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## **Picturesque University of Wisconsin: 1848-1898. 1898**

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PICTURESQUE  
University  
of  
Wisconsin  
1848-1898

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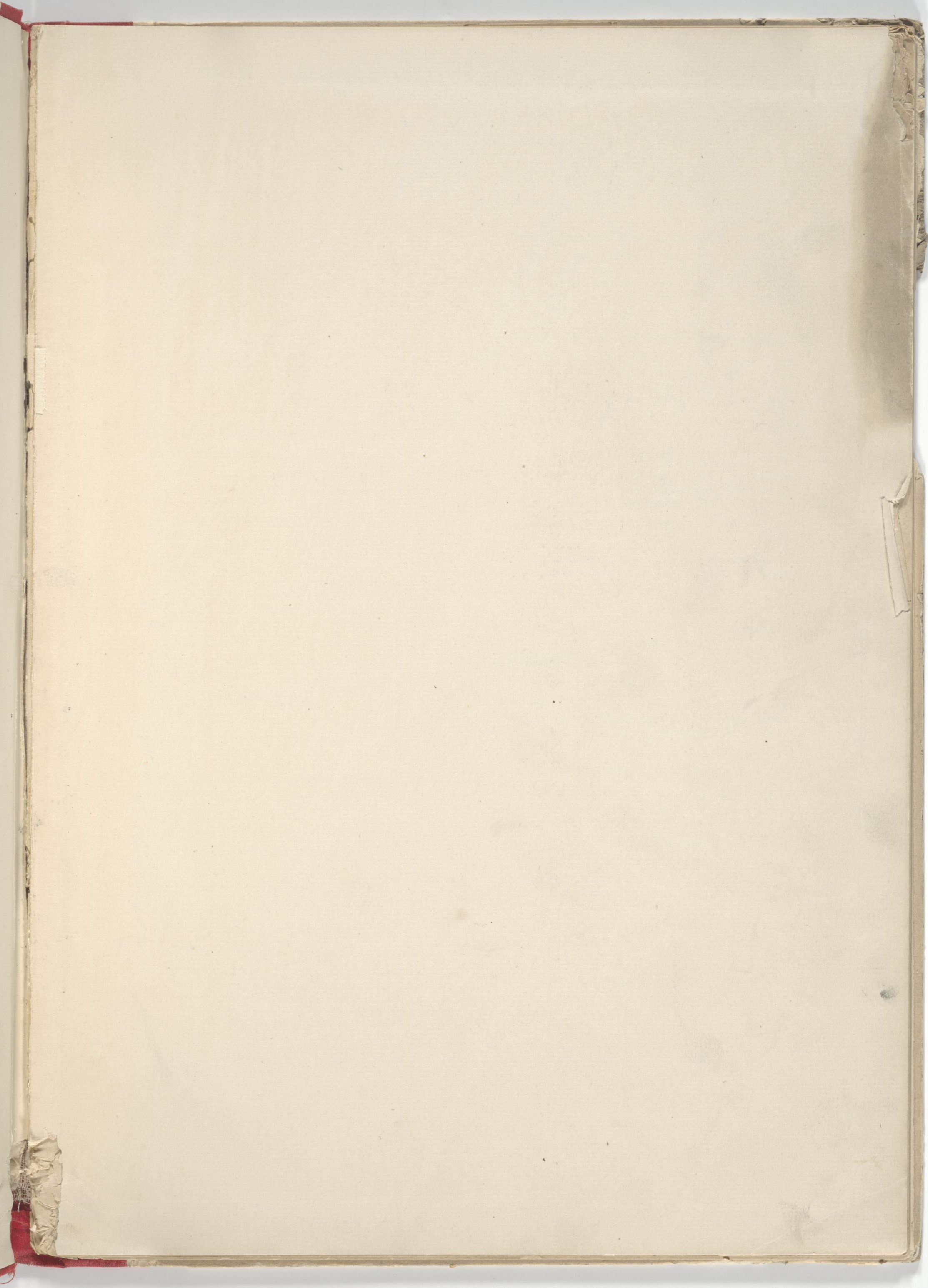
William Herbert Hobbs.

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# Picturesque University of Wisconsin.

"On elevated, hilly ground, between two charming lakes, it has an almost unrivalled situation, and is likely to possess, in the progress of years and the accumulation of wealth, the picturesqueness and beauty that travelers ascribe to Stockholm. With the hills of the town, the gracefully curving shores of the lakes, and their pointed bays, the gentle elevations beyond the lakes, and the capacities of these two bodies of water as pleasure resorts, with elegant music pavilions and fleets of boats for sail and oar — why do we not take a hint from the painted Venetian sail? — there is no limit to what may be expected in the way of refined beauty of Madison in the summer, if it remains a city of education and of laws.—CHARLES DUDLEY WARNER in *Harper's Magazine*.



THE UNIVERSITY'S SITE 'TWIN'T MENDOTA AND MONONA.

"Four limpid lakes—four Naiades  
Or sylvan deities are these,  
In flowing robes of azure dressed;  
Four lovely handmaids, that uphold  
Their shining mirrors, rimmed with gold,  
To the fair City in the West."

—LONGFELLOW.

**N**ESTLED among its clustered lakes in the heart of Wisconsin, is the picturesque city of Madison, the seat of the University of Wisconsin. This year of grace, 1898, is the fiftieth anniversary of the birth of the institution, which existed at least in name when, in 1848, Wisconsin entered the Union of sister states. The University's years have not been characterized by equivalent growths, for the youthful institution had to struggle against discouragements which are common to the histories of most of the state universities. The last dec-

made to present an outline description of the University in all its departments, and to picture the institution in its setting of lake and forest, hill and vale.

## The University Site.

It was a genial destiny which gave to the University of Wisconsin a home among the hills and waters of the "Four Lakes Country", and raised its well-fated walls in the city and community of Madison. The life of the University is indissolubly linked with that of the city, and rarely indeed is there drawn a sharply dividing line to separate the "town" from the "gown". It would be difficult to over-estimate the influences which have come into the life of both from the felicitous choice of site and the great and unusual beauty of the natural surroundings. If "to look on noble forms makes noble through the sensuous organism that which is higher," then there must have accrued to the life and spirit of University and town, some fortunate influence from the magic of those native scenes which long ago won the praise of Horace Greeley and stirred the poetic fancy of Longfellow. Bryce, too, in *The American Commonwealth* extends a tribute to the beauty of the university site, ranking it second to none in the States; and Sir Edwin Arnold, after his visit to Madison in the winter of 1895, in an interview with a reporter of the *Chicago Herald*, described Madison as the most beautiful city he had seen in America. "It has not a street but is a vista," he said.

The Four Lakes Country is a region of rolling prairie with limestone hills, mantled

and buttressed by the glacial drift, which has brought a softness and delicacy to the outlines only accentuated by the few rocky points which it has left uncovered. Among these hills stretched out in a chain along the silver-winding Yahara, lie those "four limpid lakes, four Naiades or sylvan deities", of which Longfellow sang. At the head of the chain lie Mendota and Monona, and right where their circling shores come nearest to each other and the Yahara has taken advantage of their proximity to join them by a silver twine, between the two, spread out upon the hills in the shape of a rude hour glass, lies "the fair City in the West."

Along these two lakes are built the delightful homes of the Madisonians and upon two hills, one lying beside Monona, the other a

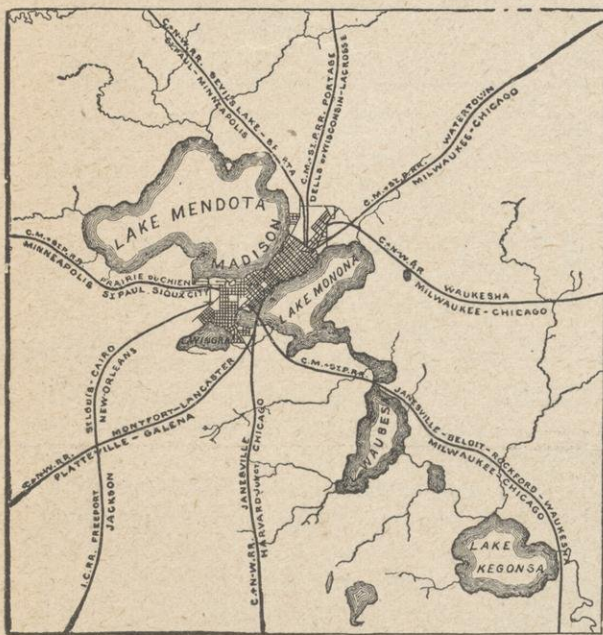


"THE HILL" FROM "THE TOWN."

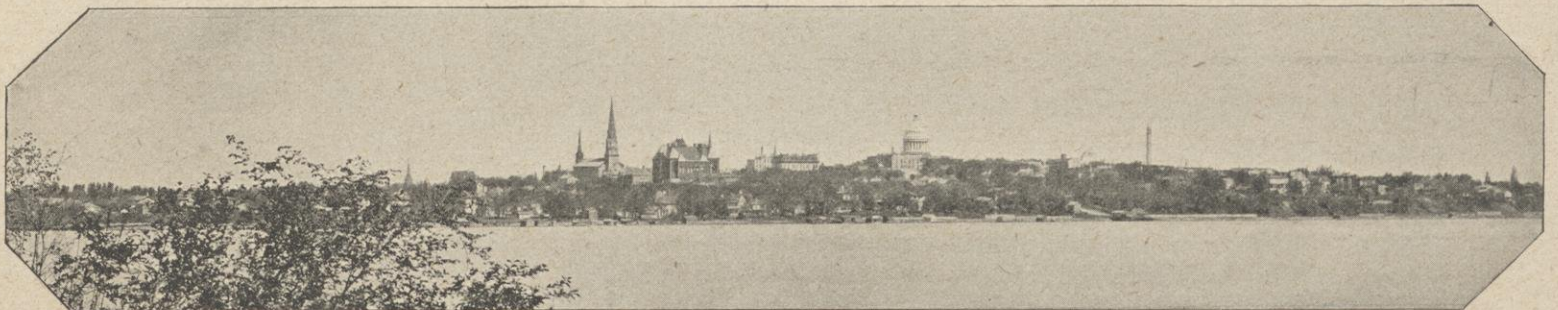
mile farther west beside the shores of Mendota, rise the two institutions which are the great facts in the life of the community—the State Capitol and the University. From these institutions have sprung, by them are nourished, and around them cling, the civic and academic ideals of the city; and these ideals along with a natural municipal pride in the beauty of the town, have developed and sustained the character peculiar to Madison.

## "The Town."

The citizens of Madison are few of them wealthy, and one will not find among them the luxury and prodigality in living of the metropolis, but a large proportion are men of scholastic reputation or of political or judicial position. An exceptionally large number of them are people of high attainments, of educated taste, and of travelled and cosmopoli-



ade has been one of phenomenal growth, in which the attendance at the institution has almost trebled with corresponding expansion of the University in all lines. The changes have been so pronounced and the new lines of work undertaken so many that it would not be strange if many of the University's best friends are ignorant of the extent of these changes. In this little book the attempt is



"THE CITY WITH ITS SPIRES AND TOWERS LIKE A GARMENT WEARS ITS RICH ROBE OF TREES CLASPED AND STUDDED AS IF BY A GREAT BROOCH WITH THE WHITE DOME OF THE CAPITOL."





WINTER SCENE ON MENDOTA.

tan breadth and refinement. In this little community of 18,000 one meets United States senators, cabinet officers, foreign ministers, judges of all ranks, prominent military commanders, historians, and people of literary attainments. The *entree* to society is more largely based upon merit than is often the case. The importance of such surroundings and such an atmosphere can hardly be over-estimated in its salutary effect upon a young and impressionable mind, and the university is pre-eminently fortunate in this regard.

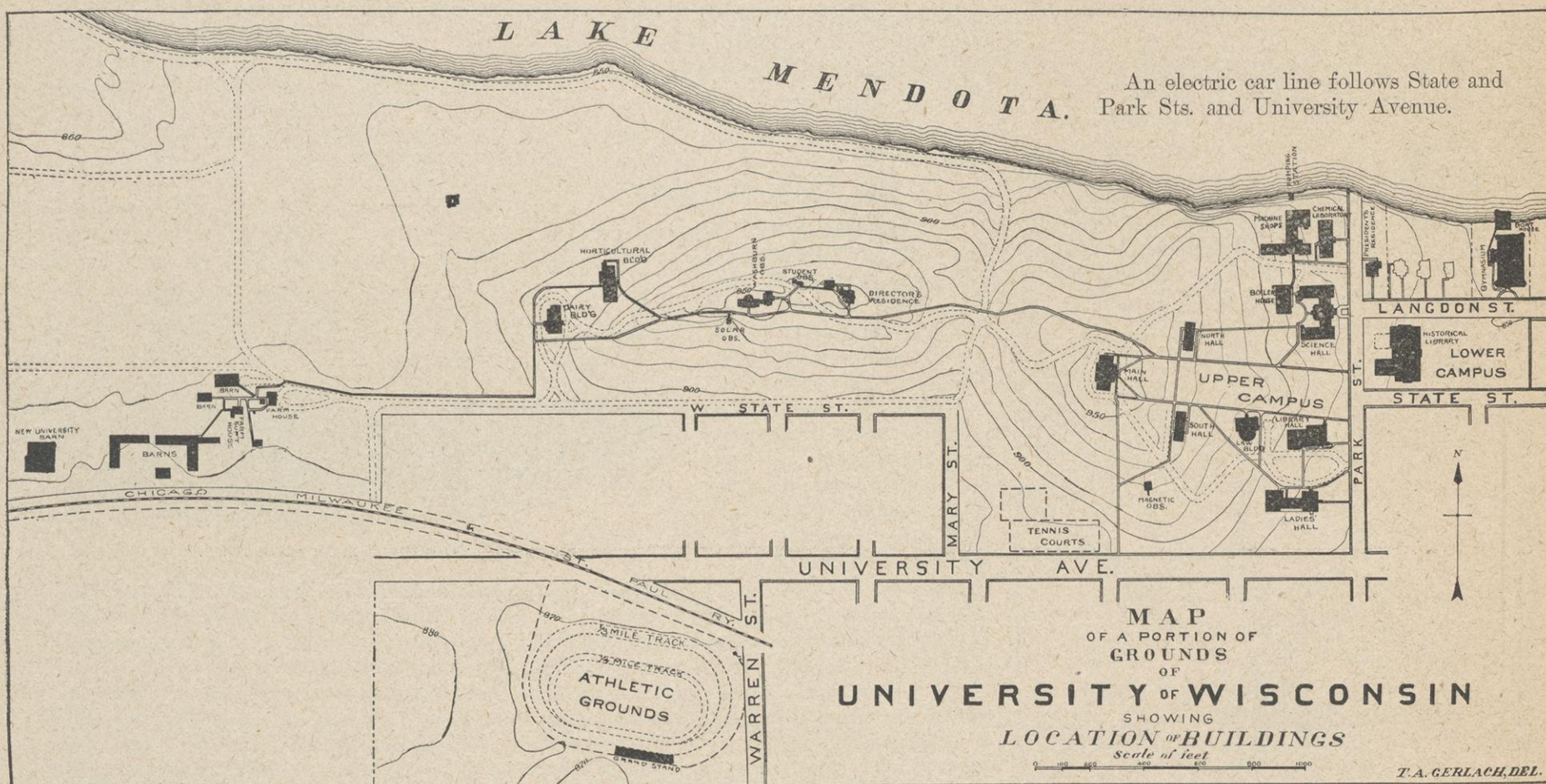
brooch with the white dome of the capitol.

Directly at one's feet the smooth sward of the "Upper Campus" pitches forward between its towering elms to Park Street; on either hand lie the university buildings, a third of the way down, the sometime dormitories, now "North Hall," and "South" or "Agricultural Hall," lie to the left and the right; a half of the remaining distance on the right is the Law Building, where beats the heart of the institution, for there are the offices of the President, the Board of Re-

hills billowing away into the purple east; this side the hills and woods, the sparkling waters of Monona roll to the very skirts of the city, and then the city with its spires and towers nestles upon its gentle slopes and "like a garment wears" its rich robe of trees, clasped and studded as if by a great

### The Lake Front.

Opposite the Chemical Laboratory a smooth, green lawn glides back to the lake and in the midst of the lawn stands the President's House; if the heart of the university throbs at the law building, its pulse beats here. To the eastward of the President's House extends "Professor's Row" with deep, cool lawns joined to one another, the green sward sloping gently away under the glorious trees to a little bluff at the water's edge, below which lie the ever restless boats. Whether it be on a summer's afternoon when the squirrels scamper about upon the grass or chatter among the trees, and the idle sails fill in the picture; whether "the elfin builders of the frost" have covered the ground with its snowy mantle, the trees with flashing jewels, and the lake with a thick roof of crystal, over which like tireless sea-gulls glide with easy grace and sudden, fitful change of direction the white-winged ice-yachts; or whether the scene be transformed to another



### The University's Origin.

In the days of our earliest statehood, when Madison was little more than a strip of houses along the ridge beside Lake Monona, local pride had already taken possession of the territorial provision of 1835 for a "University of the Territory of Wisconsin," and the woody hill at the western edge of the village was known as "College Hill," although it was not until 1849 that this land really became the property of the University Regents. It was eight years more before the first buildings were erected on the crest of the hill.

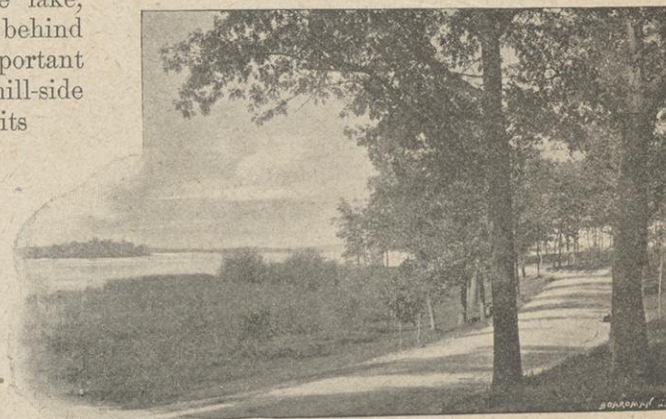
### University Grounds—"The Hill."

