design</strong>—Analysis and rendering of architectural forms. A continuation of 4 Arch. 3.</td>
<td>Term 1: —, Term 2: 3</td>
<td>23</td>
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<tr>
<td>4 Arch.</td>
<td><strong>Descriptive Geometry</strong>.</td>
<td>Term 1: —, Term 2: 3</td>
<td>23</td>
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<tr>
<td>3 Arch.</td>
<td><strong>Freehand Drawing</strong>—Drawing from casts of architectural ornament in charcoal and pencil.</td>
<td>Term 1: 5, Term 2: 5</td>
<td>12</td>
<td>Mr. Dawson</td>
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<tr>
<td>3 Arch.</td>
<td><strong>Shades and Shadows</strong>—Lectures on theory and practical exercises.</td>
<td>Term 1: 3, Term 2: —</td>
<td>27</td>
<td>Mr. Millard</td>
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<tr>
<td>1 Sp. Arch.</td>
<td><strong>Working Drawings</strong>—The preparation of working drawings to scale and full size, from notes and dictations. Drafting room exercises and personal direction.</td>
<td>Term 1: 3, Term 2: —</td>
<td>10</td>
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<tr>
<td>3 Arch.</td>
<td><strong>Building Construction</strong>—A consideration of modern practice in the building and finishing of ordinary structures in wood, brick and stone. Lectures.</td>
<td>Term 1: —, Term 2: 1</td>
<td>30</td>
<td>Prof. Laird</td>
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**Notes:**
- 3 Arch. B. 4: PROP. LAIRD.
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<th>Course</th>
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<th>Students</th>
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<tr>
<td>3 Arch.</td>
<td><strong>B. 5. PERSPECTIVE</strong>—Principles and practical exercises. (B. 5. follows directly on A. 5.),...</td>
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<tr>
<td>3 Arch.</td>
<td>B. 6. <strong>SKETCH DESIGN</strong>—Three and six hour programmes in design to be rendered in pencil and color in sketch form. Alternating with the regular monthly problems in design,...</td>
<td>12</td>
<td>33</td>
</tr>
<tr>
<td>1 Sp. Arch.</td>
<td>B. 6. SKETCH DESIGN—Problems to be rendered in sketch form in limited time. Alternating with the monthly problems in Design,...</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>3 Arch.</td>
<td>B. 7. <strong>SKETCH DESIGN</strong>—Monthly problems in design of simple character, embodying the application of elementary principles of design and the rendering of architectural drawings,...</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>4 Ch.</td>
<td>I. 1. <strong>FREEHAND DRAWING</strong>—Drawing in pencil from the object,...</td>
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<td>4 Sc.</td>
<td>I. 2. <strong>MECHANICAL DRAWING</strong>—Geometrical problems in pencil; geometrical drawing in ink, projections, developments, intersections and isometric drawing. Text-book, Faunce’s Mechanical Drawing,...</td>
<td>2</td>
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<tr>
<td>1 B.</td>
<td>I. 3. <strong>FREEHAND DRAWING</strong>—(a) Drawing in pencil from the object, (b) Drawing biological specimens from the object in pencil,...</td>
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<tr>
<td>2 Arch.</td>
<td>C. 1. <strong>FREEHAND DRAWING</strong>—Drawing in charcoal from casts of architectural ornament; in charcoal from casts of parts of the human figure and in pencil from photographs,...</td>
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<td>1 Sp. Arch.</td>
<td>C. 2. <strong>SKETCHING</strong>—Drawing in pencil from nature and from the object,...</td>
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<tr>
<td>2 Arch.</td>
<td>C. 3. <strong>PEN AND INK RENDERING</strong>—Rendering of architectural drawings in pen and ink; theory of the composition of line drawings. Exercises in two-hour periods during two years under personal direction and criticism. Text-book, Gregg’s Architectural Rendering in Pen and Ink,...</td>
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<td>1, 2 Arch.</td>
<td>Sp. Arch.</td>
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<tr>
<td>2 Arch. 1</td>
<td>MODELING.—Modeling in clay from the flat and the cast with special attention to architectural forms.</td>
<td>3 3 34</td>
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<td>1 Sp. Arch.</td>
<td>WATR-COLOR DRAWING.—Drawing in water-color from still life and from nature.</td>
<td>3 3 35</td>
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<td>1, 2 Arch.</td>
<td>SKETCH DESIGN.—Problems to be rendered in sketch form in limited time. Alternating with the regular problems in design.</td>
<td>15 15 18</td>
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<tr>
<td>1, 3 Arch.</td>
<td>SKETCH DESIGN.—Monthly problems in design developing the principles of planning and composition.</td>
<td>1 1 41</td>
<td>Prof. Laird and corps of Lecturers.</td>
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<tr>
<td>2 Arch. 1</td>
<td>HISTORY OF ARCHITECTURE.—Lectures and Recitations. Text-book, T. Roger Smith's Classic Architecture and Gothic and Renaissance Architecture.</td>
<td>1 1 omitted</td>
<td>Mr. Everett.</td>
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<td>2 Arch. 1</td>
<td>MECHANICS OF MATERIALS.—Principles of Mechanics and their practical application in the use of building materials.</td>
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<td>1 Arch. 2</td>
<td>GRAPHICAL STATICS.—A consideration of the stresses in beams, girders and trusses, and in piers, arches and abutments, with application of the graphical method to their analysis. Lectures and exercises.</td>
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<td>2 Arch. 1</td>
<td>ADVANCED BUILDING CONSTRUCTION.—Lectures on modern practice in the erection of large buildings, with attention to special forms of construction.</td>
<td>1 1 30</td>
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<td>2 Arch. 2</td>
<td>FREEHAND DRAWING.—Advanced drawing in charcoal from developed forms of architectural ornament and from casts of the human figure. Seniors in Architecture. Seven hours. Second-year Specials in Architecture. Seven hours,</td>
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<td>Course</td>
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<td>D. 2.</td>
<td>Sketching.—Completion of Course C. 2 by advanced studies in sketching from nature and objects of art.</td>
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<td>D. 6.</td>
<td>Sketch design.—Advanced Problems to be rendered in sketch form in limited time. Alternating with the regular problems in design. Seniors and Second-year Specials in Architecture.</td>
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<td>D. 7.</td>
<td>Design.—Advanced Problems in design completing the studies in planning and composition prescribed for Junior year.</td>
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<td>D. 8.</td>
<td>Thesis.—A problem in Architectural Composition requiring plans, sections, elevations and a descriptive essay.</td>
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<td>D. 9.</td>
<td>Acoustics.—The Acoustics of buildings. Application of known principles to practice. Lectures,</td>
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<td>G. 1.</td>
<td>Freehand drawing.—Pencil drawing from the flat and the object, charcoal drawing from the object and the cast, and the drawing of ornamental forms; with special reference to accompanying studies in Interior Architecture.</td>
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<td>G. 2.</td>
<td>Water-color drawing.—Studies in water-color, of tapestries and other fabrics executed in color, with reference to harmony and contrast of color and color composition,</td>
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<td>G. 4.</td>
<td>Theory of design.—Lectures on the principles of the design and application to First-year problems.</td>
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<td>G. 5.</td>
<td>Problems and Criticisms.—Weekly problems in the composition of ornament, comprising studies in fabrics; tapestries, silks, brocades, embroideries and rugs. Mosaics; in marble and glass. Stained glass; memorial and decorative. Art Metal Work; in brass, copper, gold, silver and iron. Furniture; Interior Wood Work; Carving in stone and wood, and the Treatment of Wall Surfaces; in color, with fabrics, and in relief. Problems studied under criticism and direction of the instructor in charge.</td>
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<td>D. 8.</td>
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<td>D. 9.</td>
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Mr. Everett.
Asst. Prof. Seeler.
Prof. Laird.
<table>
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<th>Class</th>
<th>Subject of Course</th>
<th>Hours per Week</th>
<th>Number of Students</th>
<th>Instructors</th>
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<tbody>
<tr>
<td>2 Int. Arch.</td>
<td><strong>H. 1. Freehand Drawing.</strong>—Advanced drawing in charcoal from casts of ornament and the human figure and from the object, with special reference to the Second-year studies in Interior Decoration.</td>
<td>4</td>
<td>2</td>
<td>Mr. Everett.</td>
</tr>
<tr>
<td>2 Int. Arch.</td>
<td><strong>H. 2. Water-Color Drawing.</strong>—Advanced color studies in executed decorations; with reference to harmony and contrast of color and color composition.</td>
<td>3</td>
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<tr>
<td>2 Int. Arch.</td>
<td><strong>H. 4. Theory of Design.</strong>—Lectures on the principles of the design and composition of interior decorations, with application to Second-year problems.</td>
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<tr>
<td>2</td>
<td><strong>H. 5. Problems and Criticisms.</strong>—Weekly problems in the design of interiors, involving the study of the Composition of Interior Decorations. Employing the various studies in Composition of Ornament, enumerated in Course G. 5, and covering broadly the subject of Interior Architecture.</td>
<td>8</td>
<td>2</td>
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<tr>
<td>Post Sc. 3</td>
<td><strong>I. 4. History of Architecture.</strong>—Outline course in the History of Architecture. Lectures and Recitations.</td>
<td>1</td>
<td>1</td>
<td>omitted Prof. Laird.</td>
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**Civil Engineering.**

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<th>Subject of Course</th>
<th>Hours per Week</th>
<th>Number of Students</th>
<th>Instructors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Sc. 3.</td>
<td><strong>17. Surveying.</strong>—Theory relating to the use and adjustments of the compass, transit, level, plane table and the smaller field instruments; relocation of boundaries of land; division and computation of areas; topographical surveying; methods of the U. S. Government land surveys.</td>
<td>1</td>
<td>23</td>
<td>Asst. Prof. Webb.</td>
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<tr>
<td>4 C. E.</td>
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<tr>
<td>2 Sc. 3.</td>
<td><strong>21. Surveying.</strong>—Field practice in land, topographical and plane table surveying;</td>
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<td>23</td>
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<tr>
<td>4 C. E.</td>
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</tbody>
</table>

In addition to the hours mentioned, one entire week during the Second Term was devoted to a special land survey.

2 Sc. 3.
4 C. E.
3 Sc. 3.
4 C. E.

32. PEN TOPOGRAPHY.—Conventional signs. Elementary exercises.

33. LETTERING.—Freehand and mechanical lettering.

36. MECHANICAL DRAWING.—Drafting instruments and operations, graphic constructions relating to plane problems and elementary projections; dot, line and brush shading, coloring, graining, representation of earthwork and masonry.

1 Sc. 3.
3 C. E.
2 Sc. 3.
3 C. E.
1 Sc. 3.
3 C. E.

18. SURVEYING.—Theory of hydrographical, mining and city surveying.

19. SURVEYING.—Theory relating to railroad surveying. Simple, compound and transition curves; turnouts, etc.

22. SURVEYING.—Field practice in city, topographical and hydrographical surveying.

In addition to the hours mentioned, one entire week during the First Term was devoted to a special hydrographical survey.

23. SURVEYING.—Field practice in staking out simple, compound and transition curves.

25. MAP DRAWING.—Map of hydrographical survey; map of city survey.

29. DESCRIPTIVE GEOMETRY.—Problems of the point, line and plane; single-curved, double-curved and warped surfaces; intersections, tangencies and developments.

20. SHADES AND SHADOWS, AND PERSPECTIVE.—Determination of shade lines and brilliant lines and points of curved surfaces and shadows on planes of projection and other surfaces.

30. COLORED TOPOGRAPHY.—Conventional methods of representation and general exercises.

34. TOPOGRAPHICAL DRAWING.—Map drawing based on survey of previous year.

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<thead>
<tr>
<th>Course</th>
<th>Weekly Hours</th>
<th>Total Hours</th>
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</thead>
<tbody>
<tr>
<td>PROJECTIONS</td>
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<tr>
<td>PEN TOPOGRAPHY</td>
<td>2</td>
<td>23</td>
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<tr>
<td>LETTERING</td>
<td>1</td>
<td>17</td>
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<tr>
<td>MECHANICAL DRAWING</td>
<td>4</td>
<td>25</td>
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<tr>
<td>SURVEYING</td>
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<td>12</td>
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<td>SURVEYING</td>
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<td>20</td>
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<tr>
<td>SURVEYING</td>
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<td>21</td>
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<tr>
<td>SURVEYING</td>
<td>2</td>
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<tr>
<td>MAP DRAWING</td>
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<tr>
<td>DESCRIPTIVE GEOMETRY</td>
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<tr>
<td>SHADES AND SHADOWS, AND PERSPECTIVE</td>
<td>2</td>
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<tr>
<td>COLORED TOPOGRAPHY</td>
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<tr>
<td>TOPOGRAPHICAL DRAWING</td>
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</tbody>
</table>

Asst. Prof. Webb.

Mr. Worthington.
<table>
<thead>
<tr>
<th>Class.</th>
<th>Subject of Course</th>
<th>Hours per Week</th>
<th>Number of Students</th>
<th>Instructors</th>
</tr>
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<tbody>
<tr>
<td>3 C. E.</td>
<td><strong>Mechanical Drawing.</strong>—Graphic construction of problems relating to shades and shadows and perspective,</td>
<td>-</td>
<td>2</td>
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</tr>
<tr>
<td>1 Sc. 3.</td>
<td><strong>Materials of Engineering.</strong>—Properties of building stones and methods of quarrying. Manufacture and use of lime, cement, mortar, concrete and brick. Classification, strength and cost of masonry,</td>
<td>-</td>
<td>1</td>
<td>13</td>
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<tr>
<td>1 Sc. 3.</td>
<td><strong>Bridge Designing.</strong>—Complete design of a plate girder bridge. Computations and detailed drawings,</td>
<td>-</td>
<td>2</td>
<td>14</td>
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<tr>
<td>1 Sc. 3.</td>
<td><strong>Railroad Location.</strong>—Field practice in laying out a short line of railroad, including reconnaissance, preliminary survey, location, determination of grades, cross-sectioning, setting of slope stakes, etc.,</td>
<td>4</td>
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<td>12</td>
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<td>1 Sc. 3.</td>
<td>2 C. E.</td>
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<tr>
<td>26. <strong>RAILROAD OFFICE WORK</strong>, based on the data of survey during the preceding term; drawing of final map and profile; amount, haul and cost of earthwork; estimates of masonry; designs of culverts; detailed drawings, ...</td>
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<tr>
<td>Post Sc. 3.</td>
<td>2 C. E.</td>
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<tr>
<td>31. <strong>STEREOTOMY</strong>.—Stone cutting. Determination of the forms and sizes of stones in the construction of groined, trumpet and cloistered arches, compound and conoidal wing-walls, arched gateways, etc. Construction of temples and use of directing instruments. Theory and preparation of models, ...</td>
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<td>Post Sc. 3.</td>
<td>2 C. E.</td>
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<tr>
<td>38. <strong>MECHANICAL DRAWING</strong>.—Graphic construction of arches, gateways, wing-walls, etc.</td>
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<td>39. <strong>SURVEYING</strong>.—Theory and field practice in the use and adjustment of the transit and level, ...</td>
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| 3. **MATERIALS OF CONSTRUCTION**.—Manufacture and physical characteristics of iron and steel. Strength, elasticity, resilience and conditions by which these properties are affected. Crystallization and granulation. Inspection and specifications. Properties of timber, and methods of preservation, ... |

| 4. **GRAPHICAL STATICS**.—Application of the principles of the force and equilibrium polygons to the graphical determination of shears, bending moments, centres of gravity and moments of inertia. Graphical analysis of the stresses in roof trusses of standard types, ... |

| 5. **STRUCTURES**.—Analytical determination of the stresses in Framed Structures. Modern types of bridge trusses and their relative merits. Treatment of uniform and concentrated load systems, according to the most approved methods. Effect of wind and centrifugal forces. Analysis of details of construction, ... |

| 6. **SUSPENSION, CANTILEVER AND SWING BRIDGES**.—Determination of stresses in bridges of these types by analytical methods, ... |

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<td>Asst. Prof. Webb.</td>
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<td>Mr. Worthington.</td>
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<td>Prof. Marburg.</td>
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<td>Class.</td>
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<tr>
<td>Post Sc. 3</td>
<td>8. Bridge Designing. — Complete design of a railway bridge. Pratt truss. Computations and detailed drawings.</td>
</tr>
<tr>
<td>1 C. E.</td>
<td>13. Engineering Specifications. — Study of selected specifications relating to iron and steel, masonry, bridge construction, etc.</td>
</tr>
<tr>
<td>1 C. E.</td>
<td>15. Inspection Tours. — Visits to engineering works and manufacturing establishments.</td>
</tr>
<tr>
<td>1 C. E.</td>
<td>20. Geodesy. — Figure of the earth. Method of least squares; adjustment and weight of observations; theory of probable error; computations relating to triangulations.</td>
</tr>
<tr>
<td>Post Sc. 3</td>
<td>27. Railway Economics. — General theory of the inception and completion of railway projects; probable volume of traffic and its probable growth; effect of details of alignment on operating expenses and revenue; study of the methods of railway management.</td>
</tr>
<tr>
<td>1 C. E.</td>
<td>4b. Descriptive Geometry. — Principle and application to mechanical drawing. (Faunce's Descriptive Geometry),</td>
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MECHANICAL ENGINEERING.
<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
<th>Professor</th>
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</thead>
<tbody>
<tr>
<td>4 M. E. 4c. DRAWING</td>
<td>Geometric drawing. Descriptive geometric problems, and elementary mechanical drawing. Use of instruments. Thorne's <em>Junior and Intermediate Drawing Courses</em></td>
<td>3</td>
<td>Mr. Picolet</td>
</tr>
<tr>
<td>4 M. E. 12a. SHOP WORK</td>
<td>Manual training in wood and iron work.</td>
<td>3</td>
<td>Mr. Willis</td>
</tr>
<tr>
<td>2 Sc. 4. 4 M. E. 5. THE STEAM ENGINE</td>
<td>Description of engines and boiler covering, detail of cylinders, pistons, valves, connecting rods, bed plates, governors, foundations, the ordinary type of boilers with their settings. (Holmes' <em>The Steam Engine</em>, supplemented by the engines and boilers in the laboratory)</td>
<td>2</td>
<td>Prof. Spangler</td>
</tr>
<tr>
<td>4 M. E. 7a. KINEMATICS</td>
<td>Elementary Combinations. Pulleys and belts, link work, gearing, etc. (Goodere's <em>Elements of Mechanism</em>)</td>
<td>3</td>
<td>Mr. Morris</td>
</tr>
<tr>
<td>2 Sc. 4. 3 M. E. 4. DRAWING</td>
<td>Elementary mechanical drawing. Use of instruments. Copying working drawings, tracing and blue printing. Making working sketches and drawings of pieces of machinery from the model.</td>
<td>3</td>
<td>Mr. Picolet</td>
</tr>
<tr>
<td>3 M. E. 12b. SHOP WORK</td>
<td>Continuation of 12a.</td>
<td>6</td>
<td>Mr. Morris</td>
</tr>
<tr>
<td>2 Sc. 4. 2 M. E. 1. STATICS</td>
<td>Application of the principles of statics to rigid bodies. Elasticity and strength of materials. Forms of uniform strength. Theory of framed structures. Stability of structures. Strains in parts of mechanism. (Merriam's <em>Mechanics of Materials</em>.) Designing of beams, columns and shafts, according to the principles laid down,</td>
<td>2</td>
<td>Mr. Child</td>
</tr>
<tr>
<td>3 M. E. 6. KINEMATICS</td>
<td>General mathematical theory of slide valve, and link motions and its practical application in designing mechanism of valve motion for automatic and marine engines. Zeuner Diagram applied to the principle automatic and radial gears as well as the side valve. (Spangler's <em>Valve Gears</em>),</td>
<td>2</td>
<td>Prof. Spangler</td>
</tr>
<tr>
<td>Class.</td>
<td>Subject of Course</td>
<td>Hours per Week</td>
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<td>Term 1</td>
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<tr>
<td>2 Sc. 4</td>
<td>GRAPHICAL STATICS.—Principles of Graphical statics, and their application to cranes, bridges, roof-trusses and other framed structures. (Merriman and Jacoby's <em>Roofs and Bridges, Part II. Church's Notes and Examples in Mechanics</em>),</td>
<td>4</td>
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<tr>
<td>3 M. E.</td>
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<tr>
<td>1 Sc. 4</td>
<td>4a. SKETCHING AND DRAWING.—Making working sketches, finished drawings, tracings and blue prints for the tools and machines in the laboratories,</td>
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<td>2 M. E.</td>
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<tr>
<td>2 M. E.</td>
<td>12. SHOP WORK.—Manual training in wood and iron work,</td>
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<tr>
<td>1, 2 Sc. 4</td>
<td>2. HYDROSTATICS AND HYDRAULICS.—Transmission of pressure, determining centres of pressure and amount of same under different conditions. Depth of flotation and stability. Theoretical hydraulics. Flow through orifices, over weirs, through tubes; designing dams, flow in pipes, conduits, and canals, water meters, measurement of water power and theory of hydraulic motors. Principles of propulsion of ships. (Merriman's <em>Hydraulics</em>),</td>
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<td>2 M. E.</td>
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<tr>
<td>9. STEAM BOILERS.—Value of fuels, determination of proper proportions for grate and heating surfaces, area and height of chimneys, thickness of shell, size of braces, etc., for various forms of boilers. Making rough sketches and working drawings from original designs. (Wilson's <em>Steam Boilers. Law and Bevis' Machine Drawing and Design</em>),</td>
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<td>1 Sc. 4</td>
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<tr>
<td>2 M. E.</td>
<td>98. STEAM BOILERS.—Value of fuels and determination of proportions. (Wilson's <em>Steam Boilers. Law and Bevis' Machine Drawing and Design</em>),</td>
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<td>Course</td>
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<tr>
<td><strong>15a. THERMODYNAMICS. LABORATORY WORK</strong></td>
<td>3</td>
<td>Prof. Spangler</td>
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<tr>
<td><strong>11. ELECTRICITY.</strong> Measures and discussion of electrical quantities, and their application to the construction and use of galvanometers, batteries and accumulators, etc. (Jenkins' Electricity and Magnetism. Ayrton's Practical Electricity)**</td>
<td>2</td>
<td>Mr. Schramm</td>
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<tr>
<td><strong>2 E. E.</strong></td>
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<tr>
<td><strong>11b. ELECTRICITY.</strong> (Preece and Sivright's Telegraphy)</td>
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<tr>
<td><strong>2 M. E.</strong></td>
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<tr>
<td><strong>21a. ELECTRODYNAMICS. Laboratory work</strong></td>
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<tr>
<td><strong>3. HYDRODYNAMICS.</strong> The design of reaction and impulse turbines, measurement of flowing water, description and discussion of experiments. Hydraulic pressure engines. (Bodmer's Hydraulic Motors)**</td>
<td>2</td>
<td>Prof. Spangler</td>
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<tr>
<td><strong>4. THERMODYNAMICS.</strong> Mechanical theory of heat. Application to steam, air and gas engines, and refrigerating machinery. Wood's Thermodynamics)**</td>
<td>3</td>
<td>Mr. Scribner</td>
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<tr>
<td><strong>5. THERMODYNAMICS.</strong> Testing engines, boilers, gauges and indicators, determining duty of pumps, and injectors, calorimetric work. (All in Laboratory)**</td>
<td>6</td>
<td>Prof. Spangler</td>
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<tr>
<td><strong>6. MARINE ENGINEERING AND NAVAL ARCHITECTURE.</strong> Theoretical Naval Architecture. Sennett's Marine Engines)**</td>
<td>1</td>
<td>Prof. Spangler</td>
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<tr>
<td><strong>7. DESIGNING MACHINERY.</strong> Continuation of work on Steam Engines and Boilers from Senior year. Application of the principles of design to special machinery, etc.**</td>
<td>7</td>
<td>Prof. Spangler</td>
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<tr>
<td><strong>8. ELECTRODYNAMICS.</strong> Measurement of electrical quantities and their application to the theory, construction and use of dynamos, motors, galvanometers, batteries, etc. (Ayrton's Practical Electricity. Thompson's Dynamo Electric Machinery. Slingo and Brooker's Electrical Engineering. Kapp's Electric Power Transmission)**</td>
<td>2</td>
<td>Mr. Schramm</td>
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<td>Class</td>
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<tr>
<td>1 M. E.</td>
<td>8. Steam Engine.—Determination of the proper proportions for cylinders, valves, pistons, rods, shafts, fly-wheels, etc. Making rough sketches and working drawings from original designs. (Marks' The Steam Engine, Unwin's Machine Design, Part II.) Each student is required to design the principal parts of an engine after one of the well-known types, calculating the parts when the question of strength enters, and following the general design of the chosen type when the proportions are matters of experience,</td>
<td>Term 1:</td>
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<tr>
<td>1 M. E.</td>
<td>13. Shop Work.—Making patterns from working drawings, finishing castings, and making, finishing and fitting parts of machinery. Pipe fitting,</td>
<td>Term 1:</td>
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<tr>
<td>Post Sc. 4</td>
<td>21. Electro-Dynamics.—Laboratory work. Wiring, testing dynamos, motors and storage batteries, calorimetry, measurement of currents, insulation, etc.,</td>
<td>Term 1:</td>
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<tr>
<td>Post Sc. 4</td>
<td>24. Electricity.—Graphical Analysis of Alternating Currents. (Blakesley's Alternating Currents),</td>
<td>Term 1:</td>
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<tr>
<td>Post Sc. 4</td>
<td>18. Visits to Manufacturing Establishments.—Students are required to visit various machine-shops, foundries, iron and steel rolling-mills, shipyards, electric-light plants, etc.; to make reports (illustrated) on the general arrangement of plants, arrangement of power, tools, etc., in shops, descriptions of particular machines and processes. Sixteen weeks, one visit per week,</td>
<td>Term 1:</td>
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<td>Post Sc. 4.</td>
<td>19. SPECIFICATIONS.—Methods of drawing specifications and contracts for engines, boilers, foundations, etc. Making estimates as to cost, weight, etc., ..................................</td>
<td>10</td>
<td>Prof. Spangler.</td>
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<tr>
<td>1 M.</td>
<td>23. STEAM ENGINES AND BOILERS.—Short course. For students in Civil Engineering only, ..................................</td>
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**MUSIC.**