"University Hill" continues to be the nucleus for the entire arrangement of the college grounds, and to be in attendance at the University is to be "on the hill." Standing in front of University or Main Hall, at the crown of the hill and looking eastward, one sees spread out before him like a relief map, the city of Madison. Next the horizon will be seen one, two, sometimes three lines of

gents, the Registrar, and the Deans of Letters and Science, and of Law. At the foot of the Hill on the right is Library Hall (our memorial building), and farther to the south, with about eighty of the young women of the University in its keeping, is the newly remodeled dormitory of Ladies' Hall.

On the other side of the campus, so set back as to complete no monotonous regularity of arrangement, Science Hall fronts massively upon Park Street; and north of Science Hall, almost upon the brink of the lake, stands the Chemical Laboratory and behind it the Machine Shops. A rather unimportant looking building half buried in the hill-side to the west of Science Hall, but with its nostril of masonry extended in the upper strata of the atmosphere, might justly claim a more conspicuous position, for down beneath the level of the street is found a whole battery of boilers, the ganglions of a great system of pipes which stretch out to the farther as well as to the nearer buildings, carrying warmth and comfort everywhere.

kingdom of fairyland by the witchery of lanterns among the trees, the charm of strains of low music, youthful, happy voices wafted in from the water, and the full glory of a summer's evening: under any of these conditions there are few spots which may vie with the charm of this little strip of wooded shoreland to satisfy the soul and place man in complete harmony with Nature. Those other spots lie on the same shore some distance to the east and west.

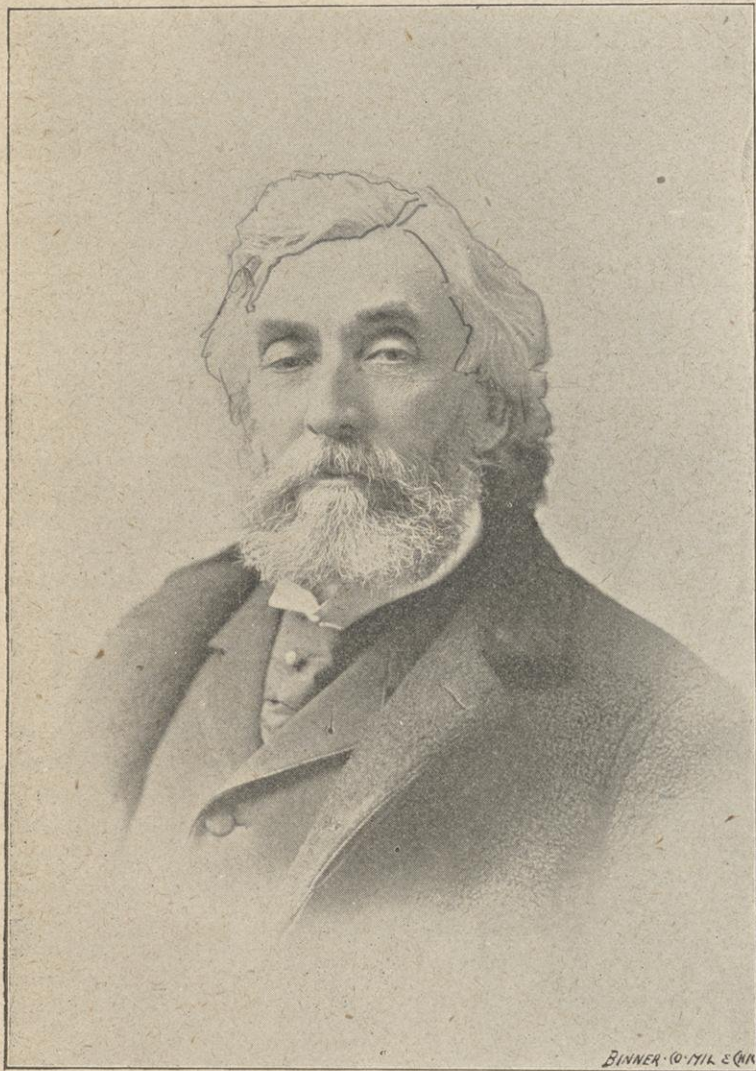


"TWIXT THE SHADOW AND THE SUNSHINE."



### The Lower Campus.

Directly opposite the President's House is the rising structure of the new Historical Library Building which will gaze with classic nobility and whiteness upon the men of the University learning the art of war as they march out upon the field to the east, for here is the parade-ground of the university battalions, as well as a practice ground for the athletes. Looked down upon by the Library



PRESIDENT CHARLES KENDALL ADAMS, LL. D.,  
UNIVERSITY OF WISCONSIN.

Building, this campus is frowned upon in calm and triumphant grandeur by the Norman battlements of the massive Armory and Gymnasium. Behind the "Gym" and almost hidden by its mammoth towers, but in the very lap and luxury of Mendota, is the University Boat House, having in its keeping the shells and boats of the University Navy and pleasure boats for all. Beside it is the Rowing Tank for the winter practice of the crews.



### The Grounds to the West of "The Hill."

Let us return to our point of vantage at the top of "The Hill" and then turn to the north. In this direction the land maintains its elevation and a deeply wooded ridge, terminating abruptly a couple of hundred yards away, loftily overlooks the lake. To the south of the Hill, the hill slopes away with some suddenness and then smoothes itself out into a mild declivity, at whose edge the Tennis Associations of students and faculty have each a set of courts. On any bright spring day the devotees of the racket flock here in numbers to practice for the tournaments which occur at the end of the season.

### The Athletic Field.

Beyond the Tennis Courts one's eye is intercepted by a narrow line of houses, and then roams over the broad expanse of turf, where the 'Varsity battles of skill and pluck and brawn are fought upon the historic field of old Camp Randall. One looking down upon this field five and thirty years ago would have seen companies of raw recruits marching up and down in awkward squads and learning enough of the science of war so that they might be sent to the front to do or die for their country. Now, looking down upon the field of an autumn afternoon you will see the best nerve and brawn of the university in mimic battle upon the grid-iron or the track, and should it be some fortunate Saturday, you may see some thousands of the frantic sons of the University and town debouch into the field from the gigantic grand stand and bleachers and in a delirium of joy carry eleven victorious athletes upon their shoulders.

To the west of the Athletic Field, the newest of Madison's suburbs "rises on high to the sun," a favorite building spot of professors, and hence known as University Heights.



### Observatory Hill.

From the crest of the University Hill the land falls away steeply into a woody vale traversed by various paths and drives. The density of the trees obstructs the immediate view and the distant prospect to the west



BETWEEN THE OBSERVATORY AND THE LAKE.

is completely cut off by the sudden rising of Observatory Hill, which is crowned by a little group of buildings,—the Students' Observatory, Washburn Observatory (the bequest of ex-Governor Washburn), and the



residence of the Director. But the Observatory is far from being the western outlook of the University. Though hidden from our view, there lies nestled against the western slope of Observatory Hill and framed by the dark green of the shapely spruces, the first, as it is still the most notable of American Dairy Schools—Hiram Smith Hall. A little to the north is the finely equipped Horticultural Building with its extensive growing houses of glass. On the plain to the west, where the Linden Drive sweeps gracefully



A COOL PATH THROUGH THE WOODS NEAR THE HALLS  
OF LEARNING.

around to the north to reach the shore, stands the little knot of buildings of the University Farm.



On the very summit of Observatory Hill, overlooking Mendota Lake, the simple-minded Indian raised in their mysterious forms the burial mounds of his ancestors, whose fantastic monuments have been preserved to excite our interest today. He could hardly have chosen a better spot, for one may travel in many lands and never have a more beautiful prospect laid about him than here; to the east, the University, the city, Lake Monona; to the south, Lake Wingra, Camp Randall, and The Heights; to the west, the wide domain of the University Farm, its orchards, pastures, lawns, and clustering groves and flocks, here and there beds of flowers and brilliant plats of foliage plants, gleaming beside long avenues of trees which mark the course of drives and walks; and then, as one swings around to the north, University Bay, circled by the trim, paved roadway of the University Drive, then the long ridge of Picnic Point creeping far out into the lake, crowned with waving trees and lending magic to the waters that lie beyond, and then the full sweep of the lake lying proudly among its





THE OBSERVATORY, LOOKING DOWN UPON MENDOTA LAKE.

woods and fields and stately promontories,—on every hand

“Calm groves, meandering hills, and lucid lakes  
And dusky lowlands lying deep between  
Broad fields of lithe dim-clustered sedge-grass, spired  
With swinging cattails tall, and interspaced  
Brightly with glimmering armlets of the lake.”

### A Day in June.

IN any of the softer seasons of the year it is a luxury akin to Paradise to stroll or drive about this lake or row along its bowery shores; to be up before the sun and off to Governor's island for a fishing trip, and see the wondrous dawn arise; to stroll, of an afternoon, out the long “Linden Drive,” stop for a drink of buttermilk at the Dairy, and, passing round to the lakeside, hear a rich voice ringing out over the water and see the bright backs of the 'Varsity “Eight”, bending in perfect time as they come dancing home in their shell; to take any one of a hundred sequestered walks in among the trees, or, if one can afford a horse or a wheel, to ride or drive about either side of the lake, on perfect roads for miles and miles, over rustic bridges, through quarries, and sylvan solitudes, now dense with shade and now offering sudden surprises of lake and sky; to bathe one's spirit for an unheeded hour in one of Mendota's matchless sunsets, and, as the evening draws on, to float along the shore, whence comes the tinkling of mandolins and guitars, or perhaps the crash of the 'Varsity Band, or the voices of the Glee Club singing college songs in the gloaming. “Haply the queen moon is on her throne, surrounded by her starry fays.” And then the enchantment is indeed perfect, and one becomes in dreams that poet for whom in the quietness of an assured faith these lakes and woods are waiting; for they know that one day, as sure as Cam or Thames, these Academic groves shall have their Milton or their Arnold. This matter can safely be left with the generations and with the generative and inspiring power of nature.

For the beauty and kindness of such surroundings have the power to subdue a community to something of their own humor and to breed and raise up generations in sym-

pathy with them. As if in proof of this, the trees of University and town have long been invaded by thousands of those graceful and harmless little denizens of the woods, who are usually the victims of wicked boys with shot-guns—the squirrels. Here they frisk about the lawns and trees in perfect safety, and are almost as tame and confiding as household pets. They are joined by an exceptional number of song birds who enjoy a like immunity, and birds and squirrels together make merry with chatter and song

eral grants of public lands were made by the Federal Government for the support of the University; the first of two full townships, ten years before the admission of the state to the Union, a second of a like amount in 1854, and a third of 240,000 acres in 1862. But not only were the moneys received from the sale of these lands illegally appropriated for the buying of the University site and the erection of the earlier buildings, but the lands were shamefully sacrificed at low prices in order to induce immigration to the state in the pioneer days.

Thus what might have become a permanent endowment of great wealth was frittered away to comparatively nothing, and it has become necessary for the state to levy taxes not only for the expansion of the University but also for its continuous support. And generously has the state shouldered this obligation, and the last ten years especially have been years of marvelous development and prosperity. The grounds and buildings of the University are now estimated to be worth a million and a half of dollars—no mean sum when we reflect that they are not city but, in a sense, rural property. What would they be worth set down in the heart of Chicago?

During the last year the University received from its federal appropriations \$62,780.84, from State Appropriations \$284,893.30, from student fees, farm sales, and other sources connected immediately with the University \$68,602.16, and from private donations \$1,431.25. The above does not include the balance reserved from the year before. In the year 1896 the University expended \$403,376.

### Management of University Affairs.

The disbursements and the general supervision of the business matters of the University are in the hands of a Board of Regents of twelve members. Ten of them are in the appointment of the Governor, and the President of the University and State Superintend-



THE UNIVERSITY SHORE.

HIRAM SMITH HALL.

“LINDEN DRIVE.”

ARMORY AND GYMNASIUM.

SCIENCE HALL AND UPPER CAMPUS.

among the trees. So beneficent are the surroundings among which the University has grown up during the last half century.

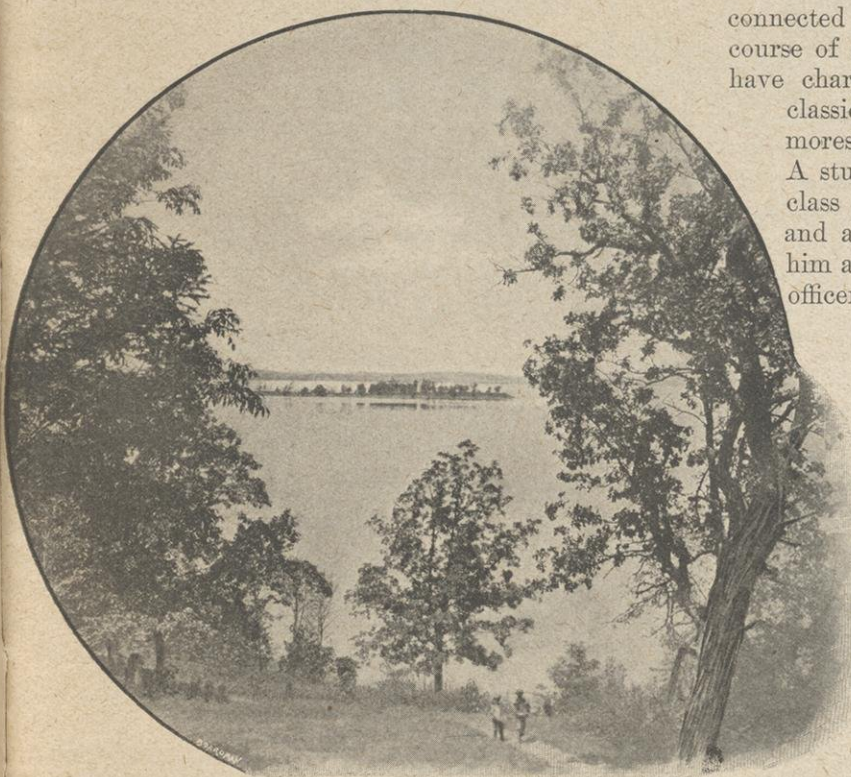
### The University's Resources.

FOR its origin and perpetuation and for its ever-increasing financial prosperity, the University is indebted partly to certain wise provisions of the Federal Government, but more conspicuously, as time goes on, to what we are fond of calling “The Bounty of the State.” Three sev-



VIEW ON LAKE MENDOTA.





PICNIC POINT ON LAKE MENDOTA, AS SEEN FROM UNIVERSITY GROUNDS.

ent of Public Instruction are members, *ex-officio*. But the immediate conduct of University affairs is in the hands of the President. He is most immediately responsible for the fate of the institution, with him originate new plans for expansion and improvement, to him students and faculty look as the point at which all interests and all opinions converge and pass into a unity of action.

\* \* \*

The staff-officers of the President are the Deans. The Deans have supervising charge of the conduct and scholarship of all students in their particular departments, as the Dean of the College of Letters and Science over all students "on the Hill," the Dean of the Law School over all law students, etc.

\* \* \*



A new institution is that of a Dean for Women, by which all the young women of the University are brought under the supervision and counsel of one of their own sex having experience in University work. This has led to a new organization of the young women of the University into what is known as a Self-Government Association, which aims to bring unity into their social organization and discipline. This system is already successfully at work in the discipline of Ladies' Hall.

\* \* \*

### Personal Contact of Professors and Students.

But still more intimate supervision of the work of individual students is achieved by the system of class officers. Each student has for his class officer, some member of the faculty intimately

connected with the work of instruction in his course of study. Thus one class officer will have charge of all Freshmen of the modern classical course, another of all Sophomores, taking the same course, and so on. A student is directly responsible to his class officer, who knows all about him and about his work, discusses it with him and with his instructors; to his class officer he goes to lay plans for his study, to receive advice and encouragement. By this effectual system the student enjoys all of the advantages of individual direction and supervision and personal contact and sympathy, which are conferred in a small college, while having at the same time the broadening influence of a great University, where he meets not only men of his own ideas, his own tastes, his own stage of progress, but men in every line of work, the engineer, the pharmacist, the horticulturist, the student of literature, of law, biology, or the classics, and he brushes against

men of every stage of advancement from Freshman to the Graduate and Doctor; and thus is mobilized into a living organization, a great institution of seventeen hundred men and women of varying aims, ambitions, and tastes, yet who have one thing in common, the *pursuit of knowledge*.

\* \* \*

### Personnel of the University.

The University is provided with an instructional force of 80 professors, 39 instructors and assistants, a library staff of 6, and a staff of 10 in the School of Music—135 in all.

The students of the University, grouped in the different schools and colleges and departments of work, are as follows:—in the Department of Graduate Study 92, in the undergraduate courses of the College of Letters and Science, with which are enrolled the students of the School of Political Science and History and the School of Pedagogy, 752; in the College of Engineering, 220; in the College of Law, 178; in the School of Pharmacy, 61; and in the School of Music, 105. In addition there are 62 Adult Special Students, who are under the immediate supervision of the Dean of the College of Letters and Science, 10 Long and 157 Short Course Agricultural and 115 Dairy Students, making the total number of students in attendance during the college year, after deduction of those twice counted, 1,695. The students enrolled in the University Summer School will swell this number to 1,850.

\* \* \*

### Courses of Study.

Each one of the above mentioned schools and colleges of the University has not only its Dean or Director, but to a greater or less extent its own faculty, its own courses of study, its own laboratories, seminaries, library, apparatus, and facilities for work, though in these particulars the several schools overlap and assist one another. In the sequel this booklet will give to its readers in more detail

the description of the material equipment of the several colleges of the University—their libraries, museums and collections, observatories, experiment station, machine shops, and apparatus of every kind.

The College of Letters and Science offers five main courses of study, whose names are indicative of the studies pursued in each. They are the Ancient Classical, the Modern Classical, the English, the Civic-Historical and the general Science courses. The College of Engineering provides courses in General Civil Engineering, Municipal and Sanitary Engineering, Mechanical Engineering, and Electrical Engineering. It is especially well equipped to give instruction in Topographic and Geodetic Engineering, Railway Engineering, and in Hydraulic and Steam Engineering. Each year the Engineering classes are taken to the neighboring cities of Milwaukee and Chicago to study the great engineering works under the guidance of their instructors. The School of Music offers both a collegiate and an academic course.

\* \* \*

### The Optional System Under Control.

It will be seen by an examination of the University's catalogue how great is the variety of work at the choice of the student. The arrangement of the courses of study is such that option is left to him in the choice of his work, without allowing him to waste his time by random election of studies which have no bearing on any particular line of work. Each University course is framed to give the student a mental outfit along some line, and is composed of a skeleton of required studies of a fundamental character. Under the guidance of his class officer the student elects the balance of his work in cognate branches. As the perfect scholar should not only know everything of one subject, but a



A QUIET STRETCH OF THE LAKE SHORE.

little of every subject, brief informational courses are given in the form of synoptical lectures, and thus the classical student receives a little knowledge of science, and the engineering or science student is kept from becoming too narrow in his field of thought.