| 1 M. | 1. HARMONY.—First year. Formation of major scale. The chords of the major scale; the laws of their succession and inversion. The minor scale. The relation of scales. Dissonant chords; the laws governing their formation and progression; the employment of dissonants that are not members of chords. Modulation. Course 1 includes all that is embraced in the study of harmony or thorough-bass, .................................. | 2 | 14 | Prof. Clarke. |
| 2 M. | 2. COUNTERPOINT.—Second year. The laws for the combination of independent parts. The five species of counterpoint in the ancient or strict style, and the modern or free style, are taught side by side. The higher development of counterpoint, viz.: canon and fugue, double counterpoint, .................................. | 2 | 7 |
| 3 M. | 3. FORM AND ORCHESTRATION.—Third year. The laws of melody. The development of the Suite from Lyric Melodies. The Rondo in its several forms. The Sonata. The adaptation of these forms to one, two or more instruments. Orchestration. The compass, quality and manner of combining instruments. The forms of orchestral music, .................................. | 2 | 13 |
The total number of courses offered was three hundred and thirty. This number would be larger if some of the courses which were given to several classes in somewhat different form, as for example the elementary course in Chemistry, were divided into separate courses.

One hundred and twenty-one of the courses were limited to one term, and one hundred and ninety-four extended throughout the year. The remaining fifteen consisted of a series of lectures only, occupied a fraction of a term, or had no definite number of hours assigned.

Of the one term courses, twenty-five demanded one hour of instruction per week; forty-eight, two hours; nineteen, three hours; thirteen, four hours; twelve, six hours; and four, more than six hours: of the two term courses, forty-four required one hour; eighty-two, two hours; thirty-one, three hours; two, four hours; four, five hours; and twenty-two, six hours or more. In 1888-89 the number of courses offered was one hundred and eighty-four. All of the courses offered this year were not given; forty-three were omitted because they were not elected or because the course of instruction of which they formed a part were not fully in operation.

As the annual catalogue shows very clearly the requirements for each year of the different courses, it will not be necessary to give tables and show the number of hours for each class. The following which give the elective combinations made by regular Juniors and Seniors in the Arts course will be of interest. Some members of the class were pursuing the course in Biology, or had special rosters and are not included.
## Juniors in Arts

### Number of Combinations

| Course                        | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | Total |
|-------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|-----|
| **Required**                  |   |   |   |   |   |   |   |   |   |     |     |     |     |     |     |     |     |     |
| English                       | 5 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 23   |
| English Literature            | 5 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 23   |
| Logic and Ethics              | 5 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 23   |
| Greek                         | 5 | 3 |   |   |   |   |   |   |   | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 10   |
| Latin                         | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 13   |
| German                        | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 10   |
| French                        | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 13   |
| Hebrew                        | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 10   |
| Astronomy                     | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 13   |
| Determinants                  | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 10   |
| Physics                       | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 13   |
| History of Philosophy         | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 10   |
| General Psychology            | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 13   |
| Experimental Psychology       | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 10   |
| History of Ethics             | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 13   |
| English Literature            | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 10   |
| English Philology             | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 13   |
| English History               | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 10   |
| Mediæval History              | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 13   |
| History of United States      | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 10   |
| General Chemistry             | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 13   |
| Qualitative Analysis          | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 10   |
| Botany                        | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 13   |
| Zoology                       | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 10   |

| **Number of courses**         | 6 | 7 | 6 | 6 | 7 | 7 | 9 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 4 | 7 | 75 |
| **Number of hours**           | 15| 17| 11| 11| 15| 13| — | 17| 11| 11| 11| 17| 15| 15| 14| 14| 7 | 11  |
### SENIORS IN ARTS.

| Number of Combinations | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | TOTAL |
| History of Philosophy, | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 22 |
| General Psychology,    | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 22 |
| English Literature,     | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 22 |
| Constitution of United States, | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 22 |
| Greek,                 | 2 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 4 |
| Latin,                | 3 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 3 |
| Sanskrit,              | 2 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 3 |
| Hebrew,               | 2 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 3 |
| German,               | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 17 |
| French,               | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Italian,              | 2 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 2 |
| Spanish,              | 2 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 2 |
| Linguistics,           | 1 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 1 |
| English Philology,     | 2 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 2 |
| English Literature,    | 2 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 2 |
| Experimental Psychology, | 2 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 8 |
| English History,       | 2 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 1 |
| Mediaval History,      | 2 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 1 |
| General Chemistry,     | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 3 |

| Number of courses,     | 8 | 7 | 6 | 8 | 7 | 6 | 10 | 7 | 7 | 8 | 7 | 7 | 8 | 8 | 7 | 8 | 7 | 7 | 8 | 7 | 7 | 6 | 77 |
| Number of hours,       | 16| 13| 11| 16| 13| 11| 13| 11| 13| 13| 13| 13| 13| 15| 15| 13| 15| 13| 16| 13| 14| 12 | 176 |
The past two years have been years of intense activity and have witnessed the most important changes that have been made in the history of the College, the reorganization of the College Faculty and the radical change in the course in Arts. While the Faculty was small and each subject was in the hands of one professor or of one professor and an instructor, all questions of business, the educational policy, the selection of instructors, the arrangement of courses and the supervision of the students could be quite readily considered by the Faculty at large; but with the growth of that body in the appointment of several professors of equal rank in each great subject and the subdivision of subjects of instruction and multiplication of courses, the need of some more definite organization became apparent. After much consideration it was decided to divide the Faculty into committees composed of the instructors in the different larger divisions of instruction, which should be given larger powers than had hitherto been held by the individual professors. The committees have supervision of the following groups of subjects: Ancient Languages, Modern Languages, Philosophy, History, Economics, Mathematics, Physics, Chemistry, with Mineralogy and Geology, Natural History, Architecture and Drawing, Mechanical and Electrical Engineering, Civil Engineering and Mining Engineering.

They include not only the professors but also the instructors who, although not entitled to a vote in the Faculty, are in this way brought more closely into contact with the chief professors, and are trained in the policy it is desired to adopt. The first appointment of the chairman of these committees was made by the Dean, and it is possible that this method will always be the best to secure as chairman the most suitable member. He may not be the most prominent instructor or hold the highest rank but should possess the energy, enthusiasm and other necessary qualities for the position which bids fair to become more important as the details become more complex: To one who has been intrusted to a very large extent with the general business of the Faculty, the effecting of this organization seems a great help in advance—for the results were immediate and most gratifying—meetings of the different committees have been held regularly, a more intimate acquaintance with the needs of the students has been acquired, plans of work carefully arranged, and a new spirit of enthusiasm aroused. Two or more departments have had joint
meetings for the discussion of matters of common interest, and several questions involving radical differences of opinion have thus been adjusted. Indeed, it would appear that by no other method could the new curriculum of the Arts course be satisfactorily carried out, and, although attention has been called to this reorganization first, it is really the outgrowth of the change in that course. This change has been in contemplation for several years. It was very evident that something must be done to put this course on a more satisfactory footing. While the technical courses were developing rapidly and the special schools were receiving increased support from larger entering classes and financial encouragement from the friends of the University, particularly interested in these subjects, the central course was not growing and there was no opportunity of using effectively the teaching force which we already possess or to hope to stimulate a demand for more. It was not that these subjects, the Languages, History, Philosophy, Economics and the pure Science, were less in demand, but that there was a scattering of energy on the part of the instructors and the students.

The question was brought before the Faculty last year and two committees were appointed, one to consider the reorganization of the course in Arts and the other to consider the larger question of the state of all the courses in the College.

These committees met separately and jointly during the whole of the College year, 1892–93, and finally reported a plan which, after much careful consideration by the Faculty, was unanimously adopted on June 3, 1893, and received the approval of the Board of Trustees. This plan embodies the adoption of the course system in place of the almost free elective system, not that the latter has ever been the system with us. In the past the curriculum in the two lower years of the course in Arts was fixed, there was but one course. In the Junior and Senior years a large proportion of the studies were required, and the rest were elective, with the condition that the election should be made in a certain definite way, always two-language studies and one, at least, from a historical and scientific group. This condition limited the choice of electives, for the number of hours which could be chosen per week was fixed, and as a result the students adopted no rational method in the selection of their electives, and it was impossible to push the work in any one subject to a satisfactory result, as is shown in part in the table exhibiting the
electives chosen this year by the Seniors in Arts. The Juniors in Arts elected under the new plan. This new plan introduces five distinct courses in the Freshman and Sophomore years, which may be shown as follows, the number after the subject indicating the number of hours of instruction per week.

**FRESHMAN YEAR.**

<table>
<thead>
<tr>
<th>I.</th>
<th>II.</th>
<th>III.</th>
<th>IV.</th>
<th>V.</th>
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</table>

**SOPHOMORE YEAR.**

<table>
<thead>
<tr>
<th>I.</th>
<th>II.</th>
<th>III.</th>
<th>IV.</th>
<th>V.</th>
</tr>
</thead>
<tbody>
<tr>
<td>History or</td>
<td>History or</td>
<td>History or</td>
<td>Mathematics 3.</td>
<td>History 3.</td>
</tr>
</tbody>
</table>

In the Freshman year, the English is composition work and the study of the English language; the History, European history for one term, and American history for one term; the Mathematics, algebra, solid geometry and plane trigonometry. One lecture a week on hygiene and two hours in the gymnasium are also required. In course V. the science this year was a course on Mammalian Anatomy.

In the Sophomore year the English is English literature and composition work; the History, European history; the Mathematics, analytic geometry. The Physics and Chemistry are laboratory courses. Upon the completion of the Sophomore year in any one of these courses, the student is prepared to devote attention to a more limited group of studies. In his choice he is restricted to a certain extent by the course which he has pursued, but only in respect of the languages.

In the Junior year five hours are prescribed for all students, three in English language and literature, and two on logic and ethics. Two hours are for free electives chosen under the advice of the instructors in the group studies.
The remaining eight hours are devoted to the two studies of his group, the details being arranged by the committee of the Faculty having supervision of those subjects.

The groups are the same in Senior year, but ten hours per week are given to those subjects, and the students may elect courses to fill the remaining five hours required. The groups are: 1, Greek and Latin; 2, Latin and German; 3, Latin and French; 4, German and French; 5, English and German; 6, English and French; 7, History and English; 8, Philosophy; 9, Economics and History; 10, Physics and Mathematics; 11, Mathematics and Astronomy; 12, Chemistry and Physics; 13, Biology and Chemistry.

It will be observed that the essential subjects are contained in the two lower years, and it is believed that in the upper years better results will be obtained by the more careful study of a few well chosen subjects, which can thus be carried further than has ever been attempted in our undergraduate course. For example: The student who selects the Latin and Greek group, devotes to these subjects, in the Junior and Senior years together, eighteen hours a week. In the old course, eleven hours only could be given to these subjects. The new plan permits of the introduction of additional courses in classical Philology, Archaeology and History, and makes it impossible that either Latin or Greek shall be taught by one professor only. In the French and German group, eighteen hours a week are devoted to these languages in the upper two years, after twelve hours of instruction in these subjects in the lower two years—a total of thirty hours. In the old course, French and German were given only in the upper years for thirteen hours; this is a gain of seventeen hours. The student who has chosen German and French from his Freshman year will be twice as far advanced in this subject as it was possible for him to be under the former plan. The same is true to a greater or less extent of the other groups. The two years' courses in the Wharton School and the School of Biology are still open to students at the beginning of the Junior year.

The requirements for admission to these courses are the same as have existed, English, History, Mathematics including arithmetic, algebra and plane geometry, and the two languages of the course the student proposes to enter. For the fifth course which contains only Latin, two languages are required, one of which must be Latin; the requirements in French and German will be
advanced to make them more nearly equal those in Latin and Greek. The degree of Bachelor of Arts is given those who successfully complete the course, taking Greek and Latin through the four years. The degree of Bachelor of Science is conferred on those who pursue the other courses.

The broadening of the course in Arts affected the general course in Science. It was seen at once that all students who desired a liberal as distinguished from the technical course would no longer enter the Science course. The latter has, therefore, been modified somewhat and is intended for the students who will give five years to technical study, two in preparation and three to the technical studies proper. The name of the course has been changed to that of Science and Technology. The Freshman year contains English (3), Mathematics (4), Drawing (2), History (2), German or French (5). The Sophomore year contains English (3), History (3), Mechanical Drawing (3), Mathematics (4), Descriptive Geometry and Shades, Shadows and Perspective (2), Physics (2), Chemistry (3), German or French (3). There is a provision that students who do not intend to take the technical courses in Metallurgy and Mining, Civil Engineering or Mechanical Engineering in Junior year may substitute for the courses in Descriptive Geometry and Drawing, History, pure Mathematics or Biology. But it is hardly expected that students of that class will enter this course. The requirements for admission and for the degree remain the same.

The great diminution in the number of students entering this course has been a source of considerable anxiety to all, because the results of the five year technical course have been so uniformly satisfactory that it would be deeply regretted if they are permanently affected by the change in the Arts course, and the introduction of the four year technical courses.

To carry out the idea, moreover, in these reorganizations and as a natural growth of the different departments, important changes have been made in the work in the various subjects.

The election of a Professor of Classical Philology has enabled the committee to broaden and strengthen the Latin and Greek courses.

The instruction in the English branches has been reorganized. The work in English literature, English composition and declamation, is under the charge of Professor Schelling and his assistants, and the early English literature and English philology
under Professor Eaton. The University is to be congratulated in possessing the services of two such competent, cultured and enthusiastic heads to this most important department. It is particularly gratifying that while the more advanced work is being pushed with vigor, more time and attention is being given to English composition and declamation, the interest in which has largely increased. More students are contestants for the prizes in this department, and the well-earned victory of the Pennsylvania representation in the dual oratorical contest with Cornell, is a source for congratulation.

Professor Rennert returned from abroad last autumn and took charge of the courses in Romance, languages and literature, and Mr. Lorenz was appointed to assist him. This is the first time that these courses have been put upon a satisfactory, permanent and independent basis; but if the field is to be widely covered additional teaching force is indispensable. The work in German was sadly interrupted by the death of Professor Seidensticker. It will be difficult to fill the place of this learned and courteous Christian gentleman whose influence was always for good, and whose death is a personal loss to every member of the University.

The condition of the Department of History is most satisfactory, and it may be regarded as the most thoroughly equipped of our branches. There are four professors and an assistant, and the field of American and European history is well covered. It must be remembered, however, that that field is large and there are others of deep interest which only await proper development.

The detailed statement in the catalogue and the increased roll of instructors and students show the continued growth and success of the Wharton School. If one line more than another has been developed it is that indicated by the courses of lectures by eminent specialists upon the practical topics of the day; but the work has been pushed with vigor in all directions. Since my last report the value of a four year course, embracing in the two lower years some of the subjects taught in this school, has become more apparent and after much careful consideration and with due regard to all opinions, such a course has been definitely announced for next year. The requirements for admission are similar to those exacted for the courses in Arts and Science, except that German must be one of the languages presented. The details of the course
itself need not be given here; they have received careful study and it is confidently expected that the course will be useful and popular.

Closely associated with the work of the Wharton School, if not to be regarded as part of it, are the courses in Journalism. These were given this year for the first time, by Professor Johnson, whose wide experience renders him eminently fit to handle this important subject. The object of these courses should be clearly understood. They are not introduced into college work for the purpose of training journalists—more than instruction is required for that purpose—but they are intended to assist by teaching some of the technical and business subjects connected with newspaper work in the general broad education of the young men who design to follow this profession. The mental equipment of such students must be gained by liberal studies in the lines of literature, science, economics and philosophy. With the rapid growth of the technical schools the classes in mathematics have increased in size, an additional instructor was required last year, and one if not more must be provided for the coming year. The voluntary class offered as aids to the regular work in lower years have met with success, and it is encouraging to notice a growing interest in the subject of pure mathematics. It has not been possible to develop the work in Astronomy which certainly deserves more serious attention.

The excellent results obtained by the Department of Chemistry in adopting the laboratory method of instruction to beginners, by which each student was put at once to work out practically what he had learned in lecture and recitation, lead to the extension of the method in part at least to the Department of Physics. The cases, however, were somewhat different. In Chemistry the laboratories existed and the methods had been more thoroughly elevated; in Physics the method was to some extent still on trial, and there were no laboratory facilities for elementary work. Both these difficulties were overcome by the energy and experience of the head of the department. The rooms on the north side of the west wing of the basement, left vacant by the Department of Mechanical Engineering, were assigned to the Physical Department and transformed into a large laboratory, abundantly lighted and equipped for elementary work. A workroom fitted with gas engine, lathe and tools for manufacturing and repairing instruments and apparatus, and a museum for the older instruments not
in use in the lecture room or laboratory. The storerooms on the opposite side of the hall have been furnished as laboratories for advanced work, and the main laboratory refitted with new work tables. The entire department has been cleaned and repainted, and a considerable of new apparatus has been acquired. These changes called for additional teaching force. The students who begin Physics by laboratory work are the Freshmen in Chemistry and the Sophomores in Arts and Science, and special students of the first year in Biology. The students in the Freshmen and the technical departments follow the old plan of instruction by lecture and recitation.

The work in Biology has been most satisfactory. All of the more elementary courses were given, and several courses of advanced instruction were selected for the first time.

The classes have been larger than ever, eighty-eight students—including graduate students—receiving instruction during this year. The general interest and enthusiasm constantly increases. It was thought best, last year, that the instruction of the veterinary students in botany and zoology should be given in the veterinary building—since the classes in these subjects had become so large that a division into sections was in any event imperatively demanded. The withdrawal of these students from the biological laboratory rendered certain rearrangements of the rooms possible. The large laboratory on the third floor was divided into three rooms, a dissecting room for the class in anatomy, a laboratory for histology, embryology and advanced zoology, and a storage room for diagrams and specimens. The laboratory of Experimental Psychology was transferred to the room on the south side of the second floor, made vacant by the withdrawal of Professor Allen to the Wistar Institute, and the laboratory thus rendered available was devoted to advanced work in Histology and Embryology. The museum was transferred to the west laboratory on the first floor, and the large lecture room and east laboratory have been thrown into one large room for the classes in elementary botany and zoology.

Additional microscopes, books, diagrams and specimens have been added to the equipment. Particular attention should be called to the exquisite collection of plants preserved in alcohol which has been made by Professor Macfarlane to illustrate plant morphology and physiology.
The regulations, governing the admission of graduate students in biology to the second year of the four year course in medicine, have been formulated as follows:

College graduates in Arts or in Science who, during their College course, have devoted to the study of the branches named below the number of hours stated, are admitted to the second year of the Medical course without an entrance examination. These studies may have been pursued during any period of the College course leading to a degree. Students entering under these conditions must, during their first session in the Medical Department, take instruction in Materia Medica and Pharmacy and pass examinations in these branches by the end of the session.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>General Biology</td>
<td>96</td>
</tr>
<tr>
<td>Mammalian Anatomy</td>
<td>144</td>
</tr>
<tr>
<td>Botany</td>
<td>180</td>
</tr>
<tr>
<td>Chemistry</td>
<td>216</td>
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<tr>
<td>Physics</td>
<td>72</td>
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<tr>
<td>Histology</td>
<td>72</td>
</tr>
<tr>
<td>Human Anatomy</td>
<td>144</td>
</tr>
<tr>
<td>Physiology</td>
<td>48</td>
</tr>
<tr>
<td>Zoology</td>
<td>96</td>
</tr>
<tr>
<td>Embryology</td>
<td>72</td>
</tr>
</tbody>
</table>

Six students in the University fulfilled this year these requirements and have received the bachelor's degree. Of these three were admitted to the Senior class, having pursued biological courses in other colleges. The adoption of this arrangement by the two faculties was an important step and the results will be watched with great interest by all who have higher medical education at heart. This arrangement and the increasing demand for more advanced instruction calls for a longer course of study than that furnished in the two year course preparatory to medicine which was instituted when the school was founded. An attempt has been made to introduce this in the form of a four year course in Natural History, but this was but partially successful, as it was too widely elective, and the annual difficulties with the rosters became at last almost unsurmountable. A definite four year course in Biology, embracing literary and other scientific studies, would be popular and enable the faculty to present the different divisions of the subjects under their charge in a more thorough and orderly manner.

The Naturalists' Field Club has had regular and interesting meetings, and the results of the investigations in the laboratories have been published in the contributions from the zoological and botanic laboratories. Record should be made of the establishment by the Kappa Kappa Gamma Fraternity, a society composed of women students, of a prize, open to all students in the biological
school, which grants the successful competitor the use during the
summer of the society's zoological table at the Wood's Holl labo-
rary. The prize was awarded this year to one of the women
students upon recommendation of the biological faculty.

In my last report I noted the completion of the laboratories
for mechanical and electrical engineering and called attention to
the pressing need for a new laboratory of chemistry. This need
has now been met, and a new building devoted exclusively to
instruction in this science will be ready for use in the Autumn.

It has been erected on the ground recently purchased by the
University at the northeast corner of Thirty-fourth and Spruce
streets opposite the steam heating plant and near the laboratory of
hygiene. It is E-shaped and fronts upon Thirty-fourth street the
wings extending toward Thirty-third street. The frontage is 168
feet and the wings 105 feet in depth and 37 feet in width. The
main portion which is 94 feet wide is three stories and the wings
two stories high. The central smaller wing is one story in height
and is occupied by a large lecture room, which will accommodate
over two hundred persons. On the first floor of the building, on
the southern side of the entrance, are the Director's office and
private laboratory, the balance and storerooms and a large labora-
tory, occupying the entire southern wing and containing one
hundred and twelve desks to accommodate double that number
of students. This laboratory is for beginners only and must be large
because of the adoption of the laboratory method for beginners.

The northern side of the first floor contains the coat closets,
the room for preparation for lectures, a laboratory for iron and steel
analysis, the laboratory for assaying, a room for heating under
pressure, a balance room, a room for gas analysis and a technical
laboratory where preparations may be made on a more extended
scale than in the other laboratories.

On the second floor, on the south side, are two special labor-
atories for advanced students, a balance room, a museum, and a
small lecture room and a large qualitative laboratory accommo-
dating seventy students. There are also several stock rooms for
this floor; on the north side is a room for advanced students, an
instructors' laboratory, the electrolytic laboratory, a dark room
for photography, a room for spectroscopic work, a recitation room,
a library and a large quantitative laboratory, which will accom-
modate forty students. Adjoining all these larger laboratories are
assistants' and balance rooms and rooms for hydrogen sulphide.
The third floor contains a large organic laboratory for thirty students, three private rooms for instructors and special workers, a balance room, a combustion room and some storage rooms. The building is heated by steam, lighted by electricity and thoroughly equipped with all the apparatus, which experience has shown to be desirable. Its exterior is of red brick with terra cotta trimmings, and the interior is finished in Virginia sap pine and painted plaster. It can be seen that this laboratory meets very thoroughly the present needs of the department, and it will probably require no enlargement for some time.

During the past two years the high standard of the Chemical Department has been maintained, and no effort has been spared to render the instruction better and to open up new fields and to kindle enthusiasm among the students. The number of students taking chemistry has increased largely—both by a growth in the department itself and because of the growth of other departments whose students are required to take chemistry.