In all courses the student has reached such a position before graduation that he is in a position to undertake the study of some special topic, which is made the subject of his individual investigation and constitutes when completed his baccalaureate thesis. The advantage of this system in bringing out the talent of the student has been verified many times and need not be expanded here. Many such theses by Wisconsin's students have been valuable contributions to the world's knowledge and may now be read in standard publications.



A SUMMER CAMP ON LAKE MENDOTA.





VISTA FROM UNIVERSITY LAKE SHORE DRIVE.

Many a student as he enters college has already laid the plans for his life work in the field of scholarship. If he is to be a college professor, a historian, or an investigator in any field of science, arts, or letters, there must be a decided advantage in choosing his studies in reference to this purpose. In its so-called Group system the University has provided a system of study which allows greater continuity, concentration, and thoroughness in the leading lines of study, at the same time affording a wide familiarity with the broad field of knowledge.

#### Student Organizations.

In addition to the formal work of University instruction innumerable voluntary organizations and enterprises are carried on among the students themselves, which add a great breadth and complexity to the University life. A large number of literary and scientific clubs are supported by the students, and among them perhaps most notable are the old time debating societies, one or two of them dating back to the very earliest days of the University, and numbering among their alumni many of the greatest public men the University and Wisconsin have produced. The annual Joint Debates of these societies have a national reputation for their thoroughness and exhaustiveness of research. The Y. M. C. A. and Y. W. C. A. are flourishing Associations in which students find every encouragement to Christian life and activity.

The University has glee clubs of both men and women, banjo and mandolin clubs, an orchestra, and, of especial merit at present, the University Band, which is associated with the University Regiment and has a paid student leader. This Band furnishes the music for the Military and Athletic Balls and for all student affairs of a general character, such as the athletic games.

A Choral Society of over 150 voices recruited from both "town" and "gown", gives every year in the great auditorium of the gymnasium building several of the great oratorios and concerts, to which soloists are attracted from the large cities.

#### College Publications.

Besides the *Daily Cardinal*, the students of the University publish the weekly *Alumni Cardinal* and *The Aegis*, a bright monthly literary magazine, which stimulates among the students an interest in literary work and

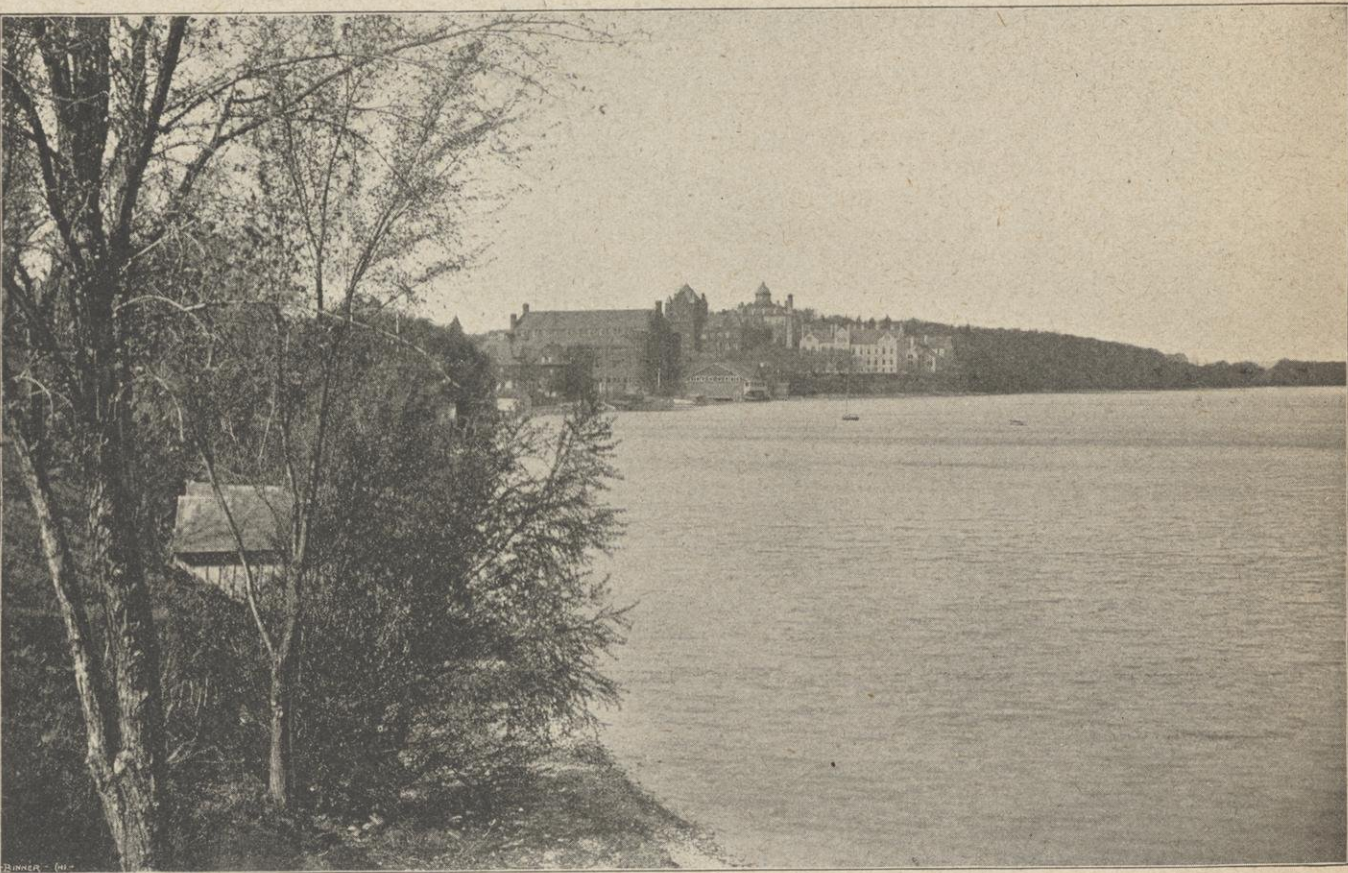
furnishes a suitable medium for bringing together in permanent form the best products of students' pens. *The Badger*, a beautifully illustrated book of several hundred pages, published annually by the Junior class and devoted more especially to the humorous phases of college life, brings out not alone the latent literary ability of the students, but the artistic as well.

*The Wisconsin Engineer* is a quarterly magazine whose technical merit has attracted much attention in Europe as well as in America.



#### Physical Culture.

Of the opportunities for physical culture and athletic development it is hardly necessary to speak in these lines. Wisconsin easily outstrips the West, and a special chapter in this souvenir pamphlet will be devoted to athletic life at the University. One need only mention the magnificent and fully equipped Armory and Gymnasium, the Regi-



THE LAKE FRONT.

ment of over five hundred men, the Boat-House, Rowing Tank, Athletic Fields, the Tennis Courts, the magnificent paved drives for wheeling, and the championship teams and crews of the last few years, to show how pre-eminent is Wisconsin in this respect.

The foundation on which all her athletic successes have been built, is a required course in physical culture, prescribed as a result of individual physical examination and extending through the Freshman and Sophomore years. A large number of men train for teams, and the rivalry which results tends both to efficiency and to purity in athletics.



Thus the University, with all its wonderful complexity of life, is indeed a miniature world, peopled by the student body. And how healthful and serene it all is: broad sympathies and varied enthusiasms continually being stirred, a vigorous physical perfection made the basis of lofty and practical ideals of scholarship and the entire life set in a frame of marvelous natural beauty, which wins perpetually to health of body and habits, and to serenity of spirits and mind.

#### Madison at Sunset.

O Madison the Beautiful,  
Sweet dream of all that's fair,  
Thy gem-like lakes, thy dimpled hills,  
The peace thy valleys wear,  
By day the sun with happy glance,  
Rests lovingly on thee,  
By night the stars thy charms enhance,  
The moon adds majesty.

But who that sees thy skies at eve,  
And watches Day depart,  
Fails in that hour one hope to weave,  
Like rose bloom in the heart;  
Or plainly hear, like thee, aright,  
Great Nature's undertone,  
And in the power of Beauty's light,  
Desire to keep his own!

—Mary M. Adams.

Madison, 1898.

#### The Four Lakes of Madison.

Four limpid lakes—four Naiades  
Or sylvan deities are these,  
In flowing robes of azure dressed;  
Four lovely handmaids, that uphold  
Their shining mirrors, rimmed with gold,  
To the fair City in the West.

By day, the coursers of the Sun  
Drink of these waters as they run  
Their swift, diurnal round on high;  
By night, the constellations glow  
Far down their hollow deeps below,  
And glimmer in another sky.

Fair lakes, serene and full of light,  
Fair town, arrayed in robes of white,  
How visionary ye appear!  
All like a floating landscape seems  
In cloud-land or the Land of Dreams,  
Bathed in a golden atmosphere.

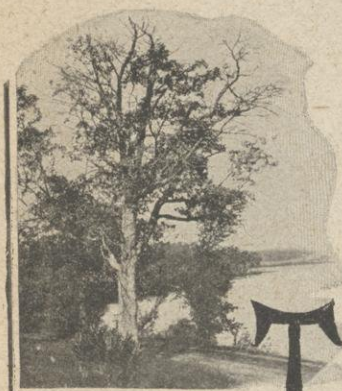
—Henry W. Longfellow.

Jan. 20th, 1876.



# The College of Letters and Science.

"Madison has the most magnificent site of any inland town I ever saw."—HORACE GREELEY.



## The College of Letters and Science.

**T**HE HEART of the University, about which have clustered its professional and technical schools, is the College of Letters and Science, which provides instruction in those subjects that lie at the basis of every liberal educational course,—the classics, modern languages and literature, English, history, mathematics, and science.

In order to indicate what is the work of this nucleal portion of the University, it will be necessary to call attention to the material equipment in buildings, libraries, museums, lecture rooms, laboratories, and seminaries; to the mental outfit in the staff of instruction; to the spirit or atmosphere of the insti-

### Material Equipment.

**B**UILDINGS. In the opening number of this series was printed a map on which may be seen the location of all the University buildings. University Hall at the crest of the hill, soon to be enlarged, is the home of the classical departments, English, the romance languages, and mathematics. North Hall houses the departments of Germanic and Scandinavian languages. The upper portion of the Law Building is given up to the School of Economics, Political Science, and History. Library Hall is the present abode of our University library, soon to find a home in the great University and State Historical Library Building, now rising at the west end of the lower campus. In Science Hall, physics, geology and mineralogy, comparative psychology, and biology, have each their lecture rooms and laboratories. On the lake front is situated the Chemical Laboratory, and on Observatory Hill to the west of University Hill, are the astronomical observatories. Most of these buildings, as well as the machine shops, Ladies' Hall, and the great Gymnasium, are supplied with heat from a central heating plant located to the west of Science Hall.

**L**IBRARIES. The library of the University contains over 53,000 volumes and 13,000 pamphlets.

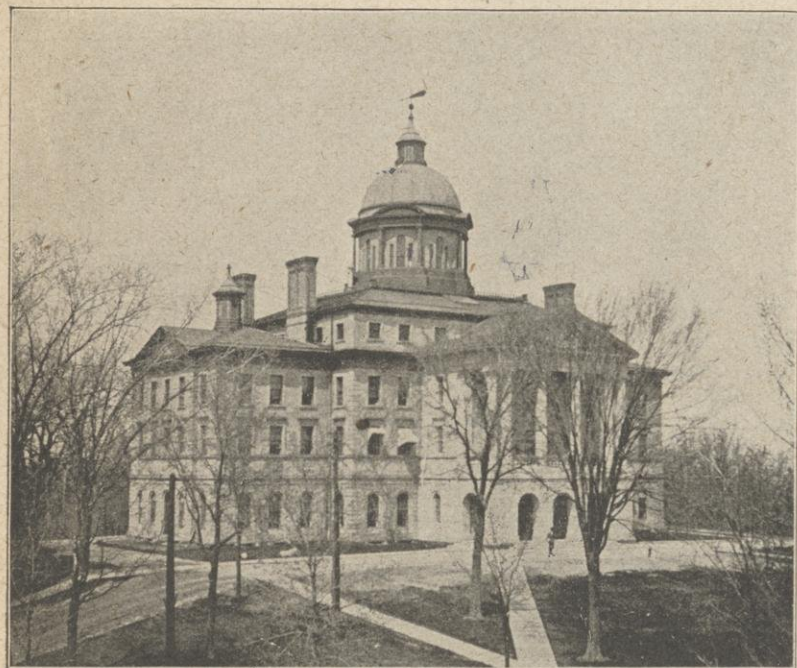
The general university library, including the department libraries catalogued therewith, contains about 48,000 volumes and 11,000 unbound pamphlets. All the more important foreign and American periodicals, numbering now about 400, are regularly received. It also contains on deposit the Owen Library of works on the French language and literature, numbering nearly 1,000 volumes. Special appropriations in recent years have rendered the library especially strong in the lines of economic and political science, and in classical philology. It possesses complete sets of nearly all the important periodical and society publications on these subjects. For its size the library is a remarkably well-balanced and valuable collection of books. Subject to certain restrictions, books may be borrowed by all members of the University.

The new home of the Library and Museum



SCIENCE HALL.

of the State Historical Society, and the University Library, now being erected on the lower campus, will be, when completed in 1899, one of the handsomest library buildings in America. It will also be one of the most conveniently arranged in the world, lacking none of the mechanical conveniences and apparatus now considered essential tools in a scholar's literary laboratory. The State Historical Society stands in the front rank of such institutions in America. The *Atlantic Monthly* for January, 1898, in an editorial reference to the work of the leading state historical societies in the United States, says: "The Massachusetts Society, the oldest of all, and long the most active, is finding its premiership challenged by the comparatively youthful Wisconsin society, whose library is a workshop for the scholars of the Northwest." The library numbers 190,000 titles, and is now in the capitol five minutes by electric car from the University; it ranks third in size and importance among the great



UNIVERSITY HALL.

tution, and to the organization of its work.



**A**DMISSION TO THE COLLEGE.—Students are admitted to this college on the presentation of a proper certificate of graduation from an accredited high school or academy, or on the passing of an examination held at the University. All candidates who appear for examination are examined in geography, United States history, arithmetic, algebra, plane and solid geometry, and English, special stress being laid upon the latter, as it is found that students are more frequently deficient in this study than any other. Additional special requirements are made for each of the courses of the college.

The certified standing of any student in the regular courses of the State Normal Schools is accepted for entrance in place of an examination.



LIBRARY HALL.

historical libraries of the United States (Harvard College and the Boston Public being in the lead), and is the most important reference library west of the Alleghanies. While aiming to be a general library for scholars,





UNIVERSITY SHORE FROM CITY BOAT HOUSE

it is strongest in the fields of Americana, English history, political science, and economics. It is resorted to by scholars and special investigators from all parts of the West and South, and its reading rooms are daily thronged with professors and students of the University, to whom the collections are freely accessible. In the capitol is found, further, the State Law Library of 26,000 volumes, the largest and most complete in the Northwest, and the library of the Wisconsin Academy of Sciences, Arts and Letters, a science library of about 4,000 volumes and 3,000 pamphlets. This library will eventually be removed to the new Library building to make use of the large reading room and be accessible from the one delivery counter. Thus, under the same roof, will be gathered a splendid group of working libraries, together far surpassing in range and value the book collections at any other Western university—and it was Carlyle who reminded us that "the true university is a collection of books."



LIBRARY READING ROOM.

**MUSEUMS.** Libraries are the indispensable tools of every student, but the student of natural science demands in addition material for illustration and for comparative study. Scientific collections are a part of the University's working tools.

The Zoological and Botanical Museum of the University occupies an entire story of the south wing of Science Hall. Its collections of vertebrate skeletons, and invertebrates, of Blaschka and other models, and the Owen Collection of butterflies (the latter on deposit) together form an excellent collection for instruction in Zoology.

The Herbarium of the University, which occupies a separate room, has for its nucleus the Lapham Collection, and contains one of the best collections of mosses in the country. Each season the Herbarium sends out a small party to collect the plants of the state.



LADIES' HALL.

The Geological and Mineralogical Museum occupies likewise an entire floor in the south wing of Science Hall. It contains models of the Colorado Canon, the Yosemite Valley, the great volcanic regions of the world, and of the gigantic mammals and reptiles of former geological eras. Its collection of fossils is supplemented by the valuable type fossils belonging to the Wisconsin Academy of Sciences, Arts, and Letters (on deposit in the museum) and affords abundant material for paleontological study.

The mineral collection includes, beside the systematic collection, the Henry collection of about 30,000 specimens, the best in existence of minerals from southern Wisconsin.

The rock collections at the University number fully 15,000 specimens, and are supplied with about 10,000 microscopic sections. They comprise an aggregate collection which is not equalled by any collection in the West, and by but few in the country.



**LECTURE AND CLASS ROOMS.** The University has for public lectures and general gatherings two large auditoriums, Library Hall with a seating capacity of 1000, and the great auditorium of the Gymnasium, in which 3000 people may be comfortably seated. This great hall, 165 feet long and 95 feet wide, is the largest auditorium northwest of Chicago, and in it are held all the great

gatherings of the University of an intellectual, musical, or social nature. In addition to the Gymnasium and Library Halls, there are in Science Hall the three lecture rooms of the departments of physics, biology, and geology, each with a seating capacity of over 125; further, the lecture room in the chemical building with seats for 150, and the music lecture room of Ladies' Hall. The three lecture rooms of Science Hall are furnished with close fitting and easily adjusted opaque curtains and powerful electric projecting lanterns for the illustration of lectures. The lecture room for physics with seats for 150 students, is a model of its kind, and is supplied with every appliance to facilitate a complete course of experimental lectures. Other departments have their lecture and class rooms, and when needed make use of the larger halls above mentioned.



**LABORATORIES AND SEMINARY ROOMS.** The department of chemistry has four large general laboratories devoted to qualitative, quantitative, organic, and physical chemistry, besides smaller special laboratories for advanced workers. The physical department has three general laboratories for undergraduate work, besides a photometric room and laboratories for special investigation. The physical laboratories have an unusually

complete outfit of apparatus and have a liberal supply of piers, insuring stability of the instruments used. In biology the elementary laboratory accommodates 72 students, and provides compound microscopes and other necessary apparatus for the personal use of each student. For special or advanced work there are, the botanical labora-



NORTH HALL.

tory with its excellent outfit of apparatus and its growing room, the laboratories of histology and of vertebrate anatomy and embryology, and the bacteriological laboratory (the latter in South Hall). The research laboratory and growing houses of the Experiment Station afford special opportunities for research along certain lines for students of chemistry, botany, and bacteriology. The laboratories for mineralogy and petrology are supplied with chemical apparatus, goniometers, microscopes, rock sections, and the other apparatus for an extended course in these subjects.

The psychological laboratory is well equipped with apparatus, not only to illustrate by practical experiments and demonstrations the courses in psychology, but to provide for original research in many directions. The laboratory acquired almost the entire working laboratory exhibited at the World's Columbian Exposition.

In the other than science departments of the University, the seminary room takes the place of the laboratory. Seminary work is included in nearly all of these departments. In the extension of University Hall, soon to be made, and in the new library building, to have no less than twenty-one seminary rooms, all departments of the University will be supplied with the most modern of seminaries, each with its special library of works of reference and of those books which must be frequently consulted.



### The Instructional Staff.

The instructional force of the University consists of 135 members, of which number 51 professors and assistant professors, and 33 instructors and assistants, give instruction in the College of Letters and Science. The average age of the 51 professors and assistant professors is 41 years, an indication that they are now in the prime of life and doing their best work. With a nucleus of older men the majority are still young men, who have had the advantage of the best modern



THE CHEMICAL LABORATORY.



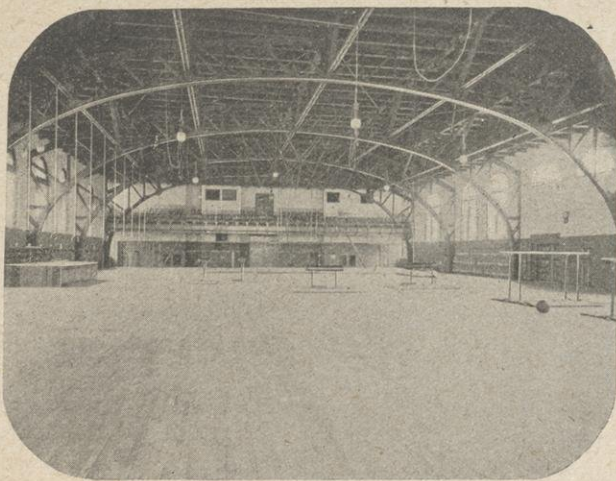
training in such great universities as Cornell, Johns Hopkins, Harvard, and Yale, and the famous universities of Germany. Over 50 per cent. of them have been granted the degree of Doctor of Philosophy from either a German or a great American university, and an equal number have received at least a portion of their university training in Europe.

The cordial relations existing between the different departments of instruction, the beautiful surroundings of the city, but even more the healthful atmosphere of the institution and the belief in its great future, have been potent to retain in the University its strongest men, when tempted by larger salaries to go elsewhere. In a single school of the University, three professors have within a year received flattering calls to chairs in three of the largest universities of the country, but in every case the offer was declined.

### The University Spirit.

Not the least important of the qualities which make a great university, is what is called the spirit of the institution. It is the atmosphere of thought which pervades the university, and is a composite photograph of the thoughts and hopes, and aspirations of its members, faculty and students. In a university possessing a healthful atmosphere, the student is not alone made to learn, but he acquires unconsciously a liking for study and research. Nothing is so vital to a healthful university atmosphere, as a deep interest on the part of its teachers in the extension of the field of human knowledge. It is not sufficient to carry the torches from the holy fire among the people, a great university must feed the fire of knowledge itself.

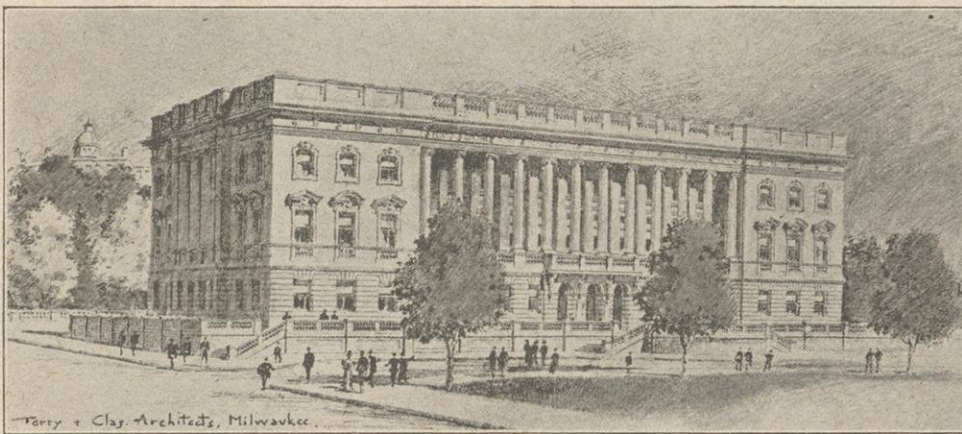
The University of Wisconsin may well pride itself on the earnest and persistent labors of its professors, in searching out the truth and extending the domains of knowledge. Its president, Dr. Charles Kendall Adams, is well known for his books on historical topics and as the Editor-in-Chief of Johnson's Cyclopedia. The head of the School of Economics, Political Science, and History, Dr. Richard T. Ely, has obtained an international reputation in the field of economics by reason of his books on general economics, taxation, the labor movement, and social reform. Dr. Charles R. Van Hise, the professor of geology, is regarded as the first authority in America on the geology of the crystalline rocks. He is also the Director of the Lake Superior Division of the United States Geological Survey, and a member of the Council of the Geological Society of America. Prof. George C. Comstock, the Director of Washburn Observatory, has been a Vice-President of the



GREAT AUDITORIUM OF GYMNASIUM.

American Association for the Advancement of Science, and is distinguished as an investigator in astronomy. Another past Vice-President of the same Association is Dr. Charles R. Barnes, one of the foremost authorities on cryptogamic botany in America. Two Wisconsin professors, well known for their prolific writings are Dr. Joseph Jastrow, who was the head of the Department of Psychology at the World's Columbian Exhibition, and Prof. M. Vincent O'Shea. Dr. Edward A. Birge, Dean of the College and Professor of Zoology, is also the Superintendent of the Wisconsin Geological and Natural History Survey, and a past President of the Wisconsin Academy of Sciences, Arts, and Letters. Dr. Harry L. Russell is one of the foremost American authorities in the field of bacteriology, while Dr. Frederick J. Turner and Dr. Charles Forster Smith are equally well known as writers and teachers.

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UNIVERSITY AND STATE HISTORICAL LIBRARY BUILDING.

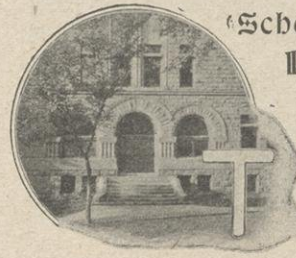
### University Publications.

The interest which is taken at the University in the extension of the field of knowledge, is indicated also by the number of scientific publications which are edited by professors in the institution. The official publication of the University, recently started, is *The Bulletin of the University of Wisconsin*, of which Dr. William Herbert Hobbs is the Editor-in-Chief. This is published in four series, viz.: *The Economics, Political Science, and History Series*, edited by Dr. Frederick Jackson Turner, *The Philology and Literature Series*, edited by Dr. Charles Forster Smith, *The Science Series*, edited by Dr. William Herbert Hobbs, and *The Engineering Series*, edited by Prof. Nelson Oliver Whitney. In all series, except that devoted to philology and literature, in which the opening number is issued, the first volume has been completed. The Washburn Observatory issues the *Publications of the Washburn Observatory*, edited by Prof. George C. Comstock, and now in its eleventh volume.

In addition to the official publications of the University, a number of important serial publications of a scientific or literary character are edited by members of the faculty. *The Botanical Gazette*, the leading American journal of botany, is edited by Dr. Charles R. Barnes. Dr. John W. Stearns is editor of *The Wisconsin Journal of Education*, Dr.

Charles R. Van Hise is an editor of *The Journal of Geology*, and Prof. Albert S. Flint the editor of the *Transactions of the Wisconsin Academy of Sciences, Arts, and Letters*.

The great majority of the members of the faculty have published important monographs dealing with some phase of the special subject which they teach.



### School of Economics, Political Science, and History.

THIS department of the University exists in response to the demand for

training in those studies which directly prepare the student for the active exercise of the duties of citizenship. While the school aims to afford as well rounded and liberal an education as that afforded by other departments, it lays its emphasis upon those branches that deal with materials and problems which the citizen meets in his relations to public affairs. The idea that underlies the work of the School is, that previous practice in handling economic, social, and political questions, historically and in current affairs, is essential to those who must deal with such subjects after graduation.

The advanced elective and graduate courses of the school are designed to fit students for a professional career, in the public service, in journalism, in administration of charitable and reformatory work, and in teaching the branches of the school; and they are also designed as a preparation for the study of the law and for the ministry. The School is peculiarly fortunate in its location, at the capital of the state, where the actual operations of government can be studied, with the help of the famous libraries of the State Historical Society, the University, and the State Law Library,—libraries, which are particularly rich in books on American history and periodicals, and which contain also many of the most essential documentary collections for work in European subjects.

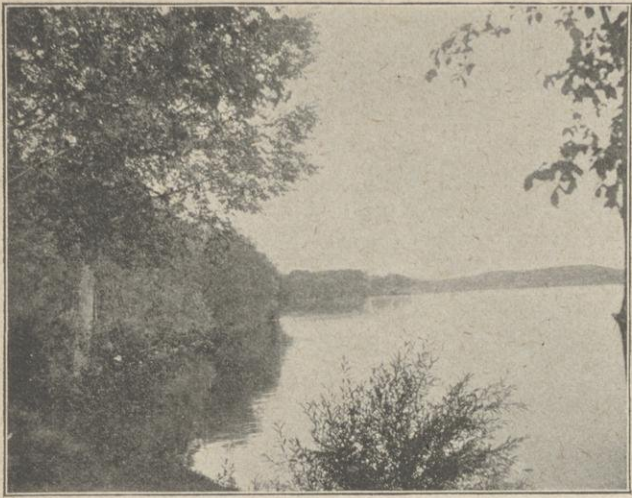
In its organization the school is divided into a graduate department, and the Civic Historical Course for undergraduates. The graduate department of the school has already attracted students from all parts of the Union, including among its numbers this year students from the states of Washington,

Maryland, Texas, Illinois, Iowa, Kansas, and from Japan, as well as from Wisconsin. In all there are 22 graduate students taking their major work in the school. Although so recently founded the school has reason for satisfaction with the success of those to



THE LAW BUILDING, HOME OF THE SCHOOL OF ECONOMICS, POLITICAL SCIENCE AND HISTORY.





VISTA ON LAKE MENDOTA.

whom it has given the degree of Doctor of Philosophy. These trained investigators and teachers occupy the chairs of college professors and instructors in many of the best institutions in the country (including four in the faculty of the School itself), are holding important positions in the administration of the associated charities of cities, or are teaching in secondary or Normal Schools.

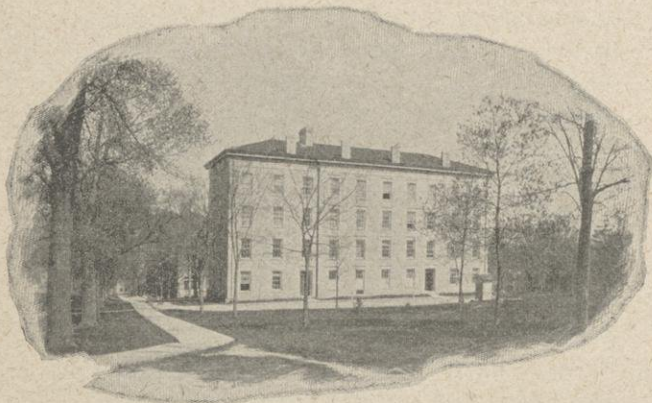
The work of the school includes: (1) elementary courses in the various departments, affording an introductory view of the different branches, (2) advanced courses, and, (3) courses for graduates. In the introductory courses, text-books and lectures are given prominence; in the advanced courses, lectures and topical reports; while in the graduate courses the work is chiefly done in seminars, and the study of original documents is made the foundation of much of the work.



#### THE CIVIC HISTORICAL COURSE.

The civic historical course for undergraduates is taken in this school. Under the liberal elective system of the University, it is possible for students in other courses to elect extensively from the studies of the school, as indeed they do, and also for students in this course to elect freely from the work of other courses.

In economics the courses include elementary economic history and theory, the study of money and banking, finance and taxation, statistics, economic problems in socialism and social reform, distribution of wealth, and



SOUTH HALL.

many advanced courses in economic theory and the history of economic thought.

In political science there are numerous courses in elementary, constitutional, and international law, the history of law, the history of political thought, municipal and general administration, and practical problems in legislation.

In history the numerous elementary courses cover for underclassmen the whole field of general history. Advanced courses are offered in modern European history, including a course on the present century, English history, the history of ancient and mediaeval institutions, and on various periods of American history, one of the courses dealing with the history of the West.

Besides these there are courses in theoretical sociology, charities and crime, economic geography, and transportation. Special courses of lectures are also given annually by prominent men from all sections of the country. It is probable that more important work in applied sociology is being done by the students of Director Ely, than by those of any other teacher in the United States.



**FACULTY OF THE SCHOOL.** The Director of the School, Dr. Richard T. Ely, has more than a national reputation as the author of important works on economic and social questions. His *Introduction to Political Economy* has been translated into Dutch and Japanese, and is used as a textbook in those countries. Prof. John B. Parkinson holds the chair of Constitutional



WASHBURN OBSERVATORY AND DIRECTOR'S RESIDENCE.

and International Law and is Vice-President of the University. Dr. Frederick J. Turner, Professor of American History, is a member of the Historical Manuscripts Commission and of the Council of the American Historical Association. Dr. Charles H. Haskins, Professor of Institutional History, is a member of the Committee of Seven appointed by the American Historical Association to propose a course of historical study for secondary schools. Dr. William A. Scott, Professor of Economic History and Theory, is a member of the Council and of the Publication Committee of the American Economic Association, and is well known for his work in economic lines. Dr. Victor Coffin, Assistant Professor of European History, has published a book on "The Quebec Act and the American Revolution," which is recognized as a valuable and exhaustive contribution to history. The faculty of the school includes in addition five instructors, each a specialist in the particular line which he teaches in the school.



#### The School of Education.

The creation of a School of Education at the University has resulted from the rapid development of a demand for the professional training of those who are to take part in the educational work of the state. It does not mean, however, the abandonment of instruction in education as an element of

general culture. This large interest of society appeals to students of all classes, who, in view of subsequent duties in the home and in the state, are willing to give to it the same measure of careful study as to other problems of history and sociology.

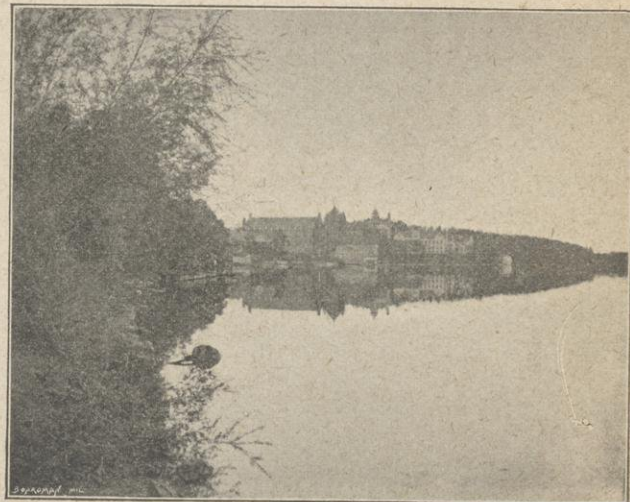
The courses offered in the history and the philosophy of education, are especially adapted to the needs of such students, while also serving as an introduction to the more distinctively professional training. One special characteristic of this at the University is the arrangement with regard to the graduates of normal schools. Those who have completed the full course of our state normal schools, and of other normal schools with fairly equivalent courses of study, are admitted to the University with the rank of Juniors in the philosophical course. This course offers systematic training for two years in advanced pedagogy and philosophy, with a range of options in academic studies which permits the student to make special preparation in the branches to the teaching of which he wishes to devote himself. Courses in applied psychology, child study, and the principles of teaching, with some practice teaching, are provided for such students.

For graduate students, who wish to prepare themselves for work as educational experts, in positions as principals, superintendents, normal school teachers, institute conductors, etc., courses in school supervision, comparative study of modern educational systems, the sociology of education, detailed studies in the history of education, and various seminars, are offered. Through its seminars and theses the school aims to promote the independent and thorough study of educational problems, and to develop habits of research and original investigation.

Undergraduate students in the various courses of the University who expect to teach after graduation are admitted to such classes in the school of education as they are qualified to enter.

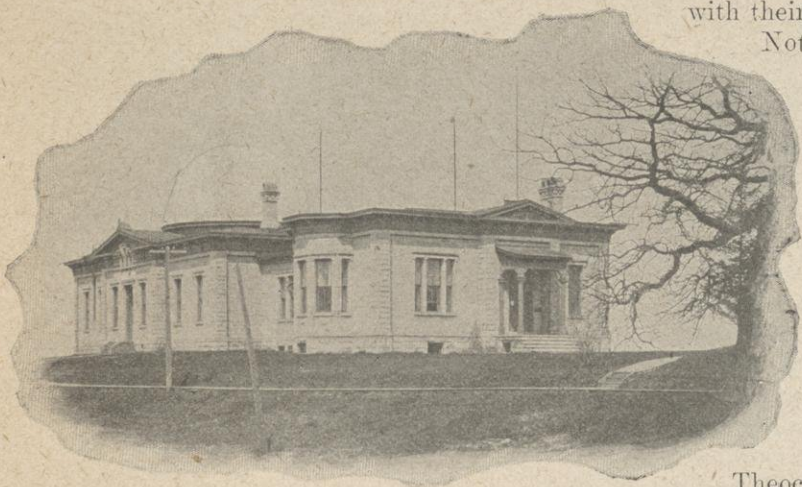
Dr. John W. Stearns, well known as an educator and long the editor of *The Wisconsin Journal of Education*, is the Director of the School and the Professor of Philosophy and Pedagogy. Prof. M. Vincent O'Shea is secretary and Dr. Frank C. Sharp is Assistant Professor of Philosophy.