A new course has been added to the list of the four-year technical courses—that in Chemical Engineering—leading to the degree of Bachelor of Science in that subject. It was found that a chemist who was called upon to take charge of works, demanding the extension of the applications of chemistry needed considerable equipment as a mechanical engineer, in order to master the difficulties of construction which constantly present themselves, hence a course has been established embracing a union of the two subjects, although the course may still be regarded in the main as a course in Chemistry. Four Freshmen entered this course, and one student was admitted as a Junior to advanced standing. For several years a few students have elected some of the work in Mining Engineering, but there has been no serious effort made to develop that course. Now, however, with the other technical courses reorganized and successful, the time seems proper for enlarging and stimulating instruction in this direction.

The work in Mechanical and Electrical Engineering has increased enormously. About one-fifth of all the students in college are in these courses—the number of students in the department having nearly doubled within the last two years. It has been necessary to increase the teaching force and to purchase additional apparatus. Already the new building is crowded, and it is probable that next year some of the class must be accommodated in the main college building. Fortunately ample space for the
extension of the laboratory building is left to the west and north. The introduction of the four-year courses in these subjects is certainly popular, and the results thus far obtained are satisfactory. The same energy which has made the department such a conspicuous success in the past bids fair to found in Philadelphia one of the great technical schools of the world.

The hopes expressed in my last report for the successful reorganization of the course in Civil Engineering have been fully realized. Under Professor Marburg's energetic direction and excellent judgment the course has been made strong and attractive and the number of students increased beyond the highest expectation. The two weeks' trip into the field required of certain of the classes has been a valuable innovation.

The adjustment of the rosters and plans of the four-year and five-year courses has been difficult, and this difficulty which must always exist to a certain extent together with the rapid growth of the department calls for increased accommodation. The timely vacation of the rooms on the first floor and basement used by the Chemical Department will give the Civil Engineering school new quarters, increased drafting rooms and enable the establishment of much needed testing laboratories. The rooms in the basement will be much more convenient for the surveying parties.

The success of the School of Architecture has been much greater than the growth in the number of students would seem to indicate. For examination of the rolls will show that the number of partial and special students has been reduced, and those who now appear as such are not students pursuing certain lines of Art work in a more or less desultory fashion, as was necessarily the case when the course was first opened, but are earnest students who have usually had some years' training in an architect's office and are pursuing the definite two-year course, leading to a certificate of proficiency. In addition to the regular four-year course leading to the bachelor's degree and the two-year special course just mentioned, the school offers a two-year course in Interior Architecture or Interior Decoration, which fits the student to enter at once upon this work which has grown to be an important profession. Four students took the work of the first year, and two were in the second year of this course.

The officers of the school have been increased by an Assistant Professor of Design, an instructor in Architecture and an instructor in Modeling, and now comprise three professors, six
instructors and five lecturers on special subjects. These lectures, principally by the younger Philadelphia architects in active practice, continue to be an important feature of the school. In the absence of Professor Dana, Mr. Everett had charge of the classes in Water-Color Drawing.

Mention should be made of the establishment at the University of Pennsylvania of a chapter of the Phi Beta Kappa Society. This was accomplished principally by the zeal of Professor Fisher, who as a member of the Cornell Chapter with the Rev. Dr. Furness, from Harvard, and the Rev. S. W. Dana, from Dickinson, were constituted charter members. Subsequently a number of members of the Faculty were elected members, and these in turn selected two or more graduates from each class to complete the membership.

The selection was made upon the basis of high scholarship while in college or the attainment of distinction in after life. The first meeting of the society was held on April 5, 1893, and the following officers were elected: Rev. W. H. Furness, D. D., President; Horace Jayne, M. D., Vice-President, and George E. Fisher, Secretary-Treasurer. Five Seniors were elected under graduate members. A committee was appointed to arrange for the literary meeting in June, 1894. Last year four Seniors and one Junior were elected members, and at the annual meeting the same officers were elected. The first public literary exercises were held in the library on the afternoon of June 7. They consisted of an introductory address by the President and the oration of the day by Mr. Hampton L. Carson, of the Class of 1871. After these exercises the society entertained its guests.

The chapel exercises have been conducted during the year by the chaplains in the manner described in my last report, and have proved perfectly satisfactory. The students were interested and the order was exemplary. There was a decided improvement in the work of the choir, and the organist and leader, Mr. Morgan, deserves great credit for his able management. By the efforts of the chaplain and organist and with the co-operation of Professor Clarke, a large and effective pipe organ was purchased and placed in the chapel under the middle stained-glass window.

An experiment was tried last year in changing the hour of morning service from ten to ten minutes before nine o'clock, but the change was not popular, and then after a few weeks upon request of the students the old hour was restored.
While these religious exercises are in themselves satisfactory, it must be remembered that their scope is necessarily restricted, and I would again urge the necessity of a separate building that the daily exercises may become a part of the life of the entire University.

It was unfortunately found necessary this year to abandon the old custom of having the student's diplomas signed by all the instructors. The great number of professors and assistants, and the multiplication of courses had rendered it almost impossible to have the diplomas signed properly and with dispatch, so the practice in vogue in other large institutions of requiring only the signatures of the executive officers, was adopted. The introduction of the course-book system, however, makes this loss scarcely felt, because in this book the student preserves not only the signature of each instructor secured at the end of the term, but has also a definite statement of the amount of work accomplished.

The general order and conduct of the students has been excellent. There have been no outbreaks of disorder, and class rivalry has been maintained within healthy limits. There have been a few cases of infraction of the general rules, dishonesty at examination, and one case of insubordination for all of which due and severe punishment has been inflicted. It was necessary in the latter half of the year to act more strictly in respect of students' absences; by summoning students very regularly for a few weeks the difficulty disappeared. The buildings and grounds under my care have been kept in good order and repair, and such improvements as seemed desirable and expedient have been made with the limited means at my command. It was not always possible to carry out all our plans or to comply with the wishes of the heads of the different departments.

Horace Jayne,
Dean.

APPENDIX No. XIII.

REPORT OF THE DEAN OF THE DEPARTMENT OF PHILOSOPHY.

Dear Sir:—I have the honor to submit the following report of the Department of Philosophy for the year 1893-94:

Of the seventy-eight regular students, candidates for a higher degree on the rolls in 1892-93, thirteen were graduated in June,
1893, with the degree of Doctor of Philosophy, and four—one man and three women—with the degree of Master of Arts. Nineteen students left at the end of the year, fifty-three new students entered in the autumn of the present year. Of the thirty-nine special students, seventeen left at the end of the year, twenty entered again as special students and two became regular students, thirty-eight new special students entered at the beginning of the year 1893. There were, therefore, in attendance during the year just closed, ninety-six regular students and fifty-eight special students.

The present matriculates have graduated or pursued graduate courses at the following institutions:

Amherst College. Lafayette College.
Antioch College. Lehigh University.
Bates College. Mecklenberg College.
Boston University. Princeton University.
Brethren's College (Huntington, Pa.). Roanoke College.
Brown University. St. Stephens College.
Calvin College (Cleveland, Ohio). Swarthmore College.
Cornell University. Syracuse University.
Fisk University. Thiel College.
Hampton College. University of Michigan.
Harvard University. University of Missouri.
Haverford College. University of Toronto.
Illinois Wesleyan University. Upper Iowa University.
Iowa University. Ursinus College.
Johns Hopkins University. Vassar College.
Kenyon College. Villa Nova College.
Knox College. Wellesley College.
Willenberg College.

At the Commencement in June the degree of Doctor of Philosophy was conferred upon ten candidates and the degree of Master of Arts upon five. During the year one hundred and twenty-four distinct courses of instruction were offered by the officers of the department. Such as were selected were put upon the roster and given regularly throughout the year. Of the daily routine of instruction there is little to record, save a growing interest on the part of the members of the Faculty, and the realization that the graduate work is part of their duties and the line of greatest development. The Faculty has had its regular meetings and has discussed very fully the general policy of the department. Although all its action has been conservative, a few changes have
been made in the requirements for the Doctor's degree. The number of separate subjects from which the three necessary subjects may be chosen has been increased from twenty-one to twenty-five by the separation of English Language and English Literature, the introduction of Ethics, Statistics, and the separation of Mineralogy and Geology.

The subjects in the list, therefore, are now:

4. Chemistry.
5. Comparative Philology and Sanskrit.
6. English Language.
7. English Literature.
8. Ethics.
10. Experimental Psychology.
11. Geology.
13. Greek Language and Literature.
15. Legal Institutions—History and Development.
17. Mineralogy.
18. Political Economy.
19. Political Science.
20. Philosophy.
22. Romance Philology and Literature.
23. Semitic Languages and Literature.

The following rules have been adopted to govern the selection of language courses:

**General Philological Courses.**

The following are obligatory upon all students choosing a *language* as major or minor, and are open to all other students, whether candidates for a degree or not:

1. General Principles of Phonetics.—Ten Lectures (*First Term*). Professor EASTON.
2. History and Development of Writing.—Ten Lectures (*Second Term*) as follows:
   a. One Lecture on the Picture-Writing of Pre-Historic Times. Professor BRINTON.
b. One Lecture on the Writing of the Mexicans and Mayas, and the Ikonomatic System. Professor Brinton.


d. Two Lectures on the Cuneiform Systems of Writing. Professor Hilprecht.

e. Two Lectures on the Phoenician Alphabet and its Derivatives, (including an Exposition of the Egyptian System). Professor Jastrow.

f. One Lecture on the Iranian and Indian Alphabets. Professor Easton.

g. Two Lectures on the Greek and Latin Alphabets, and their Derivatives. Professor Lambert.

These lectures will be illustrated by casts and charts in the University Library and Museum. Dates to be announced.

3. Elements of Primitive Culture. Six Lectures (First Term, 1894-95). Professor Brinton.

Students who take English Literature as a major subject, are required to take a course in English Philology and a course in English History.

Students who take Comparative Philology as a major subject, are required to take a course in Greek, of the same extent as a minor course in that subject, and a course in Semitic Philology.

Students who take English Philology as a major subject, are required to take a course in English Literature, of the same extent as a minor course in that subject, and a course in old French.

Any one of the following languages in the Semitic group may be selected as a major or minor subject: Arabic, Assyrian, Ethiopic, Hebrew or Syriac. A student is permitted to select two Semitic languages as two of the three subjects required for the Ph.D. degree. The other requirements for the degree of Doctor of Philosophy remain the same. More definite requirements for the degree of Master of Arts have been formulated by a committee of the Faculty and will be presented to that body at a later meeting. A few students have been admitted as candidates for the Doctor’s degree who do not hold the lower Bachelor’s degree. These were principally supervising principals of the public schools of Philadelphia, and it is a source of gratification to see a closer union being established between the public school system and the great University of the State.

Very respectfully,

Horace Jayne,
Dean.
APPENDIX No. XIV.

To the Provost of the University.

Sir:—I have the honor of submitting the following report on the Department of Medicine for the scholastic years 1892–93 and 1893–94:

During the entire period of existence of the Department of Medicine (127 years) there has not been an annual session in which the attendance of students has been so great as during the session of 1892–93. The students in attendance during the session named numbered 847, distributed in classes as follows:

- Students of the Voluntary Fourth Year Class: 13
- Students of the Third Year Class: 252
- Students of the Second Year Class: 260
- Students of the First Year Class: 311
- Special Students: 11

Total: 847

Probably at no period in the history of any medical school in the United States has this number of students in attendance during a scholastic year been exceeded.

Of the first year class, numbering 311, in attendance during the session of 1892–93, there were seventy-eight members of the class, or 25.2 per cent, who possessed degrees in Arts or in Science. This class was the last class to enter the Medical School on the three-year course of study. The first year class which entered in October, 1893 (session 1893–94), at the beginning of the compulsory four-year course of study numbered 188 members, and of these 40, or 21.2 per cent, possessed degrees in Arts or in Science. Comparing these figures with the number of members of the first year class which entered when the compulsory three-year course was begun in 1877 (session 1877–78) we have the following:

<table>
<thead>
<tr>
<th>Session</th>
<th>First Year Class</th>
<th>Degrees</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1877–78</td>
<td>136</td>
<td>19</td>
<td>13.9</td>
</tr>
<tr>
<td>1892–93</td>
<td>311</td>
<td>78</td>
<td>25.2</td>
</tr>
<tr>
<td>1893–94</td>
<td>188</td>
<td>40</td>
<td>21.2</td>
</tr>
</tbody>
</table>

It will be observed that of those who entered the first year class of the school in 1877, when the compulsory three-year course
was inaugurated, 13.9 per cent possessed collegiate degrees while of those who entered the first year class in 1893, when the compulsory four-year course was inaugurated, 21.2 per cent possessed collegiate degrees.