Prof. Joseph Jastrow directs a laboratory for experimental and applied psychology and for research work. The Department of Philosophy has thus a staff of four professors, and offers no less than twenty courses.



UNIVERSITY HILL.

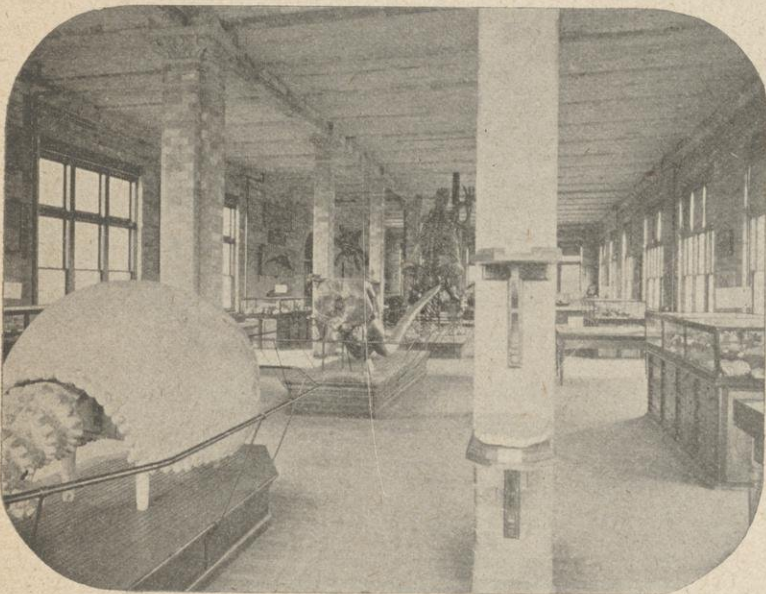




WASHBURN OBSERVATORY.

### The Ancient and Modern Classical Courses.

The laboratory of the various language departments is, of course, the University Library. Books are the materials students and instructors use mainly in such subjects. For the higher studies and for research, the Greek and Latin departments are excellently equipped, the liberal appropriations made by the Regents in 1894 and 1895 having enabled these departments to purchase the completest collection of classical journals to be found in the Northwest, as well as much of the other most important literature connected with Classical studies. These two departments have also not only the necessary maps and charts to illustrate ancient geography, but collections of photographs and lantern slides, with an excellent stereopticon, to illustrate ancient Greek and Roman life;



GEOLOGICAL MUSEUM.

and when the new wing of University Hall is completed, the handsome classical rooms are to be adorned with casts of statues and pictures of important archeological subjects.

The Latin department requires four years of preparation for the Freshman Class, the Greek three (though some schools compress this into two years), and work in both languages is required for the first two years of the college course, but after that is entirely elective. A student may, however, if he chooses, pursue both languages, not only throughout the whole four years of the undergraduate course, but for at least three years afterwards in graduate work. For those who have been so unfortunate as to have taken a high school course where Greek is not taught, the University offers the privilege of beginning this study. Diligent students find it quite possible to make up their Greek in this way and still graduate

with their class at the end of four years.

Not a few of the very best students of the University, some of them already graduates of other courses, have availed themselves of this opportunity.

In the required work of Freshman and Sophomore years, the authors mainly read in Greek are Lysias, Herodotus, Homer, Plato, Euripides, Thucydides, and Demosthenes; in the electives and graduate work, Sophocles, Aeschylus, Aristophanes, Plato, Aristotle, Pindar, and Theocritus. In Latin, in the first two years, the chief authors read are Cicero,

Livy, Terence and Horace; in the electives and graduate work, Cicero, Catullus, Pliny, Juvenal, Livy, Tacitus, Quintilian, Plautus, and Lucretius.

Connected with the Greek and Latin is the Department of Classical Philology, meant especially for advanced students, and including the subjects of comparative philology and Sanskrit.

The number of professors and instructors employed in the departments of Greek and Latin is eight. There is a University Fellowship in Greek and one in Latin, and one graduate scholarship assigned to the two departments in common. The number of graduate students in Greek and Latin is eleven.

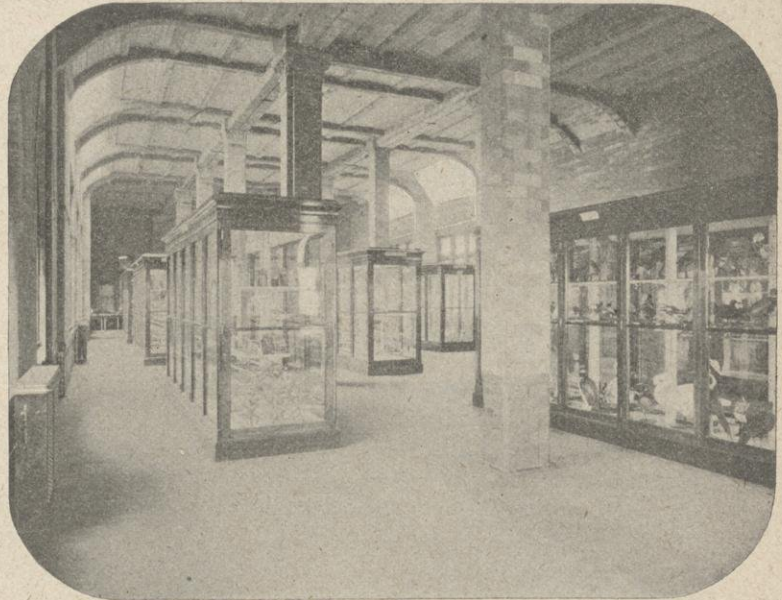
Interest in classical studies may be regarded as on the gain, inasmuch as in the Latin, in the past three years the number of students taking electives has greatly increased; and in Greek in the same period the number in all classes has advanced about 50 per cent., the Freshman class has doubled, and the number of schools in the state that teach Greek is twice that of two years ago. A valuable adjunct of these departments is the Classical Club, which is composed of all the professors, instructors, and graduate students of the two departments, with several professors from other departments, and teachers from the city High School. The Club meets twice a month to read masterpieces of the Greek and Latin literatures. It has greatly contributed to the development of that interest in Greek and Latin which led a Chicago University professor to remark last year, "I declare, I do not know where one could find such a classical atmosphere as in the University of Wisconsin."

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In the German department, the aim of the modern classical course is to enable students to understand modern German authors as well as spoken German, and to use oral and written German in the simple forms of discourse. The study of German philology aims to establish the continuity of development between modern and ancient language and literature. The structure and growth of the German language and the Germanic languages in general, are investigated, and the classical literature of the Middle High German period receives special attention. In the philological seminary the chief aim

is to make the student acquainted with the scientific methods used by the foremost scholars and investigators in this line of work, and to teach him to work independently. So far as possible the German language is used in this work. The *Germanistische Gesellschaft* is a society organized among the professors and students of the department, for the study of Germanic philology. The staff of the department consists of five professors and instructors.

In the department of French also the elementary work aims to give to the student the use of the language for reading and speaking, while the more advanced instruction is devoted to scientific study of the language and literature, where the methods of the sem-



BIOLOGICAL MUSEUM.

inary are used. Both Spanish and Italian are taught in this department, which is equipped with a force of four professors, and instructors.

In Norse and the other Scandinavian languages, four courses are offered by the professor in charge of the department, instruction being given in Norwegian, Danish, Swedish and Old Norse, and in the History of Scandinavian Literature.

The department of Hebrew and Hellenistic Greek offers courses on the Hebrew of the Old and the Greek of the New Testaments, also courses in Arabic and Assyrian. The work of the department is adapted for those students who contemplate entering the ministry.

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### The English Course.

English from its great importance in every line of study is required of all students. The subject is taught under the three heads of English



STUDENTS' OBSERVATORY.



literature, English philology, and rhetoric, the whole subject requiring at present the attention of ten professors and instructors. Freshmen and sophomores in their required work come first into contact with the Department of Rhetoric, where the main object is to teach the student to write English correctly, forcibly, and purely, and, as a means to this end, to analyze the structure of the sentence and the paragraph, and to do such other work as may insure the acquisition of a good style, and the understanding of masterpieces in prose and poetry. The courses of study have just been remodeled to some extent, with a view of giving greater emphasis to English Composition, which has long been a characteristic of the justly famous Harvard training in English.

After the Freshman and Sophomore years all the work in English is elective, embracing, in English literature, a general survey, then Chaucer, the Elizabethan period, the 18th Century, the Romantic movement, the Victorian era, American authors, the drama, the epic, lyric poetry, and culminating in the two graduate seminaries—one on the drama, the other on Coleridge. In English philology, the elements of Anglo-Saxon, Beowulf, history of the English language, etc., are studied, ending in the graduate seminary for English philology. The rhetoric department, too, offers a number of electives for the more thorough study of great masterpieces from the point of view of style and expression, and these have a gratifying attendance of students. Here again the highest work is done in the seminary.

As in the classical departments there is a Club, called the English Club, which meets fortnightly and gives an opportunity for professors and students to meet in an informal manner for the discussion of literary topics. German and French, the work in which subjects was referred to in connection with the classical courses, are given prominence in the English course.

The work of the Civic Historical course is treated above under the School of Economics, Political Science, and History.

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### The General Science Course.

In the studies of the General Science Course, science naturally occupies a leading place, but mathematics, modern languages, history, rhetoric, and political science or economics, are among the studies required. One year each of biology, chemistry, and physics give the student during the first two years of his course a fair grounding in the methods of laboratory science, and prepares him to undertake the more advanced work in science during his junior and senior years. This may be elected in any of the following departments, viz.: astronomy, physics, chemistry, mineralogy, geology, biology, or advanced mathematics.

In astronomy courses are offered in general astronomy, astrophysics, celestial mechanics, etc. The well-equipped observatories with the 15 1-2 inch equatorial telescope, meridian circle, etc., are accessible to careful students, who are sufficiently advanced in the work to use the instruments intelligently.

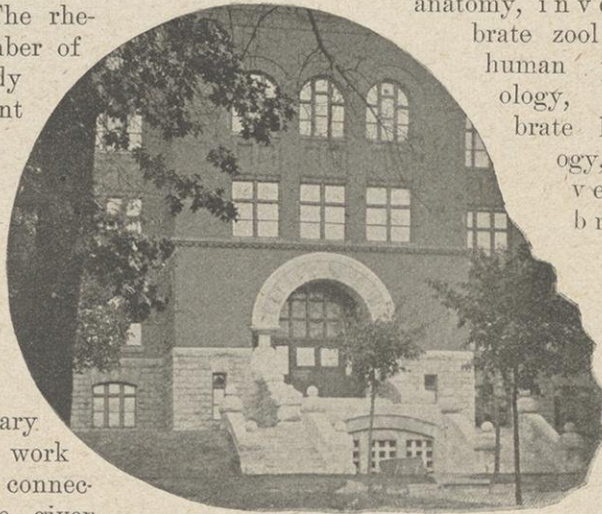
The department of physics is unusually well equipped with apparatus, and has an instructional force of six professors, instructors, and assistants. The fourteen courses offered by the department cover the entire field of general and mathematical physics.

The Physical Club meets weekly for the presentation and discussion of current physical literature.

Besides the general work of chemistry required of all General Science students, the department offers courses in advanced inorganic chemistry, toxicology, water analysis, advanced organic chemistry, physical chemistry, and electro-chemistry. The Chemical Club is composed of professors and advanced students from the chemical department and the School of Pharmacy.

The work in geology and mineralogy covers the wide fields of crystallography, mineralogy, general geology, petrology, paleontology, and economic or applied geology, in all twelve courses. As the professor and the two assistant professors of the department are all officers on the staff of the U. S. Geological Survey, and as the offices of the Lake Superior Division of this Survey and of the State Geological Survey are located in the department, the geological student is kept in touch with the research work of the science.

The biological instruction in the University is given by a staff of seven professors and two instructors. Besides the introductory course in general biology, the department offers in zoology, courses in vertebrate anatomy, invertebrate zoology, human physiology, vertebrate histology, and vertebrate.



PORTAL OF SCIENCE HALL.

and invertebrate embryology. In botany courses are offered on the general morphology of plants, vegetable histology and physiology, bryology, botanical microtechnique, etc. In bacteriology courses are offered both in general and in advanced bacteriology. In biological subjects no less than 25 courses are open to students. The Biological Journal Club meets weekly for reviews of current biological literature, and presentation of original work by professors and students. Students who desire may take the Pre-Medical Course, whose requirements are not different from those of the General Science Course, but in which the electives are selected with reference to medicine.

In the department of mathematics no less than twenty courses are offered covering all the more important departments of mathema-



MONONA'S MIRROR.

tics. The instructional force of the department is a strong one and is composed of six professors and instructors. The opportunities for advanced work in mathematics are unusually good.

Besides the instruction which is given under the course system, students are received in all departments of the University under the group system, which allows of greater concentration in a particular line of work. This system of work is recommended to students of unusual ability, and to those who intend to pursue work in the department after graduation.

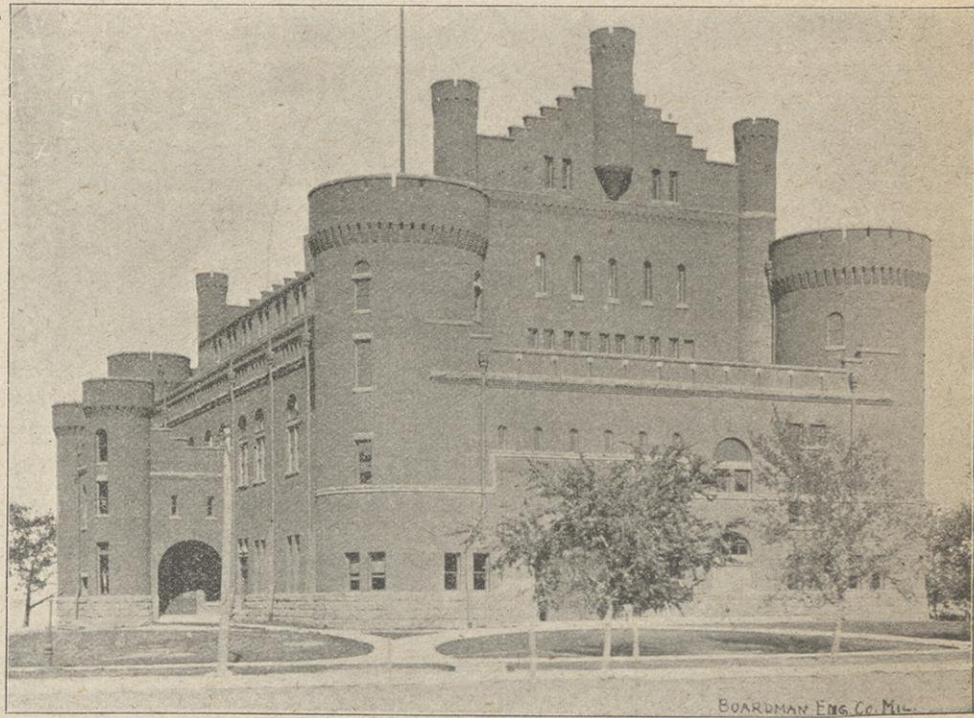
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### The Graduate Department.

The graduate department of the University has 76 students in the College of Letters and Science, and is each year gaining in numbers and importance. It is in this department that the graduate of the University, who has obtained the baccalaureate degree, continues his studies along the line which he has chosen. By the awarding of fellowships and scholarships, by the purchase of special apparatus, and in other ways, the University seeks to encourage the advanced studies of this department. The work leads up to the degrees of Master of Arts, Master of Letters, and Master of Science, and to the highest of all academic degrees, Doctor of Philosophy.

There are annually awarded ten university fellowships of \$400 each, two of which are specifically devoted to Latin and Greek, and ten honorary fellowships. The pharmacy department has three additional fellowships. There are in addition three scholarships, two being in social science.

The head of the graduate department is Dr. Charles Forster Smith, Professor of Greek and Classical Philology. All the privileges of the department are open alike to the graduates of the University of Wisconsin and of other institutions.



UNIVERSITY GYMNASIUM AND ARMORY.



# The College of Mechanics and Engineering.

"For natural beauty of situation, Madison is superior to every other Western city that I have seen."—BAYARD TAYLOR.

## The College of Mechanics and Engineering.

**T**HE UNIVERSITY of Wisconsin is not alone a great university in which students receive the best of modern instruction in science and letters, but it includes great schools in which special courses of instruction lead up to the pursuit of important professions, such as the law, engineering and pharmacy. The College of Engineering will be first described.

**LABORATORIES.** Besides the general physical, chemical, and mineralogical laboratories described on one of the preceding pages, special engineering laboratories, well equipped with all needful apparatus, are provided, including the following: hydraulic, steam, testing, cement, dynamo, electrolysis, metallurgical, and surveying laboratories. There are in addition large drawing rooms for engineering students.

**LIBRARIES.** Pending the erection of a new engineering building, the engineering library is kept in the general University library.

The latter includes over 48,000 volumes and

11,000 pamphlets. In addition, students have free access to the State Historical Library, including 190,000 titles, and the city library of 15,000 volumes.

The Engineering College subscribes to nearly 100 technical periodicals, which are kept in the engineers' reading-room on the ground floor of Science Hall.

### Faculty.

During the past few years a decided tendency to specialize has developed in all professions, and in none perhaps has this tendency been more marked than in Engineering. Indeed, it is now quite fully recognized, that to attain the fullest success, the engineer, while needing a solid general training in fundamental studies, must have special knowledge along some particular lines.

How well the University has provided the necessary faculty for meeting this demand for instruction, will be seen



SCIENCE HALL. CHIMNEY OF HEATING PLANT. NORTH HALL. MAIN HALL. CHEMICAL LABORATORY. MACHINE SHOPS. PUMPING STATION.

BUILDINGS WHERE WORK OF ENGINEERING STUDENTS IS DONE.

from a glance at the following list:

Storm Bull, M. E., Mem. Am. Soc. M. E., Professor of Steam Engineering.

Dugald C. Jackson, C. E., Vice-President Amer. Inst. E. E., Mem. Am. Soc. M. E., Professor of Electrical Engineering.

Forrest R. Jones, M. E., Mem. Am. Soc. M. E., Assoc. Mem. Am. Inst. E. E., Professor of Machine Design.

Charles I. King, Mem. Am. Soc. M. E., Professor of Mechanical Practice.

John E. Davies, A. M., M. D., LL. D., Mem. Am. Soc. C. E., Professor of Electricity and Magnetism and Mathematical Physics.

Frederick E. Turneure, C. E., Assoc. Am. Soc. C. E., Professor of Bridge and Hydraulic Engineering.

Nelson O. Whitney, C. E., Mem. Am. Soc. C. E., Professor of Railway Engineering.

Samuel B. Fortenbaugh, M. E., Mem. Am. Inst. E. E., Assistant Professor of Electrical Engineering.

John G. D. Mack, M. E., Mem. Am. Soc.

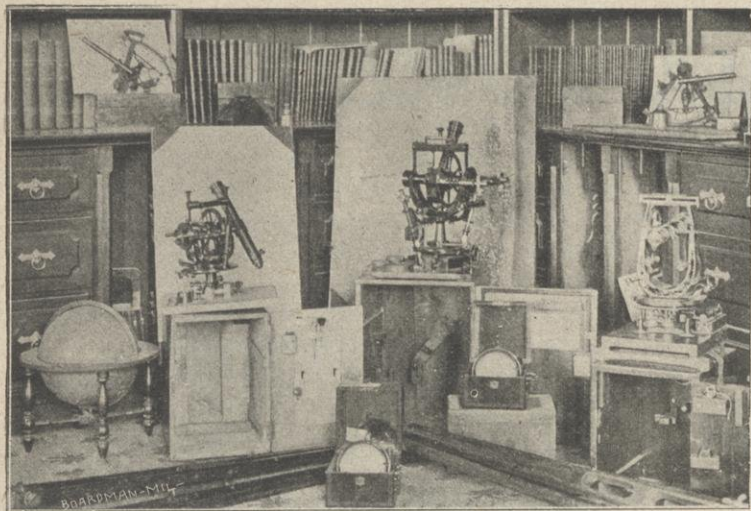


MACHINE SHOPS.

### Equipment.

**BUILDINGS.** The College of Mechanics and Engineering occupies much of the two lower floors and basement of Science Hall, one of the best educational structures in this country. The work in physics, geology, mineralogy, etc., is also carried on here. Shop-work and additional laboratory work is given in a well-equipped building, exclusively devoted to this purpose. The shop building is in the form of a T, 150x155 feet, and two stories high. Equipment sufficient for the instruction at one time of 150 students is provided, including all the necessary apparatus for the various branches in the main machine room, forge, foundry, and pattern rooms, carpenter shops, etc., power being supplied by a 55 H. P. engine. Chemistry, assaying, and metallurgical work, are well provided for in a thoroughly modern chemical laboratory, specially built for the purpose. Instruction in practical astronomy is given at Washburn Observatory, one of the most modern and well equipped buildings of its kind in this country. Languages and mathematical studies are pursued in the literary halls of the University, and described in a previous chapter. The laboratories for graduate students are the same as those for undergraduates.





GEODETIC INSTRUMENTS OF THE OBSERVATORY.

M. E., Assistant Professor of Machine Design.

Edward R. Maurer, B. C. E., Assistant Professor of Pure and Applied Mechanics.

Arthur W. Richter, M. E., Mem. Am. Soc. M. E., Assistant Professor of Experimental Engineering.

Leonard S. Smith, C. E., Assoc. Mem. Am. Soc. C. E., Assistant Professor of Topographic Engineering.

Instructors: Walter Alexander, B. S.; Charles F. Burgess, B. S.; W. H. Kratsch, B. S.; M. C. Beebe, B. S.

Lack of space forbids more than a general statement regarding the professional experience of this faculty, but in general it may be said, that before engaging on instructional work, all professors have had practical experience, varying from three to thirteen years, in professional positions of responsibility along the line of their teaching. It is confidently believed that this experience adds corresponding efficiency to the instruction given.



#### Special Lectures in Engineering.

To supplement the regular courses of instruction, it is the practice of the College of Engineering to invite engineers of high standing to deliver one or more lectures each, on various professional subjects. These lectures, numbering ten to fifteen per year, are purposely made semi-popular. They are usually well illustrated, and are readily comprehended and enjoyed by all classes.

By this contact with engineers in active practice, students gain fresh enthusiasm and impulse for their work.

The wide scope of the subjects represented and the high standing of the men is well illustrated by the following partial list of those who have delivered lectures during the past three or four years:

Alexander Graham Bell, Inventor of the Telephone, Lecturer on Radiophony; L. F. Loree, General Manager Pennsylvania Lines, Emergencies in Railroad Operation; R. W. Hunt, Consulting Engineer, The Manufacture of Steel; Isham Randolph, Chief Engineer, Chicago Sanitary District, The Chicago Drainage Canal; R. H. Thurston, Director

of Sibley College, Cornell University, The Development of the Steam Engine; Elisha Gray, Inventor of the Telautograph, Lecturer on the Telautograph; Octave Chanute, Consulting Engineer, Lecturer on Aerial Navigation.

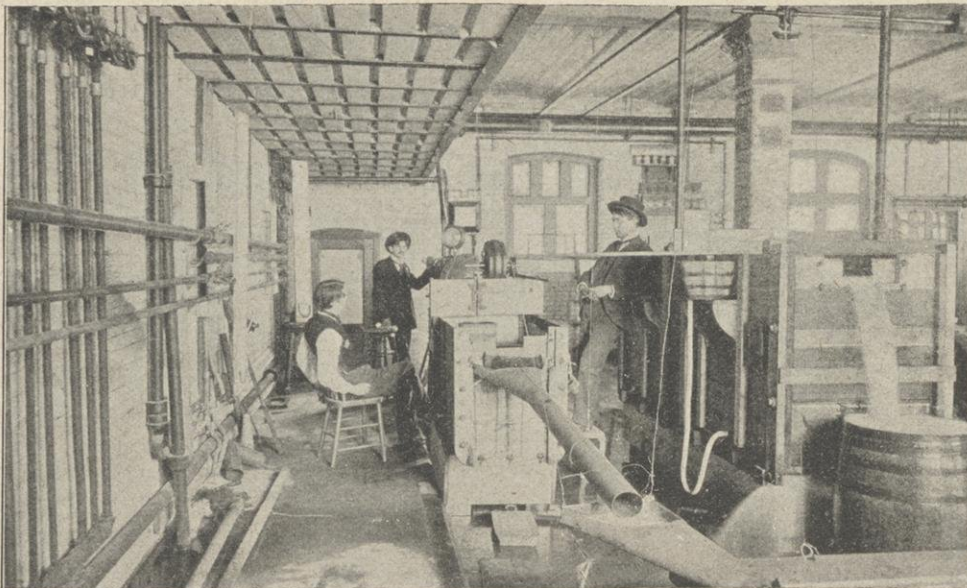


#### Engineering Publications.

**E**NGINEERING BULLETINS. By a wise provision of the legislature, the results of especially valuable original investigations made at the University and elsewhere, by persons connected with the University, are published by the state in the form of bulletins. In

the engineering series there have so far been published twelve bulletins on the following subjects:

Track, The Steel Construction of Buildings, Practical Hints on Dynamo Design, The Evolution of a Switch Board, Increased Accuracy in Stadia Measurements, Railway Signaling, Emergencies in Railroad Work, Electrical Engineering in Modern Central



HYDRAULIC LABORATORY.

Stations, The Problem of Economic Heating, Lighting and Power Distribution, Topographic Surveys, their Methods and Value, Complete Tests of Modern American Transformers, A Comparative Test of Steam Injectors.



**T**HE WISCONSIN ENGINEER is the title of a quarterly magazine published by the students of the College of Mechanics and Engineering. From the very first number it has met with a well merited success, as is indicated by the many kind words from the technical press. One of its most valuable features, but one requiring an immense amount of time and labor, has been the publication of a very complete and well arranged index of current engineering literature of

about 150 American and European periodicals. Besides this index each number contains abstracts of specially meritorious theses, contributed articles by engineers in practice, alumni notes, and editorial matter. The numbers have been well illustrated. The student editors and managers deserve much praise for the able manner in which they have upheld the reputation of Wisconsin.

Members of the engineering faculty are authors of the following recent standard textbooks:

Electro-Magnetism and the Construction of Dynamos, Alternating Currents and Alternating Current Machinery, by Prof. D. C. Jackson, C. E.

Theory and Practice of Modern Framed Structures, by Prof. F. E. Turneaure, C. E.

Machine Design, also Notes on Steel and Iron, by Prof. F. R. Jones, M. E.

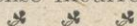


#### Engineering Inspection Trips.

For the purpose of illustrating the work of the class room and of bringing the student into contact with the commercial side of the subjects studied, inspection trips are regularly made to Chicago, Milwaukee, and other cities, in which various engineering establishments and important works are visited.

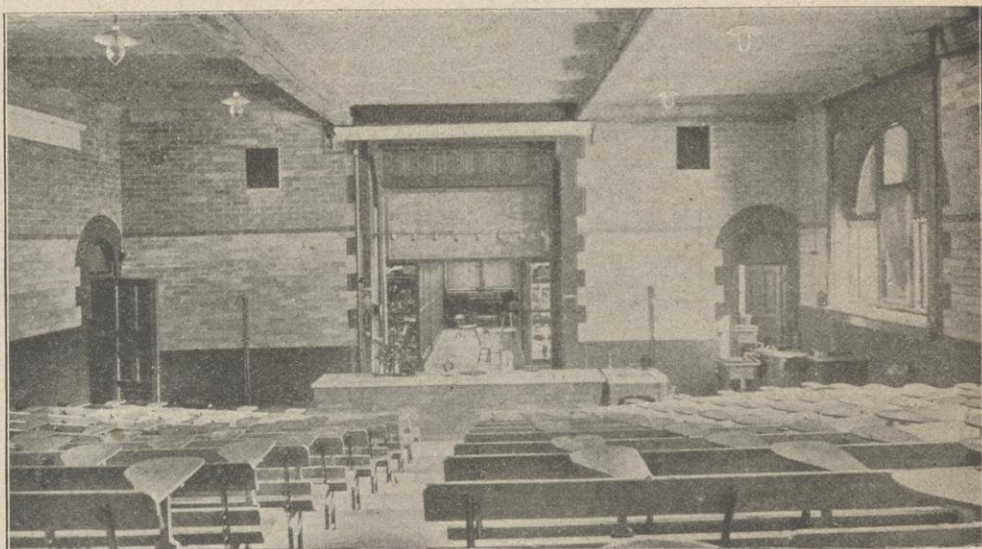
Each party is under the direction of one or more professors who conduct them to such places as best illustrate the particular subjects they teach. Every means of aiding the purpose of the trip is most courteously extended by industrial establishments of all kinds.

Low railroad rates are obtained for the parties, and the necessary expenses are within fifteen dollars. While a student is not required to take these trips, he is strongly advised to do so, as such opportunities are seldom available to any but students, and because it is believed that he is many times repaid for the expense incurred.



#### U. W. Engineers' Club.

The engineering students have not failed to recognize the benefits to be derived from membership in literary societies, the first society being organized as early as 1886. In 1894 a new society was organized by engineering students, and since that time an annual joint debate has been held between the rival societies, thereby greatly stimulating the



LECTURE ROOM OF PHYSICS.



work of both. The regular work of these societies has consisted of debates and papers on engineering subjects, together with reviews of current engineering literature, thereby supplementing to some extent the work of the class-room. Occasional lectures are given by members of the faculty.

### Courses of Study.

The College of Mechanics and Engineering offers four systematic courses, as follows:

A general course in Civil Engineering,

A course in Municipal and Sanitary Engineering,

A course in Mechanical Engineering,

A course in Electrical Engineering.

Electives in Metallurgical Engineering are also offered for advanced work in Geology, Mineralogy, Commercial Assaying, and Chemistry, and the general engineering course in metallurgy, treatment of ores, electro-metallurgy, and mining surveying.

### Civil Engineering.

Because of a common misunderstanding among those not technically informed regarding the actual domain of civil engineering, a brief statement regarding the matter may be of interest. As a result of a loose habit among surveyors calling themselves civil engineers, the belief has grown up that surveying and civil engineering are synonymous terms. Such is not the fact. Surveying in its various forms constitutes only one of the many fields of civil engineering, so that while many civil engineers are surveyors as well, it not infrequently happens that many surveyors have no technical knowledge of engineering aside from surveying.

That the field of civil engineering is a very broad one, and one likely to prove tempting to a young man desiring to make his life useful to himself and others, will be better appreciated when we consider the many and various lines of activity embraced by it, to-wit: 1, railroad engineering, including preliminary and location surveys, construction of roadbed, buildings and yards, operation and maintenance of way; 2, river and harbor improvements and canal construction; 3, structural engineering, including the design and construction of iron and steel bridges and buildings, and masonry structures, such as dams, retaining wall, piers; 4, topographic engineering, including land, city, mine, topographic, hydrographic, and geodetic surveys; 5, municipal and sanitary engineering, including: (a), the supply, collection, and storage of water, and the design of water-works, (b), the design and construction of sewerage systems and sewage disposal plants,

(c), the construction and maintenance of city pavements and roads.

That there is a genuine demand for engineers in the fields indicated above is abundantly proved by the record of our civil engineering graduates.

The University's graduates in civil engineering of the past twenty years are now located in twenty-one states of the Union, and in several foreign countries. Of those whose names are recorded in a recent alumni cata-

Engaged in other industries, 8 per cent.

Deceased and unaccounted for, 7 per cent.

The fact that only 8 per cent. of all our civil engineering graduates for twenty years have found it wise to leave their chosen profession, is a very significant one and indicates well the character of their training.

To the young man about to choose a profession it is also always of considerable interest to know how readily an opening can be found in his chosen line of work, after he has completed his technical education. Wisconsin's graduates in civil engineering have been singularly fortunate in this respect; indeed, even the hard times of the past three years have not prevented them from following their special calling.

Almost without exception graduates, during this time, have found employment within a month of graduation, a large proportion of each class having accepted positions even before Commencement.

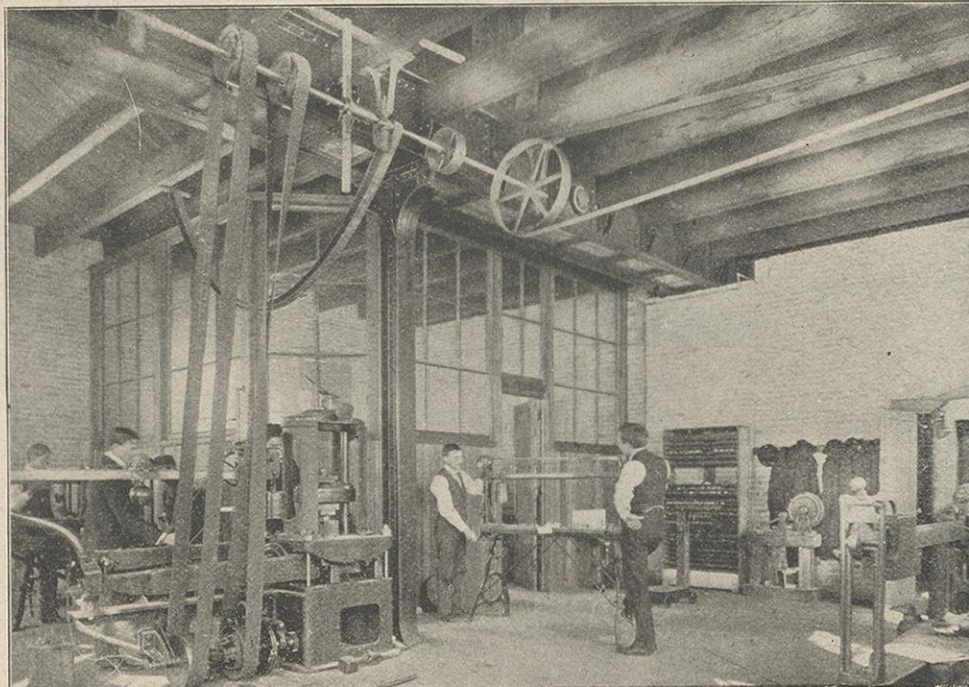
**RAILROAD ENGINEERING.** The enormous development during the last quarter of a century in railroads, in their equipment, safety devices, methods of handling and transporting freight, and in the vast expenditures made in

the making of new and the revision of old locations, in the improvement of roadbed and track, and in the building of great terminals; opens up a wide field, and at the same time requires that the civil engineering graduate of today be well informed, both in the historical development, and in the latest accepted theory and practice of our best modern railroad companies. These are the aims of the various courses in railroad engineering, given to the civil engineering students during the junior and senior years.

Beginning with the course in surveys, the class chooses a stretch of country several miles in length, over which the necessary lines are run and surveys made sufficient to properly locate a final line ready for construction. The various problems involved in location in all varieties of topographical conditions, are at the same time studied in class. Next the methods involved in the construction of such a line, are followed in the draughting room and in the field, as fully as can be done without actual construction.

Following the opening of the line for operation, the numerous problems and methods involved in

maintaining and operating railroads, including interlocking and signaling, design of various standards, and modern freight and passenger yards, are studied in class and draughting room, and by inspection trips. Lastly, the economic problems involved in the whole subject of railroads from the in-



TESTING LABORATORY.

logue, ninety-two per cent. are actively following their chosen profession, a much larger percentage than is usual in professional life. Other interesting statistics concerning our alumni in civil engineering appear in the following table:

#### RECORD OF GRADUATES IN CIVIL ENGINEERING SINCE 1878.

Professors and teachers of civil engineering, 7 per cent.

Chief engineers and superintendents, 15 per cent.



SURVEYING PARTY.

U. S. assistant engineers, draftsmen, etc., 26 per cent.

Railroad engineers—chief and assistant engineers and assistants, 14 per cent.

Bridge engineers, 10 per cent.

City engineers, 7 per cent.