In the four-year course provision is made for graduates in Arts or Science who have pursued certain biological studies to enter the second year class of the Medical School under the following conditions:

College graduates in Arts or in Science who, during their College course, have devoted to the study of the branches named below the number of hours stated, are admitted to the second year of the Medical course without an entrance examination. These studies may have been pursued during any period of the College course leading to a degree. Students entering under these conditions must, during their first session in the Medical Department, take instruction in Materia Medica and Pharmacy and pass examinations in these branches by the end of the session.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Biology</td>
<td>96</td>
</tr>
<tr>
<td>Mammalian Anatomy</td>
<td>144</td>
</tr>
<tr>
<td>Botany</td>
<td>180</td>
</tr>
<tr>
<td>Chemistry</td>
<td>216</td>
</tr>
<tr>
<td>Physics</td>
<td>72</td>
</tr>
<tr>
<td>Histology</td>
<td>72</td>
</tr>
<tr>
<td>Human Anatomy</td>
<td>144</td>
</tr>
<tr>
<td>Physiology</td>
<td>48</td>
</tr>
<tr>
<td>Zoology</td>
<td>96</td>
</tr>
<tr>
<td>Embryology</td>
<td>72</td>
</tr>
</tbody>
</table>

Arrangements were made that students who had complied with the above named requirements might avail themselves of this advantage at the beginning of the session 1893–94, although a regular second year class on the four-year plan did not exist at the time. At the opening of the session in October, 1893, fifteen candidates availed themselves of this provision. Granting that these students would have entered the first year class, had no provision for entrance to advanced standing existed, the first year class under these circumstances would have numbered 203, and of these 55, or 27.0 per cent, would have possessed collegiate degrees.

It is encouraging to state that many of the classical and scientific colleges throughout the country have already arranged courses to meet the requirements for entrance to our second year class, while others are preparing to give courses in the branches named.

At the beginning of the four-year course in October, 1893, opportunity was given to students, who had matriculated the
previous year, and had attended during the first year of the three-year course, to elect to take the four-year course, beginning with the second year. It is gratifying to state that a number of students availed themselves of this privilege.

Provision was made to excuse students who had pursued chemical studies before entering the Medical School from the Chemistry of the first year of the course under the following conditions:

Candidates for admission to the first year who have had a course in Chemistry, and have performed laboratory work equivalent to that required during the first year in this school, will be permitted, on examination, to omit the Chemistry of the first year and to pursue the Chemistry and laboratory work of the second year during the first year of their Medical course. A considerable number of students availed themselves of this provision.

The session of 1893–94 began with the session prolonged from seven months to eight months with Commencement on June 7 instead of early in May as heretofore. This prolongation of the session does not appear to have had the effect of diminishing the number of students in attendance, instead the two upper classes have increased in number. The number of students in attendance upon instruction during the session 1893–94 was 796 distributed in classes as follows:

<table>
<thead>
<tr>
<th>Class</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students of the Voluntary Fourth Year Class</td>
<td>6</td>
</tr>
<tr>
<td>Students of the Third Year Class</td>
<td>274</td>
</tr>
<tr>
<td>Students of the Second Year Class</td>
<td>325</td>
</tr>
<tr>
<td>Students of the First Year Class</td>
<td>188</td>
</tr>
<tr>
<td>Special Students</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>796</strong></td>
</tr>
</tbody>
</table>

Compared with session 1892–93:

Total Number of Students in Attendance, Session 1892–93, 847
Total Number of Students in Attendance, Session 1893–94, 796

This shows a loss of fifty-one in the total number in attendance which is due to the smallness in the size of the first year class entering on the four-year course, as compared with the first year class which entered on the three-year course in the session 1892–93. There was an increase of twenty-eight students entering the second and third year class on advanced standing.
During the session of 1893–94, by special invitation of the Faculty, Professor J. M. DaCosta delivered two lectures and Dr. Isaac Ott, of Easton, one lecture before the students of the school. These lectures were very largely attended by the students, and it is hoped that this system of lectures by distinguished specialists may be continued.

The courses of lectures on the History of Medicine and on Medical Terminology proposed by the Faculty, December 21, 1891, were delivered for the first time during the session of 1893–94. They are very popular courses and a valuable part of the first year curriculum.

The specimens belonging to the Wistar and Horner Museum, except those which are used in teaching in the Medical School, were transferred during the session 1893–94 from the old museum room in Medical Hall to the new Wistar Institute of Anatomy.

One of the most urgent needs of the Medical School is a new building for the accommodation of the Physiological, Pathological and Pharmacological laboratories. The Physiological and Pharmacological laboratories at present occupy cramped and totally inadequate quarters and are in especial need of better facilities and more extensive rooms.

Respectfully submitted,

John Marshall,
Dean.

APPENDIX No. XV.

It is known to the Board of Managers that, in order to secure the adoption by the Medical Faculty and by the Trustees of the Four-Year Graded Medical Course, I made a subscription of $50,000, payable in five annual instalments of $10,000 each, the first instalment payable in 1893.

The present communication concerns that subscription, and is made with the formal approval of the Medical Faculty.

The success of the advanced medical course has led the Medical Faculty to prefer an addition to the equipment of the Medical Department to an addition to its endowment.
The conditions of the last appropriation by the State Legislature to the University Hospital (requiring the actual receipt of $80,000 specifically subscribed for construction of new Hospital Buildings before the payment of any part of the appropriation) renders immediate action necessary.

I have empowered my bankers, The Philadelphia Mortgage and Trust Company, to pay to the Treasurer of the University of Pennsylvania the sum of $50,000 upon the following conditions:

First, That the additional $30,000 requisite to meet the conditions of the said Appropriation Act be subscribed and paid in to the University before May 1, 1894.

Second, That the total sum thus secured as available for construction, namely, $160,000, be forthwith expended in accordance with the conditions of said Act, and in general accordance with the following program:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>For Extension of Maternity Hospital</td>
<td>$20,000</td>
</tr>
<tr>
<td>For Erection of a Laboratory of Clinical Medicine</td>
<td>$25,000</td>
</tr>
<tr>
<td>For Erection of New Wing to Hospital</td>
<td>$95,000</td>
</tr>
<tr>
<td>or $100,000.</td>
<td></td>
</tr>
<tr>
<td>For Erection of a New Laundry and Disinfecting Apparatus</td>
<td>$15,000</td>
</tr>
<tr>
<td>For Minor Construction</td>
<td>$7,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$160,000</strong></td>
</tr>
</tbody>
</table>

Third, That the Trustees of the University shall pay annually, from the funds of the University Hospital, the sum of $1250 toward the maintenance of said Laboratory, this being equivalent to 5 per cent upon $25,000 which I had intended to be reserved as endowment.

It is understood that if when $25,000 has been expended for construction of said Laboratory, the Trustees came into possession of money subscribed by other parties, so that any or all of the remaining $25,000 of my donation be not required for construction, such portion of said donation shall be held by the Trustees and invested according to their discretion as a Special Endowment Fund of said Laboratory, the interest being paid over to the Director upon properly vouched and approved requisition, and the funds of the Hospital shall be released in a corresponding degree from any payment of interest.

Fourth. That the said Laboratory shall be erected in accordance with the plans prepared by Dr. Billings, the Director of the
Hospital and on the site designated by the Managers of the University Hospital, and shall be supplied with heat and light from the Hospital plant without cost to said Laboratory.

Fifth. That the said Laboratory shall be always styled and designated as The William Pepper Laboratory of Clinical Medicine, it being my intention to hereby create a memorial for my father.

Sixth. That the Director and Assistant Director of said Laboratory shall at all times be appointed annually by the Board of Managers of the University Hospital, upon the nomination of the Professor of Theory and Practice of Medicine, and of the Professor of Clinical Medicine.

Seventh. That the purpose of said Laboratory shall be to promote the interest of the patients in the said University Hospital by the prosecution of minute clinical studies and original researches, and to advance the interest of science by the publication of the results of such work.

It is accordingly stipulated, that at no time shall any teaching be given therein to Undergraduate students, or to any students except our own graduates or the graduates of other approved medical schools, whose curriculum is at least of equal length and grade with that of the Medical Department of the University of Pennsylvania.

Provision will also be made for advanced workers engaged in original research.

All publications emanating from said Laboratory, or based on work done in said Laboratory, shall be published as "Contributions from the William Pepper Laboratory of Clinical Medicine;" and this title shall be distinctly printed on all such publications.

It is my intention, should my life and strength be preserved, to supplement this foundation by a further endowment for the purchase of apparatus, and the publication of scientific memoirs.

William Pepper,

February 24, 1894.

Provost.
APPENDIX NO. XVI.

REPORT OF THE DEAN OF THE AUXILIARY DEPARTMENT OF MEDICINE.

WILLIAM PEPPER, M. D. LL. D., Provost.

SIR: As Dean of the Auxiliary Department of Medicine, I beg leave to submit the following report for the year 1893-94.

Professor Edward D. Cope was appointed to the Chair of Zoology and Comparative Anatomy, formerly occupied by Professor Harrison Allen; Professor Amos P. Brown to the Chair of Mineralogy and Geology, vacated by Professor Cope; and Dr. Charles K. Mills, Professor of Medical Jurisprudence, to fill the vacancy caused by the death of Dr. John J. Reese. Dr. Mills was also appointed Dean in place of Dr. Harrison Allen, who resigned to accept the position of Director of the Wistar Institute of Anatomy and Biology.

During the year instruction has been given by Professor Edward D. Cope, in Zoology and Comparative Anatomy; by Professor William P. Wilson, in Botany; by Professor John S. Billings and Dr. A. C. Abbott, in Hygiene; by Professor Amos P. Brown, in Mineralogy and Geology; and by Professor Charles K. Mills, in Medical Jurisprudence. The lectures on the last subject, which had been discontinued for a year, were resumed, and were open to the students of the Fourth Year of the Medical Department, as well as to those of the Auxiliary Department, were well attended.

During the year thirty-nine students were enrolled, a decided increase over the attendance in recent years. Of these, nineteen were from Philadelphia, ten from other counties in Pennsylvania, nine from other States, and one from Austria.

During the year important changes have been made with reference to the granting of certificates and degrees. The degree of B. Sc., which could be taken under the provisions of the announcements of 1892-93 and of previous years, was abolished for all students who had not matriculated regularly for the course of 1893-94; and new requirements and regulations were adopted. Under these new provisions medical graduates of not less than one year's standing, who have taken for at least two years the lectures and laboratory work prescribed in the courses in
Comparative Anatomy, Zoölogy, Botany, Medical Jurisprudence, Toxicology, Mineralogy, Geology and in Hygiene, and have passed satisfactory examinations, and presented to the Dean one month before final examination an original thesis, acceptable to the Faculty, upon some subject connected with these studies, will be recommended to the Board of Trustees for a special Certificate of the Department, signed by the members of the Faculty. In addition, certificates of attendance and proficiency may be given to special students.

The degree of Doctor of Philosophy may now be obtained by students of this department, on fulfillment of the stringent requirements of the Faculty of Philosophy, which will be found in the announcement of the Auxiliary Department. These include the possession by a matriculate of a baccalaureate degree, the pursuance of one major and two minor subjects, and the presentation of a satisfactory thesis. The student must give his undivided attention to the subjects selected for at least one year after graduation in medicine. Renewed interest in the Department is indicated by the increased number of matriculates.

CHARLES K. MILLS,
Dean.

APPENDIX No. XVII.

UNIVERSITY OF PENNSYLVANIA, DEPARTMENT OF LAW,

PHILADELPHIA, March 27, 1894.

SIR:—I have the honor to make the following report of the operations of the Department of Law during the year 1892–93:

Instruction was given during the year by the following Professors and Fellows in the subjects hereinafter mentioned:

By Professor James Parsons to the Second Year's Class in the law of Partnership, and to the Third Year's Class in the law of Decedents' Estates.

By Professor George Tucker Bispham to the First Year's Class in the Principles of Equity; to the Second Year's Class in Equity Jurisprudence, and to the Third Year's Class in Equity, Pleading and Practice.

By Professor Samuel S. Hollingsworth to the First Year's and Second Year's Classes, in the law of Contracts.
By Professor George S. Graham to the Third Year’s Class in Criminal Law.
By Professor George M. Dallas to the First Year’s Class in Torts, and to the Second Year’s Class and Third Year’s Class in Evidence.
By George Wharton Pepper, Esq., then the Algernon Sidney Biddle Fellow, to the Third Year’s Class in the law of Corporations and the law of Insurance.
By Charles Cooper Townsend, Esq., assisting Professor Hollingsworth, in the law of Contracts, and assisting the Dean, in the law of Real Property and Conveyancing.
By George Stuart Patterson, Esq., to the First Year’s Class in Pleading, and assisting the Dean in Constitutional Law, and assisting Professor Bispham, in Equity.
By Francis Herman Bohlen, Esq., in assisting Professor Dallas in the law of Torts and in Evidence.
And by the Dean to the Third Year’s Class in Constitutional Law; to the Second Year’s Class in Conveyancing and Practice in Real Property, and to the First Year’s Class in the Principles of Real Property.
At the annual commencement the degree of Bachelor of Laws was conferred upon fifty-five graduates.
There were in attendance upon the School during the year:

<table>
<thead>
<tr>
<th>Class</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third Year’s Class</td>
<td>56</td>
</tr>
<tr>
<td>Second Year’s Class</td>
<td>52</td>
</tr>
<tr>
<td>First Year’s Class</td>
<td>83</td>
</tr>
<tr>
<td>Special Class</td>
<td>19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>210</strong></td>
</tr>
</tbody>
</table>

Free scholarships were allowed during the year as follows:

**Faculty Scholarships.**

<table>
<thead>
<tr>
<th>Class</th>
<th>Number of Scholarships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third Class</td>
<td>7</td>
</tr>
<tr>
<td>Second Class</td>
<td>2</td>
</tr>
<tr>
<td>First Class</td>
<td>4</td>
</tr>
<tr>
<td><strong>In all</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

**Public School Scholarships.**

<table>
<thead>
<tr>
<th>Class</th>
<th>Number of Scholarships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third Class</td>
<td>3</td>
</tr>
<tr>
<td>Second Class</td>
<td>1</td>
</tr>
<tr>
<td>First Class</td>
<td>2</td>
</tr>
<tr>
<td><strong>In all</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>
Twelve students who had matriculated, and attended all, or part of, the first term, left at the end of that term. The total number in attendance during the year was, therefore, 222.

The following comparative table shows the increase in the years given in the number of Professors, Fellows, and Students:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1883-84</td>
<td>1</td>
<td>3</td>
<td>—</td>
<td>—</td>
<td>34</td>
<td>60</td>
<td>7</td>
<td>101</td>
</tr>
<tr>
<td>1884-85</td>
<td>1</td>
<td>3</td>
<td>—</td>
<td>—</td>
<td>52</td>
<td>69</td>
<td>2</td>
<td>123</td>
</tr>
<tr>
<td>1885-86</td>
<td>1</td>
<td>3</td>
<td>—</td>
<td>—</td>
<td>54</td>
<td>73</td>
<td>2</td>
<td>129</td>
</tr>
<tr>
<td>1886-87</td>
<td>1</td>
<td>4</td>
<td>—</td>
<td>—</td>
<td>64</td>
<td>78</td>
<td>7</td>
<td>149</td>
</tr>
<tr>
<td>1887-88</td>
<td>1</td>
<td>4</td>
<td>—</td>
<td>—</td>
<td>55</td>
<td>84</td>
<td>5</td>
<td>144</td>
</tr>
<tr>
<td>1888-89</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>—</td>
<td>55</td>
<td>51</td>
<td>19</td>
<td>125</td>
</tr>
<tr>
<td>1889-90</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>52</td>
<td>46</td>
<td>68</td>
<td>10</td>
<td>176</td>
</tr>
<tr>
<td>1890-91</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>40</td>
<td>61</td>
<td>66</td>
<td>11</td>
<td>178</td>
</tr>
<tr>
<td>1891-92</td>
<td>1</td>
<td>5</td>
<td>4</td>
<td>56</td>
<td>52</td>
<td>83</td>
<td>19</td>
<td>210</td>
</tr>
<tr>
<td>1892-93</td>
<td>1</td>
<td>6</td>
<td>4</td>
<td>51</td>
<td>83</td>
<td>91</td>
<td>11</td>
<td>236</td>
</tr>
</tbody>
</table>

THE GEORGE BIDDLE AND A. SYDNEY BIDDLE MEMORIAL LIBRARY.

The Library was founded by the gift of 5077 volumes by the family of the late George Biddle, Esq. Effingham B. Morris, Esq., has deposited in the Library 1127 volumes; H. LaBarre Jayne, Esq., has given 192 volumes; sundry donors have given 61 volumes, the Faculty have provided by gift or purchase 2883 volumes, and the Library to-day numbers 9340 volumes.

The Department has, beginning with 1887-1888, annually set aside 12 per cent of its tuition fees amounting, to 1892-1893 inclusive, to the sum of $10,172.01, and disbursed that amount for the maintenance of the Library, including the purchase of books, and the salary of the Librarian and Janitor, and the purchase of Library stationery, no rent having been charged against the Library Fund.

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1887-88</td>
<td>$1,300</td>
</tr>
<tr>
<td>1888-89</td>
<td>1,443</td>
</tr>
<tr>
<td>1889-90</td>
<td>1,300</td>
</tr>
<tr>
<td>1890-91</td>
<td>1,803</td>
</tr>
<tr>
<td>1891-92</td>
<td>1,992</td>
</tr>
<tr>
<td>1892-93</td>
<td>2,333</td>
</tr>
<tr>
<td>Total</td>
<td>$10,172.07</td>
</tr>
</tbody>
</table>

Total to 1892-93 inclusive, $10,172.07
THE FINANCIAL RELATIONS OF THE DEPARTMENT OF THE UNIVERSITY.

The University loaned to the Department the sum of $2,500 to defray the expenses of furnishing the lecture rooms and library room in the Girard Building. The interest on this loan at five per cent has been paid to the University, and $2,232.26 has been repaid to the University on account of the principal of the loan, reducing that principal to $267.74.

Since the removal of the Department to the Girard Building, the Department has paid from its own receipts the rent of its library room and lecture rooms, and the salaries of its Dean, Professors, and Fellows, and the University has been at no charge for the operation of the Department other than the Department’s share of the salaries of the Provost and Secretary of the University, and the Department’s share of the expenses of the Annual Commencement.

Beginning with 1887 the Department has paid to the University net receipts (exclusive of the payment of interest upon, and principal of, the furniture loan) aggregating to 1892–93 inclusive, $9,926.42, as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1886–87</td>
<td>$377.60</td>
</tr>
<tr>
<td>1887–88</td>
<td>945.20</td>
</tr>
<tr>
<td>1888–89</td>
<td>1,002.00</td>
</tr>
<tr>
<td>1889–90</td>
<td>838.00</td>
</tr>
<tr>
<td>1890–91</td>
<td>1,942.08</td>
</tr>
<tr>
<td>1891–92</td>
<td>1,940.94</td>
</tr>
<tr>
<td>1892–93</td>
<td>2,885.60</td>
</tr>
</tbody>
</table>

This Department has also expended in furniture during the year $175.36

**Summary.**

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library Fund to 1892–93</td>
<td>$10,172.01</td>
</tr>
<tr>
<td>University net receipts</td>
<td>9,926.42</td>
</tr>
<tr>
<td>Furniture in 1892–93</td>
<td>175.36</td>
</tr>
<tr>
<td>Furniture Loan repaid</td>
<td>2,232.26</td>
</tr>
</tbody>
</table>

Total net profits and income from 1886–87 to 1892–93 after paying rent, Professors’ salaries, and all expenses of administration $22,506.05
The following balance sheet classifies the receipts and payments for the year 1892–93:

<table>
<thead>
<tr>
<th>Dr.</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dr.</strong></td>
<td><strong>Cr.</strong></td>
</tr>
<tr>
<td>To balance from 1891–92,</td>
<td>$126 49</td>
</tr>
<tr>
<td>&quot; tuition fees,</td>
<td>19,445 00</td>
</tr>
<tr>
<td>&quot; rents,</td>
<td>1,950 04</td>
</tr>
<tr>
<td>&quot; Biddle Fund Income,</td>
<td>500 00</td>
</tr>
<tr>
<td>&quot; Morris Fund Income,</td>
<td>40 00</td>
</tr>
<tr>
<td>&quot; interest on deposits,</td>
<td>53 67</td>
</tr>
<tr>
<td>Total,</td>
<td><strong>$22,115 20</strong></td>
</tr>
<tr>
<td><strong>By library disbursements:</strong></td>
<td></td>
</tr>
<tr>
<td>Purchase of books,</td>
<td>$1423 11</td>
</tr>
<tr>
<td>Freight,</td>
<td>10 10</td>
</tr>
<tr>
<td>Rebinding books,</td>
<td>157 05</td>
</tr>
<tr>
<td>Stationery,</td>
<td>58 46</td>
</tr>
<tr>
<td>Salaries: Librarian,</td>
<td>$350 04</td>
</tr>
<tr>
<td>Janitor,</td>
<td>267 00</td>
</tr>
<tr>
<td></td>
<td>617 04</td>
</tr>
<tr>
<td>By furniture purchased,</td>
<td><strong>$2,265 76</strong></td>
</tr>
<tr>
<td>By general expenses of administration:</td>
<td></td>
</tr>
<tr>
<td>Printing and distributing catalogues,</td>
<td>$333 83</td>
</tr>
<tr>
<td>Stationery,</td>
<td>66 40</td>
</tr>
<tr>
<td>Postage,</td>
<td>18 30</td>
</tr>
<tr>
<td>Printing examination papers,</td>
<td>108 14</td>
</tr>
<tr>
<td>Engraving diplomas,</td>
<td>106 95</td>
</tr>
<tr>
<td>Prizes,</td>
<td>90 00</td>
</tr>
<tr>
<td>Sundries,</td>
<td>65 75</td>
</tr>
<tr>
<td></td>
<td><strong>$789 37</strong></td>
</tr>
<tr>
<td>By salaries of Dean, Professors and Fellows,</td>
<td>11,597 93</td>
</tr>
<tr>
<td>By payment to the University:</td>
<td></td>
</tr>
<tr>
<td>8 per cent. on $19,445,</td>
<td>$1555 60</td>
</tr>
<tr>
<td>One-third net profits,</td>
<td>1200 00</td>
</tr>
<tr>
<td>For salary of Assistant Secretary (Mumford),</td>
<td>125 00</td>
</tr>
<tr>
<td>5 per cent interest on $1467.74, balance of furniture loan,</td>
<td>73 40</td>
</tr>
<tr>
<td>Payment on account of principal of furniture loan,</td>
<td>1200 00</td>
</tr>
<tr>
<td></td>
<td><strong>$4,154 00</strong></td>
</tr>
<tr>
<td>By balance:</td>
<td></td>
</tr>
<tr>
<td>To credit of Library Fund,</td>
<td>$67 64</td>
</tr>
<tr>
<td>&quot; general fund,</td>
<td>315 14</td>
</tr>
<tr>
<td></td>
<td><strong>382 78</strong></td>
</tr>
<tr>
<td>Total,</td>
<td><strong>$22,115 20</strong></td>
</tr>
</tbody>
</table>
The following statement excluding rent, library fund, furniture, and the Morris Funds, show the surplus for the year 1892-93.

Receipts.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition fees</td>
<td>$19,445 00</td>
</tr>
<tr>
<td>Biddle Fund</td>
<td>500 00</td>
</tr>
<tr>
<td>Interest on deposits</td>
<td>53 67</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$19,998 67</strong></td>
</tr>
</tbody>
</table>

Expenditures.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries</td>
<td>$11,597 93</td>
</tr>
<tr>
<td>Expenses</td>
<td>789 37</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$12,337 30</strong></td>
</tr>
</tbody>
</table>

Surplus for 1892-93, $7,611 37

It is due to my colleagues, the Professors and Fellows, and to the Librarian and his assistants, that I should make acknowledgment of their faithful and self-sacrificing labors during the year.

I am, Sir, with sincere respect,

Your obedient servant,

C. Stuart Patterson,

To the Provost.

Dean.

APPENDIX No. XVIII.

UNIVERSITY OF PENNSYLVANIA. DEPARTMENT OF DENTISTRY.

PHILADELPHIA, April 20, 1894.

Professor William Pepper,

Provost, University of Pennsylvania.

Dear Sir:—I have the honor to report to you the condition of the Department of Dentistry, and the character of the work performed during the session, 1892-93.

The following statistics are presented for the year beginning September, 1892, and ending August, 1893.