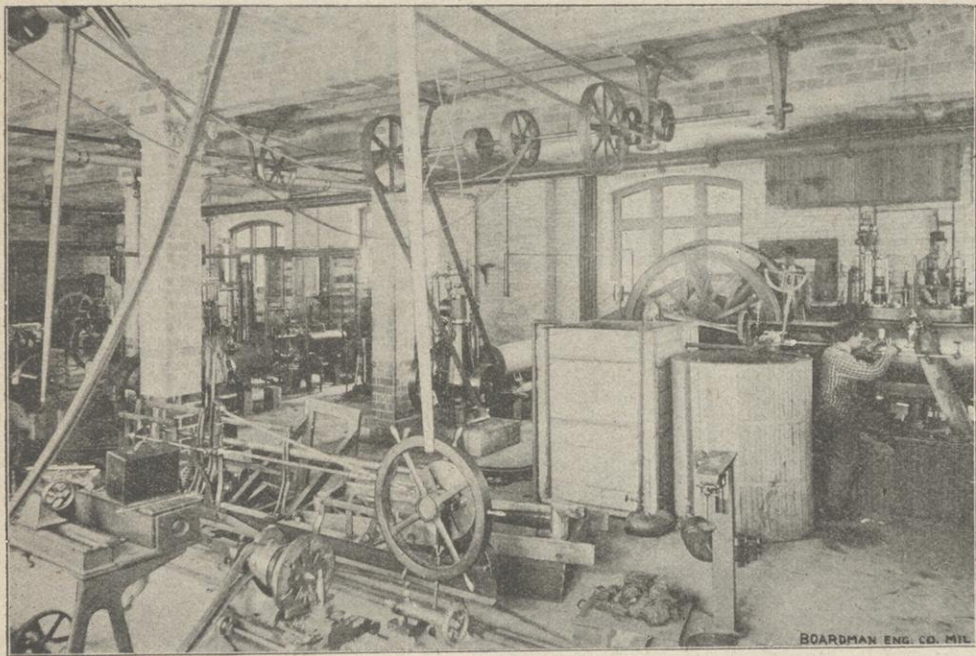
Topographical engineers, 6 per cent.



ception of the scheme to the operation, are studied in class.

Other branches of the general subject of transportation treated in the course are the construction of municipal railways, canals, river and harbor improvement, and ocean navigation. The subject of roads and pavements also receives proper consideration.

**MUNICIPAL AND SANITARY ENGINEERING.** This is a special branch of Civil Engineering, and is a direct result of our



STEAM LABORATORY.

modern methods of living. The enormous growth of our cities gives rise to problems connected with the disposal of wastes and the procuring of pure water supplies, the proper solution of which taxes the ingenuity of the best sanitary engineers.

This country has been behind others in these sanitary questions, but we are waking up to the importance of the subject, as is evidenced by the many improvements contemplated by our large cities. There is a vast amount of work to be done along this line, and herein lies one of the most promising fields for the young engineer.

To meet the demand of the time, the University has, during the past year, established an elective course in Municipal and Sanitary Engineering, which differs from the regular Civil Engineering course by requiring a course in bacteriology, and additional work in chemistry and in the designing of water-works and sewerage systems. It is believed that the course offers good training for those who expect to engage in this line of work.

**BRIDGE ENGINEERING.** When the first bridges were built on the New York Central Railroad, some 40 years ago, no one could tell whether a bridge would stand or fall except by actual tests on large models, and it was with great difficulty that the officials of the road could be persuaded to adopt iron structures. The day has gone by when such tests are a necessity, and bridge construction has to a large degree become an exact science, the principles and practice of which are taught in all of our technical schools.

A branch of the subject, however, in which almost no advance has yet been made, is that of the effect of trains on bridges when crossing at high speeds, and the lack of knowledge in this direction is keenly felt by all bridge engineers. This subject is now undergoing investigation at the University, a complete

set of apparatus for this purpose having been recently purchased, and instruction in this line of work is regularly given in the course in Bridge Engineering. In the senior year the students make observations on bridges in actual service, getting the stresses in the various members during the passage of trains, and determining the speed of the trains. From these data the student then computes the theoretical stresses and compares with the actual. In this way as in no other, does he get a clear conception of the action of moving loads. It is believed that this is the only institution where systematic work in this important field is undertaken and where experiments are regularly made by the students.

The general course in bridges, which extends throughout the junior and senior years, is unusually strong, and is so recognized by the several large bridge works, in which many of our graduates have begun their professional careers.

**STUDENT'S GEODETIC SURVEY.** A good example of the general policy of uniting theoretical with practical training is found in the Student's Survey of the Lake Region of Southern Wisconsin. This work contemplates a complete topographic and hydrographic survey of the above region, controlled, of course, by a carefully planned and accurately executed triangulation. The past year the survey and map of Lake Mendota was nearly completed, and the triangulation was connected with the primary triangulation of the U. S. Coast and Geodetic Survey. The probable error of the mean of six measurements of the 3000 feet base line was 1:300,000, or one hundredth of a foot.

About four thousand soundings in Lake Mendota have been made by students, points within one-half mile of the shore being located by the transit and stadia method, while more distant soundings are located either by transit intersections, or by chaining on the ice in winter.

Since 1895 this work has been carried on by the junior and senior students in Civil Engineering. In the future the field work will be prosecuted by the sophomores and juniors, while the seniors will make the final geographical computation and construct maps of the region.

**THE HYDRAULIC LABORATORY.** The hydraulic, like other laboratories, is used largely to demonstrate principles taught in

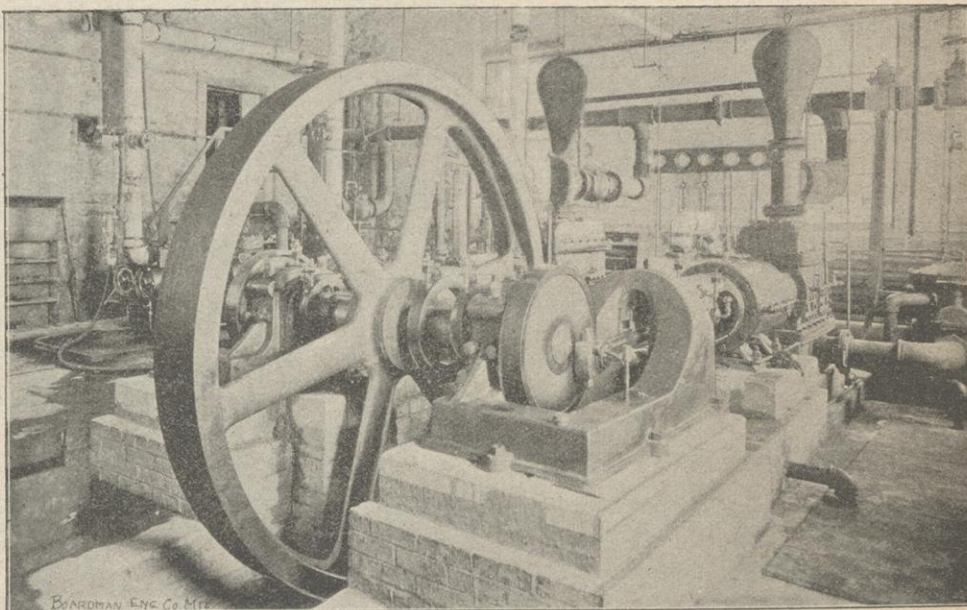
the class-room. It is used further for teaching the students the use of apparatus employed in the various sorts of hydraulic measurements, and to acquaint him with hydraulic appliances and machines by their actual use. The measurement of the flow of water in small channels and through pipes, accuracy tests of commercial water-meters, and efficiency tests of water-motors and pumps, are samples of the tasks assigned students. Still another use of the laboratory is for research work, and this laboratory offers good facilities for adding to the general store of the knowledge of hydraulics. The hydraulic laboratory has recently been enriched by the installation of a large amount of new apparatus.

**THE TESTING LABORATORY.** A knowledge of the properties of materials of construction is of great importance to all engineers, and for acquiring this knowledge it is most desirable that the student shall study the materials by actual test. Because of the recent growth and the many changes constantly going on in the manufacture of all kinds of engineering materials, the study offers a very wide field for original research and investigation.

The testing laboratory of the University offers excellent facilities for this class of work, various testing machines and appliances of the most approved pattern being supplied. Instruction in this laboratory is given to all engineering students, and includes a series of tests on the more important materials, such as iron, steel, wood, stone, cement, etc. At the end of the course each student is required to make a series of independent tests on some one of the materials used in engineering construction.

### Mechanical Engineering.

The course in Mechanical Engineering has been laid out with the view of furnishing its graduates with a solid foundation, upon which they may build their professional careers. The variety of work embraced by mechanical engineering makes it impossible for a professional school to give instruction in all the branches of work in which the graduate may find employment. The most important point is gained, however, when the student is furnished with a general training,



INTERIOR OF PUMPING STATION.

with which, by further study and experience, he may gain the mastery of any special line of work in which he may later be engaged. It is quite possible that the graduate will first find employment as a machinist in a shop. His experience in the machine shop of the



University will no doubt help him a great deal in such a position. But it must be borne in mind that the instruction in shop-work has not been given with the end in view of making him a machinist. This can be done very much better, and at a less expense, in an ordinary machine-shop. The object of the instruction given at the University is to teach shop methods as an auxiliary to the subject of machine design. The latter subject is in itself so broad that only special lines can be covered. These lines, however, have

ten horse power vertical steam engine drives the triple ammonia compressor. The large brine tank, containing 1500 feet of electrically welded one-inch pipe, is also provided with a steam coil, so that work with the machine may be carried on continuously, even if ice is not made. The plant is arranged in such a manner that the work of both the steam engine and ammonia compressor may be measured, and the steam consumed by the engine and by the coil in the brine tank may be weighed separately. By the aid of this plant it is hoped that a great deal of experimental knowledge may be gained which may be of benefit to manufacturers of refrigerating machines. It certainly will furnish the very best means of illustrating the principles of thermodynamics taught in the classrooms. A ten horse-power gasoline engine has also just been added to the equipment of the laboratory. This engine has been built from the patterns made by graduates of the class of 1896.

used to illustrate the motions, and rough models are sometimes developed before the class.

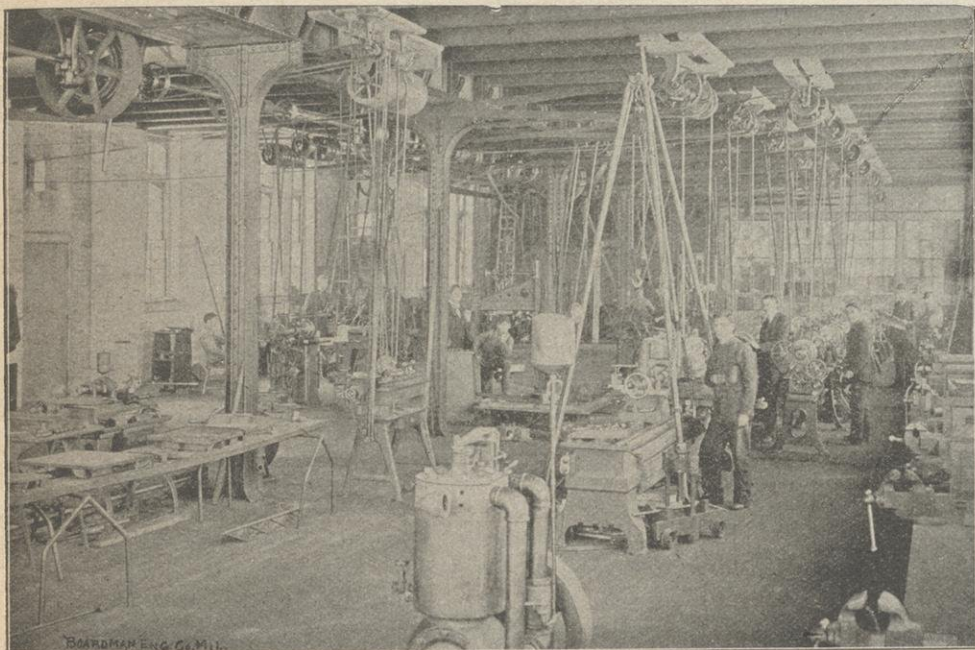
Throughout the whole course in machine designing, an attempt is made to combine theory and practice, so that the student shall not go to the extreme in either direction, but gain a correct idea of how the two should be combined, and especially how carefully theory must be applied in designing machinery.

**SHOP WORK.** Shop work forms a very important part of the Mechanical and Electrical courses, systematic instruction being given throughout the entire four years. Civil Engineering students receive instruction in the elements of the work during the first year only. Realizing that the knowledge which comes from the thoughtful use of tools in turning, forging, chipping, and filing, is quite as important in the student's future work as is his mastery of mathematics, a systematic effort is made to cultivate a high degree of skill in the use of tools.

How successful this department has been in its instruction is attested by the successful machinery designed and constructed by the students, including a 1,000,000 gallon pumping engine, which supplies the state Capitol and the University buildings with water, a steam hammer at present in use in the forge room, a compound marine engine, and many large models and engines of various types now in use in the steam laboratory.

### Electrical Engineering.

The commonly expressed belief that applied electricity is in its "infancy" is one that is widely held by persons not technically informed on electrical matters, and one which is fully upheld by the facts. There is no question that the industrial applications of electricity will continue to expand enormously, as they have done during the past, and new uses for electricity will be found, so that the future possibilities alone would warrant a student to enter upon that field for his life work. That the field is a very wide



MACHINE ROOM IN SHOP.

been selected in such a way as to furnish the best foundation for the future work of the student. This principle has been kept in view in the selection of all the professional subjects.

A certain amount of time is also given to a fundamental study of electrical engineering, because it so frequently happens that the mechanical engineer is required to meet and solve problems in electrical engineering. On the other hand a knowledge of mechanical engineering has been found requisite to the electrical engineer as well.

It can not be doubted that the course in mechanical engineering, as announced in the catalogue of the University, is built upon the correct principle. The large number of graduates of this course who hold responsible positions in the profession, seems to warrant such a belief. This belief is further evidenced by the following tabulation of the present positions held by graduates in the department of Mechanical Engineering:

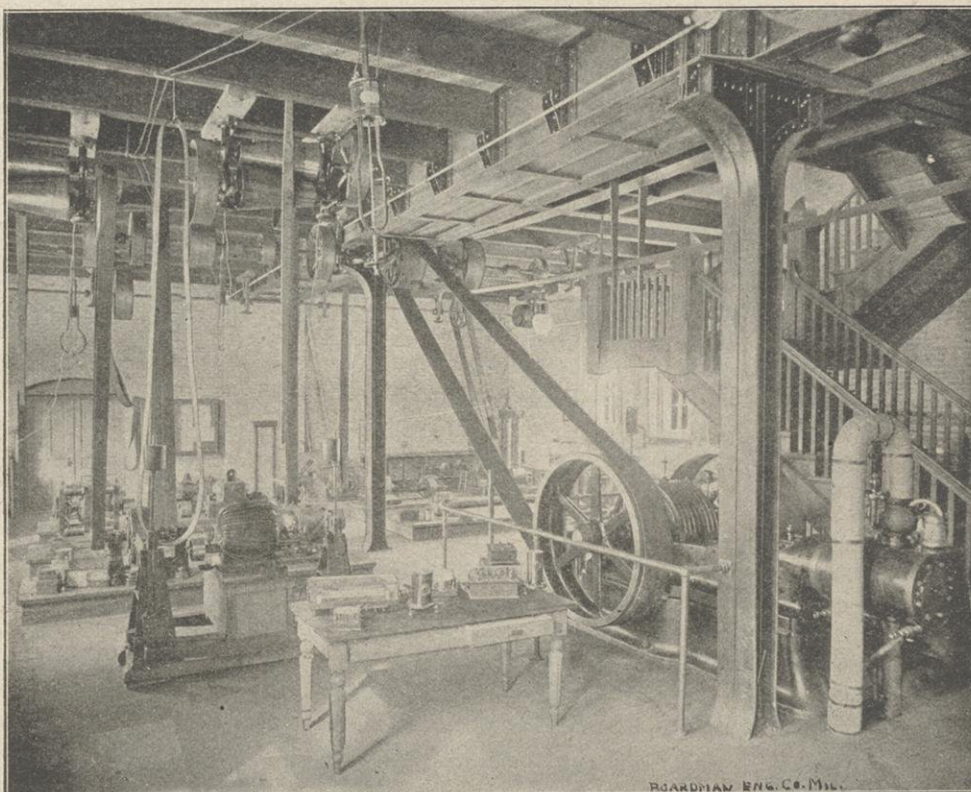
Professors and teachers of Mechanical Engineering, 5 per cent.  
Managers, superintendents and master mechanics, 13 per cent.  
Manufacturers, 15 per cent.  
Designers and draftsmen, 13 per cent.  
General mechanical engineering practice, 13 per cent.  
Electrical and civil engineers, 12 per cent.  
Machinists, 4 per cent.  
Occupied in other industries, 13 per cent.  
Deceased and unaccounted for, 12 per cent.

**THE STEAM LABORATORY.** The Steam Engineering Laboratory is located in the basement of Science Hall. Its equipment is quite complete, so that thorough work of investigation may be carried on in various directions. The equipment has just been increased by the addition of a five ton refrigerating plant, the only refrigerating plant especially arranged for experimental work in any American technical school. A

**MACHINE DESIGN.** In Machine Designing the aim is to give such instruction that the student shall become familiar with both the principles of mechanisms and the modern forms of machines, as they have been developed in practice. Both of these branches are of vital importance to the engineer, and especially to the designer, since principles must be understood in order to prevent useless waste of materials and incorrect forms, while the machines, which have been evolved by constant trial and practice, indicate, along the lines of the principles, the best forms to be used. The whole must take into account economy of construction and operation, durability, and utility.

Following out this plan, the instruction begins with a course in drawing from actual working machines of the most modern design, certain machinery being placed at the service of the student, and used for no other purpose, so that it can be taken apart and fully examined at his convenience.

Next in order comes a study of the motions of mechanisms, or "Kinematics," in which attention is paid only to the motions of the various parts of a machine, no attention being given to the strength and proportions of the members. A collection of models, showing the principal mechanisms, is



DYNAMO LABORATORY.

and interesting one will be seen from the following detailed statement:

1st. Designing:—There is probably no other branch of engineering in which the na-



chinery used is subject to the continual improvements and changes that occur in electrical work. To keep up with these improvements, and to meet the requirements of new applications of electricity, calls for the services of the educated electrical engineer. He must have a thorough knowledge of the laws of electricity, the properties of materials, and of drafting.

2nd. Installing and Contracting: The erection of plants and lines for electric lighting, the transmission of power over great distances, electric railways, the telephone, and the telegraph, require a trained electrical knowledge, a familiarity with buildings, foundations and building materials, and a business training, which will enable the engineer to look after the business side of an enterprise.

3rd: Operation of plants. The demand for engineers in such work is steadily increasing and it is being recognized more and more that a combination of engineering skill and business ability is essential for the best operation of electric plants.

4th. Consulting. Many electrical plants are successfully operated by men who may not be truly called electrical engineers; and in order to keep abreast with the times, and make additions and improvements, the temporary service of a skilled and educated engi-

in this course. The young men who have completed the electrical course have become widely scattered over the country. Their posts include many positions of large interests and responsibility, as is shown by the following table which gives their distribution in the different lines of industrial work:

Professors and teachers of electrical engineering and science, 15 per cent.