The number of students matriculated 1892-93. 153

Of these there were students of the third year, 17

" " " second year, 60

" " " first year, 72

" " " special students, 4

--- 153
Number of new matriculates, including those admitted to advanced standing, ..... 86

Of these there were admitted upon presentation of certificate, . 62
Admitted upon examination, 10
Admitted to advanced standing, 14

Those admitted to advanced standing presented certificates from the following institutions:
American College of Dental Surgery, 1
Boston Dental College, 1
Cooper Medical College, 1
Ecole et Hospital Dentaire, Paris, 1
Pennsylvania College of Dental Surgery, 1
University of Berlin, 2
University of Breslau, 1
University of Geneva, 2
University of Halle, 2
University of Pennsylvania, Medical Department, 1
University of Vermont, 1

The countries represented in the Department are as follows:
Middle States, 84
New England States, 7
Western States, 15
Southern States, 11
Pacific States, 3
Australia, 3
Barbadoes, W. I., 1
Brazil, 3
Cuba, 2
Dominion of Canada, 5
Ecuador, 1
England, 1
France, 1
Germany, 2
Guatemala, C. A., 1
Hayti, 1
Mexico, 1
New Zealand, 1
Nicaragua, C. A., 1
Orange Free States, S. Africa, 1
Philippine Islands, 1
Switzerland, 3
Turkey, 1
Uruguay, 1
United States of Colombia, 1
Venezuela, 1
SUMMARY.

United States and Canada, ............................................. 125
Foreign Countries, ................................................... 28

The amount of work performed in the Operative and Mechanical branches has been as follows:

**OPERATIVE**

Number of operations, .............................................. 15,718

**MECHANICAL**

Number of operations, .............................................. 706

Total, ........................................................................... 16,424

Amount of gold used for stopping, exclusive of that used in mechanical work, ........................................... 42 ozs., or 3 lbs. 6 oz.
Number of patients, ..................................................... 6833
Number of students in graduating class, ......................... 21
Number of students who received the degree, ................... 17

The session 1892–93, was looked forward to with some anxiety as it represented the second session of the three required. It was, therefore, with much satisfaction that when we entered the regular work of the course, it was demonstrated that there had been an increase of 12 matriculants over those of session 1891–92, or, in other words, 60 for the first and 72 for the second, which, added to 17 students entitled to graduate, under previous regulations, and 4 special students, made the total for the session 153.

This ensured the Department from loss and also made it reasonably certain that future years would show a proportionate increase. This has been fully demonstrated in the session of 1893–94 not yet completed, in which the total number of students of all classes has reached 231.

The certainty that this increase will be steadily maintained leads the executive officers of the Department to view the difficulties of management with much concern.

There is a limit to the number capable of being taught satisfactorily in a dental school, but that we have reached that limit I am not prepared to believe, and hence look hopefully for an extension of our list of matriculates very much beyond present numbers.

You are aware, however, that with our present accommodations the limit has been exceeded, and unless relief be afforded it is feared we will enter upon the course of 1894–95 with the
difficulties of the past increased by many additions to our list of students.

The monetary complications prevailing the past year throughout the country has prevented any active efforts toward a new building for the Department, and while it is possible relief will not come in this direction for some years, it is equally certain that unless something be done, the Department must remain stationary, and this means loss of reputation.

The Faculty, after due consideration, extended the course in harmony with other departments of the University to eight months, or from October 1st to the first week in June. This extension takes effect the present session of 1893–94.

The dental schools of the country have been gradually extending the length of their sessions, but comparatively few have more than five months. It is anticipated that the National Association of Dental Faculties at its next meeting will require an extension of time.

The number of foreign students still continue to show an increase. It was anticipated that the financial depression would affect this, but the number of forty-one from foreign countries for 1893–94 indicates that it has not had the depressing effects expected.

Appended is a condensed statement of income and disbursement for the fiscal year 1892–93.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition, matriculation and graduation fees</td>
<td>$14,095.00</td>
</tr>
<tr>
<td>Fees from previous years</td>
<td>430.00</td>
</tr>
<tr>
<td>Operative and Mechanical Clinics</td>
<td>3,542.50</td>
</tr>
<tr>
<td><strong>Total income from all sources</strong></td>
<td><strong>$18,667.50</strong></td>
</tr>
<tr>
<td>Less fees returned</td>
<td>250.00</td>
</tr>
<tr>
<td><strong>Total income from all sources</strong></td>
<td><strong>$18,417.50</strong></td>
</tr>
</tbody>
</table>

Disbursed as follows:

- Current Expenses of Session,                  $ 5,286.12
- Professors and Demonstrators,                 7,200.00
- Principal and Interest on Laboratory Building, 461.25
- Surplus to Professors and Demonstrators,      4,870.13

**Respectfully submitted,**

James Truman,

Dean.
Appendix No. XIX.

To the Provost of the University.

Dear Sir: I have the honor of submitting the following report of the Veterinary Department for the session 1893–94.

It appears to be the experience in professional schools that during times of financial crises the classes in these schools increase considerably above their usual size. This may be attributed to the partial or complete closing of manufactories and the stagnation in trade in mercantile establishments, thus affording young men no opportunities for employment, and, in consequence, many who otherwise would not do so, choose a professional career.

This statement does not seem to apply to the School of Veterinary Medicine, for during the financial crisis just passing there has been, compared with recent years, a considerable diminution in the size of the entering class as well as a loss in members of the higher classes. Possibly this loss may be attributed to the Veterinary School’s dependence for many of its students upon the agricultural classes of the country with whom there is always more or less employment on the farm for young men.

During the session of 1892–93 there was a total attendance of 92 students, while during the session of 1893–94 just passed the total attendance was 78, a loss of 14 students.

The following table shows the number of students, in classes, in attendance during the two sessions:

<table>
<thead>
<tr>
<th>Session 1892-93</th>
<th>Session 1893-94</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students of the third year</td>
<td>30</td>
</tr>
<tr>
<td>&quot; &quot; second &quot;</td>
<td>24</td>
</tr>
<tr>
<td>&quot; &quot; first &quot;</td>
<td>36</td>
</tr>
<tr>
<td>Special students</td>
<td>2</td>
</tr>
<tr>
<td>Total attendance</td>
<td>92</td>
</tr>
</tbody>
</table>

It will be observed that the first year class, session 1893–94, numbered 10 less than the class entering in 1892–93, and that the latter class, which this session (1893–94) is the second year class, numbers 10 less than when it entered last year. Last year’s second year class on entering this year (session 1893–94) numbered one more than last year. From the tenor of communications received from former students who were obliged for pecuniary
reasons to discontinue their studies, it is believed that many will return and thus augment the size of next year's (session 1894–95) second year class.

The course in practical forging in the blacksmith shop has been discontinued, and in its stead a full course of lectures on horse-shoeing has been substituted.

Owing to the crowded condition of the Biological Department instruction in general biology, botany and zoölogy is now given in one of the buildings in the grounds of the Veterinary School. This change has been of advantage to the students of both departments in that they receive more individual instruction.

Additions, including a Sartorius short-arm balance, have been made to the equipment of the Physiological Laboratory, and a high power microscope has been purchased for use in research work. A full collection of the weeds and seeds of the weeds of the United States has been purchased for use in the teaching of botany.

Various minor improvements have been made in the buildings of the school, and it is gratifying to report that the property is in good condition.

The income of the school from tuition fees, together with the generous annual contribution of the children of the late J. B. Lippincott, Esq., form a fund from which, after the current expenses are paid, there remains a sum which is applied to the payment of the salaries of the professors. This sum is totally inadequate to sufficiently compensate the professors of the special veterinary branches for their services, and, therefore, it is earnestly hoped that, either by endowment or by contribution, the income of the school may be increased.

I have the honor to remain very respectfully yours,

John Marshall,
Dean.

Report of the Veterinary Hospital.

Two thousand and fifty-three animals were treated in the hospital during the year ending August 31, 1893. This is an increase of 228 animals treated over the number treated in 1892, an increase of 475 over the number treated in 1891.
John W. Adams, A. B., V. M. D., occupying the Professorship of Surgery and Obstetrics in the Veterinary School, was elected early in the scholastic year to a position on the Hospital Staff of Surgeons and to membership in the Board of Managers of the hospital.

The asphalt pavement in the gateway of the hospital has been replaced by a substantial granolithic pavement.

Section G of the hospital building, formerly occupied as a dog kennel, has been fitted up with six commodious box stalls, thus increasing the capacity of the hospital.

The building erected as a hospital for dogs and other small animals was completed last year and supplied with the necessary equipment. This addition to the working plant of the hospital has been in successful operation from the time of its opening.

To render the Veterinary Hospital still more useful in the care of a larger number of sick and injured animals, it is hoped that the humane people of our city will contribute toward its support by annual contributions or by the endowment of stalls and kennels.
Ilililli!
mmm.
<table>
<thead>
<tr>
<th>Class</th>
<th>Subject of Course</th>
<th>HOURS PER WEEK</th>
<th>Number of Students</th>
<th>Instructors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Term 1</td>
<td>Term 2</td>
<td></td>
</tr>
<tr>
<td>4 A</td>
<td>Selections from Livy and Horace (Satires)</td>
<td>3</td>
<td>3</td>
<td>36</td>
</tr>
<tr>
<td>3 A</td>
<td>Tacitus (Agricola, Germania, or Annals). Cicero (De Senectute or De Officiis). Horace (Selected Odes).</td>
<td>3</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>2 A</td>
<td>Selections from Juvenal. Cicero (De Officiis, De Finibus, or De Amicitia). Horace (Epistles). Reading at sight,</td>
<td>3</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>1 A</td>
<td>Cicero (Tusculana) or Lucretius (Selections). Horace (Ars Poetica). Reading at sight,</td>
<td>3</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>2 A</td>
<td>Quintilian Book X,</td>
<td>1</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>2 A</td>
<td>Plautus' Trinummus,</td>
<td>—</td>
<td>—</td>
<td>13</td>
</tr>
</tbody>
</table>

**ENGLISH COMPOSITION AND DECLAMATION.**

4. Composition work based on a study of American prose authors (Franklin, Irving, Hawthorne, Poe). Gentung's *Outlines of Rhetoric*.

5. Composition. — The preparation of one composition a week on subjects chosen to illustrate the various modes of rhetorical expression.

2. Weekly exercises in popular and literary subjects assigned by the instructor.


7. Weekly exercises in popular and literary subjects assigned by the instructor.

8. Declamation. — The preparation by each student of two or more declamations per term.

1, 2. Declamation. — Special training in the writing of orations, in debating, and in speaking, extemporaneous and prepared.

15. Reading. Declaration and debating.

3. Modern Essayists,
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Professor</th>
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<td>2</td>
<td>Modern Novelists,</td>
<td>Mr. Penniman</td>
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<td>Period of French Influence,</td>
<td>Dr. Schelling</td>
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<td>7</td>
<td>The Age of Elizabeth,</td>
<td>Mr. Penniman</td>
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<td>4</td>
<td>Seminary.—Discussions and criticisms of papers prepared by the students on subjects selected from the works of authors treated in Courses 3 and 7,</td>
<td>Dr. Schelling</td>
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<td>10</td>
<td>Principles of English Versification,</td>
<td>Dr. Schelling</td>
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<td>13</td>
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<td></td>
<td>Special Class in Literature,</td>
<td>Dr. Schelling</td>
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<td>i, 2 A</td>
<td>Anglo-Saxon.—Sweet's Anglo-Saxon Primer, Sweet's Anglo-Saxon Reader,</td>
<td>Dr. Schelling</td>
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<td>lectures on phonetics, with some comparative study of Anglo-Saxon,</td>
<td>Dr. Schelling</td>
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<td>Middle English and Modern English forms and orthography,</td>
<td>Dr. Schelling</td>
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<td>Anglo-Saxon.—Anglo-Saxon Poetry, Sievers' Anglo-Saxon Grammar, March.</td>
<td>Dr. Schelling</td>
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<td>Comparison of Anglo-Saxon forms with those of the later periods continued,</td>
<td>Dr. Schelling</td>
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<td>i, 2 A</td>
<td>English Philology.—Minor Course. Readings in Chaucer,</td>
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<td>i A</td>
<td>English Philology.—Major Course. Morris' Specimens of Early English,</td>
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<td>Readings in Chaucer,</td>
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<td>i, 2 A</td>
<td>Elizabethan Grammar.—A philological and grammatical study of plays of Shakespeare, Abbott's Shakespearean Grammar,</td>
<td>Dr. Schelling</td>
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<td>i A</td>
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<td>Dr. Schelling</td>
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