Chief engineers, superintendents, contractors, 13 per cent.

Assistant engineers, designers, and draughtsmen, 43 per cent.

Occupied in other industries, 18 per cent.

Graduate students, 3 per cent.

Deceased and unaccounted for, 8 per cent.

These figures clearly indicate the energy which our graduates have shown in plunging headlong into active engineering work, and considering the fact that it is only five years ago that the first class graduated, the number of positions of prominence and responsibility which they hold, show that they have been successful to a marked degree.

**THE TRAINING AT THE UNIVERSITY.** The extensive field of electrical engineering is one of the most attractive and interesting that the student can enter upon, and the

**DYNAMO ROOM.** The continuous-current dynamo room is a model of its kind. It contains no less than twenty dynamos and motors of different types, all of them of considerable capacity and specially arranged for student experiment. These represent the usual commercial types and some experimental types designed by students. All the better commercial and fine scientific instruments, which are needed in measurements in electro-magnetism and continuous-current experiments, are supplied by the department for the use of its students.

**ELECTROLYSIS LABORATORY.** During the process of developing the dynamo room, equipment in other branches has not been overlooked, and the importance which electricity plays in the field of commercial metallurgy and chemistry has led to the equipment of a laboratory specially for experimental study of the theoretical and commercial aspects of these subjects.

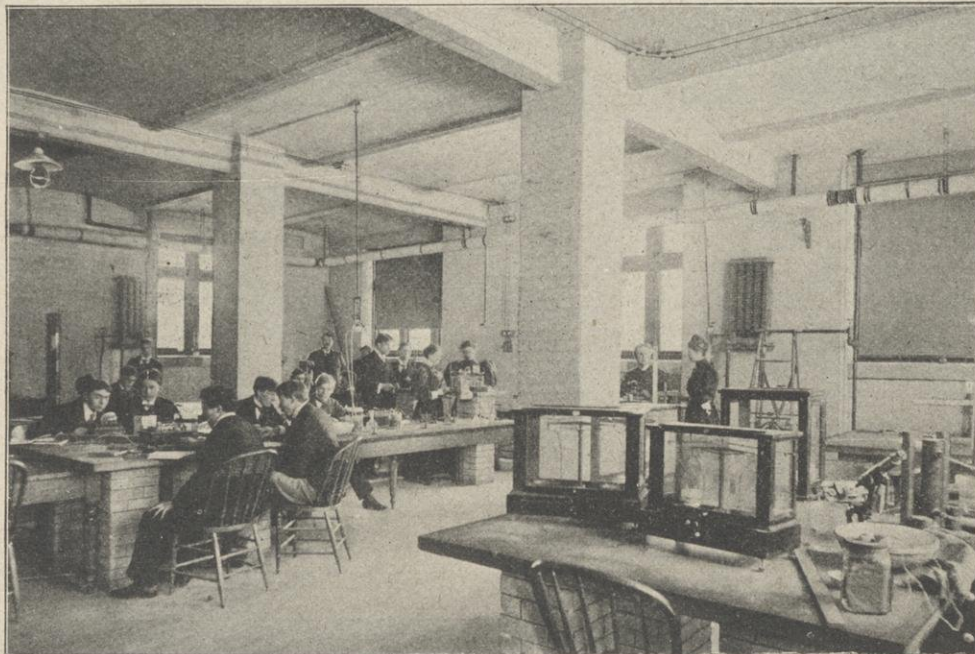
The deposition of metals by the electric current for electroplating, electrotyping, and refining purposes is carried on, and the opportunities for a study of existing processes and experimenting on improvements are here offered.

In addition to tanks and equipment for electrolysis by the wet method, several electric furnaces are located in the laboratory,—one of them being after the design of Moissan, the great Frenchman, who has succeeded in producing artificial diamonds in the intense heat of the electric furnace.

It is interesting to note that this laboratory for electrolysis is probably the first thorough equipment of the kind that has been installed in an American engineering school.

**AN ALTERNATING-CURRENT LABORATORY.** Equipment has also been gathered together, which is specially useful in illustrating the phenomena of alternating currents and the peculiarities of alternating-current machinery. The outfit includes six alternating-current dynamos and motors of different types. The study of alternating-current phenomena and the measurement of alternating currents, requires a different class of instruments from those used in the continuous-current work, and a supply of these special instruments is also furnished.

**INSPIRING ORIGINAL WORK.** A portion of the advanced work of the students consists in planning and carrying out some independent investigation, such as commercial tests of lighting and power plants, testing of electrical machinery, and experimental research in various lines. The results obtained constitute the thesis required for graduation. The work which a student is thus led to carry on in applied electricity frequently brings him to investigate new and important developments upon his own responsibility, and the results of the investigations often bring to light new facts of real and permanent value. Some of this original work done by advanced students of the department has attracted world-wide interest, but limitations of space make it impossible to give a list of the results. We must be content to say that the investigations have set at rest long standing differences of opinion in regard to the advantages and disadvantages of various forms of apparatus, and even of some methods of engineering practice. The magnificent inspiration which lies in such work must be remembered when it comes to making a choice of college.



ONE OF THE LABORATORIES OF PHYSICS.

neer is required. This work is performed by the consulting electrical engineer.

5th. Mining. This embraces the operation of electrical machinery for mining operations.

6th. Electro-metallurgy and electro-chemistry, in which electricity is used in the manufacture of chemicals, separation of minerals from ores, and refining of metals. This is one of the newest as well as a most promising field, and the remarkable possibilities in this line of work would be hard to estimate.

While a large number of men who have attained distinction in electrical engineering have not had a college training, it is fully proven that the one who has a technical training added to that knowledge which is only obtained through practice, has a very great advantage over the one who begins with practical work, and has to acquire the theoretical part as best he can.

**OUR GRADUATES.** The course in applied electricity, or electrical engineering, was organized at the University in 1891, and the first class that completed the course graduated in 1893, when eight students were given their degree. At the subsequent Commencements fifty-four degrees have been granted

methods of teaching used here, are intended to enlarge the vision, increase the fertility, and strengthen the resources of the student as a man of thought and of action. The work of the electrical student lacks much of the spectacular which may be attached to electrical studies, but it loses little of its real interest by omitting that which is showy but without depth or value.

The arrangement of student's work has been divided among the great divisions of electrical engineering, and a teacher is supplied for each of these divisions, as follows:

First, electro-magnetism and its application to dynamos and other electrical machinery; second, electro-chemistry and electro-metallurgy with their applications; third, alternating currents of electricity and alternating current machinery.

The student takes up study in these divisions in the order in which they are named, and finally enters upon the study of their direct application in electric-lighting plants, plants for the electrical transmission of power, electric railways, the application of electricity in mining and the treatment of metals, telephony, and telegraphy. For the teaching of each subject an excellently equipped laboratory is provided.



# Other Colleges and Schools of the University.

"Madison has not a street but is a vista."—SIR EDWIN ARNOLD.

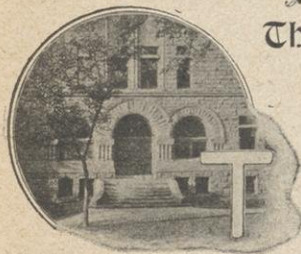


Lake Mendota. Chemical Laboratory. Machine Shops. Roof of Gymnasium. Heating Plant. Science Hall. School of Pharmacy. Dome of Capitol. New Library (Building). Library Hall. Law Building. Lake Monona in the Distance. South, or Agricultural Hall.

UPPER CAMPUS FROM UNIVERSITY HALL.

**B**ESIDES the College of Mechanics and Engineering the professional and technical colleges and schools of the University include the College of Law, the School of Pharmacy, the School of Music, and the School of Agriculture. A separate building forms the home of each of these schools. The new and beautiful brown stone structure on the south side of the University upper campus is the home of the College of Law, while the Pharmacy School occupies the greater part of North Hall on the opposite side of the campus. The School of Music has rooms in Ladies' Hall. The School of Agriculture makes use of several buildings—South or Agricultural Hall, Hiram Smith Hall or the Dairy School, and the Horticulture-physics Building, besides the group of farm buildings.

## The College of Law.



HE license to practice as lawyers in the courts

is now much more difficult to obtain than formerly. Until within a few years it was an easy matter to gain admission to the bar. Now the door to the legal profession "swings on reluctant hinges," for in our complex civilization the science of the law has become more intricate and is applied to an infinite variety of relations and affairs unknown to the world fifty years ago, and a high degree of legal training and an extensive knowledge are now absolutely essential to the successful practitioner.

**ADVANTAGES OF LAW SCHOOLS.**—It is the almost unanimous opinion of lawyers that in the law school the student can best obtain the elementary instruction to fit himself for the practice of the law. And so general is the recognition of this fact that law

schools have increased greatly in number, and their attendance has multiplied many fold. The excellence of American schools of law has challenged the attention and admiration of eminent jurists of the other continent.

expression of thought; are among the most important. Says Judge Cooley, eminent as law teacher, law writer, and judge, "There is an advantage in the law school in the fact that the *esprit du corps* is cultivated among those who gather there, which tends to a high code of professional ethics and at the same time to a more careful study of the law as a science. . . . The students are enabled to form themselves into clubs for the discussion of moot cases. Such clubs well managed afford the best possible school for the cultivation of forensic eloquence."

By association, study, discussion, and friendly controversy with his fellows, the student acquires self-reliance, and command of his resources. His mental faculties are quickened. As Daniel Webster remarked, his adversaries "put him up to all he knows." He is wisely guided in his studies and his time is not wasted in misdirected labor. While mastering the substantive

law, he is at the same time instructed in the principles of procedure and methods of conducting legal business. He is trained to close logical argument, to the careful prepara-



HOME OF THE COLLEGE OF LAW.

The student who engages in solitary study or law office reading is quite sure to run over the books hastily and superficially, and to gain but an imperfect understanding of what he reads.

The advantages of the law school are many: the acquiring of right methods of study; their pursuit in natural order; frequent examinations to fix the principles well in mind; the acquiring of precision of statement and ready



Ladies' Hall. Library Hall. Law Building. South Hall. SOUTH SIDE OF THE UPPER CAMPUS FROM GYMNASIUM.





LAW BUILDING.

tion of briefs, and to the painstaking investigation of legal questions. Having access to large libraries he learns how and where to find the law and the best authority.

**WISCONSIN'S COLLEGE OF LAW.**—The law department of the University of Wisconsin was established in 1868, opening with twelve students. Since that time 1192 graduates have received its diploma. From the first the school has maintained a high standing for practical and useful instruction. Many judges, state and federal, in Wisconsin and elsewhere, have borne testimony that the graduates of this school usually acquit themselves exceptionally well at the bar. Scattered widely, they are found in practice in nearly every state. They have held or now hold important places of public trust in the United States government and in the states from New York to California.

Of the 1192 graduates of the college, 61 have been chosen as judges of courts of record; 118 have been district or state attorneys; 86 city attorneys; and some of the number have been or now are occupants of every office from United States senator and member of congress, down through the several grades of federal and state offices.

**THE LAW BUILDING.**—One of the most elegant of the new edifices on the grounds of the University is the Law Building. This structure of Superior sandstone, heated by steam, lighted by electricity, with ventilating apparatus of the most approved kind, with large lecture rooms for each of the classes, and library room, is one of the most complete and commodious law buildings in the United States. Here those desiring to enter the influential and honorable profession of the law may receive the training to fit them for that pursuit.

**THE THREE YEARS' COURSE OF STUDY.**—In common with other leading law schools of the country, the Wisconsin college has raised the standard of admission, and prescribes a three years' course of study. The necessity for thus lengthening the period of study has been perceived by the great body of lawyers and those engaged in legal instruction. There is great and overdue haste in American youth to enter upon the active and stirring scenes of

life. This has, under previous systems, placed many men in the ranks of the profession without adequate preparation, barred most of them from permanent success, doomed them either to failure, or to the lower walks of the profession where honors and profits are small.

The permanent success and lucrative practice of the young lawyer is often assured by his display of learning and ability in his first cases. If he stumbles and blunders in these, a long season of inactivity often forces him to regret his entrance into the profession unfitted to use its weapons.

**PECULIAR ADVANTAGES.**—The law college of the University of Wisconsin affords many advantages to the student which are exceptional. Here he is surrounded with the best of university influences, all tending to culture and refinement, all challenging to the best effort and pointing to high ideals. Here is a *legal* atmosphere of stimulating quality. Here are unusual opportunities for observation of legal proceedings.

The Circuit and District Courts of the United States, the State Courts, Municipal, County, Circuit, and Supreme, in all of which all kinds of important causes are on trial during the greater part of the year, conducted by the ablest lawyers in the state. Here is a large, strong, and able bar, notable for its industry, its careful preparation and able management of causes. Here, legal subjects are constantly discussed not only at the bar and in the class room and moot-courts, but in the law offices, among members of the bar, and in the association of students. The student is absorbing the legal knowledge and breathing in the professional spirit from all sources. No law school of the country affords better facilities in these respects.

**ACCESS TO LIBRARIES.**—The large general libraries accessible to students have already been described in the introductory

chapter. The new library of the College of Law, especially for the use of students, is carefully selected with reference to their needs. Its five thousand volumes embrace the most valuable of the reports of decided causes and the best text books on all legal topics; and the law students are permitted to use the State library, one of the largest and best selected collections of law books in the West for reference and case-study. In no Western school, if any, are better library facilities to be found.

The library room in the law building is a model of convenience, admirably ventilated and lighted, where one hundred or more students can sit at table and write notes from the volumes in pursuing their studies, with ample room for books, and library shelves close at hand.

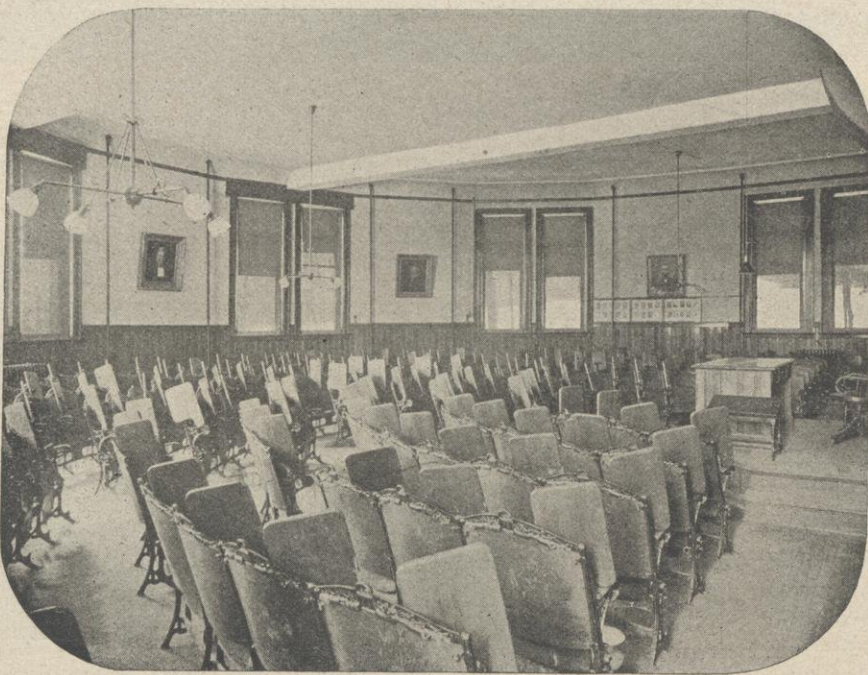
**IT IS** an advantage that the legislature holds its biennial sessions at Madison, affording the student opportunity to watch the processes of law making. The arguments before committees, the debates in the two houses, the methods of parliamentary procedure, are all helpful to students of law, and are attended by them with eager interest.



READING ROOM OF LAW LIBRARY.

**THE INSTRUCTION IN LAW.**—Instruction in the College of Law combines various approved methods. Lectures are given on a few topics. The "case-system," or inductive method, now highly approved and adopted in many of the leading law schools, is here extensively used. The system of topical study and oral examination is also applied. Under all methods the student is daily called upon to expound and explain his reading of text books and cases. Each student is brought into close relations with his instructors. His work is under constant supervision. In no law school, it is believed, does the progress of the student receive more attention than here. The instruction is thorough and given with a view of fitting the student for all the requirements of modern practice.

**THE INSTRUCTIONAL FORCE.**—The instructional force is composed chiefly of lawyers who have had large experience at the bar. All are helpful guides, thoroughly familiar with the branches they teach and filled with high



LAW LECTURE ROOM.





WINTER SCENE ON UNIVERSITY HILL.

professional enthusiasm for their work.

The staff of instruction in the College of Law and those departments and schools in which law students are most interested are as follows:

Charles Kendall Adams, LL. D., President of the University.

Edwin Eustace Bryant, Dean of the Law Faculty, Professor of Elementary Law, Practice and Pleading, Equity, Railway Law, and the Law of Public Offices and Officers.

Charles Noble Gregory, A. M., LL. B., Associate Dean of the Law Faculty, and Professor of Criminal Law, the Law of Contracts, of Sales, and of Probate Law.

John B. Cassoday, LL. D., Chief Justice of the Supreme Court of Wisconsin, Professor of Constitutional Law.

Jairus Harvlin Carpenter, LL. D., Jackson Professor of Bailments.

Burr W. Jones, A. M., LL. B., Professor of the Law of Evidence, Public Corporations, and Domestic Relations.

John Myers Olin, A. M., LL. B., Professor of the Law of Real Property, Wills, and Torts.

Robert McKee Bashford, A. M., LL. B., Professor of the Law of Private Corporations, and Commercial Law.

William Lincoln Drew, S. B., LL. B., Assistant Professor of the Law of Agency, Bailment, and Study of Cases.

John Barber Parkinson, A. M., Professor of Constitutional Law and International Law.

Richard Theodore Ely, Ph. D., LL. D., Professor of Political Economy.

Frederick Jackson Turner, Ph. D., Professor of American History.

Charles Homer Haskins, Ph. D., Professor of Institutional History.

William Amasa Scott, Ph. D., Professor of Economic History and Theory.

David Bower Frankenburger, A. M., Professor of Rhetoric and Oratory.

#### SPECIAL LECTURER.

Hon. William Freeman Vilas, LL. D.

**HISTORIC, ECONOMIC AND OTHER STUDIES.**—The School of Economics, Political Science, and History has its home in the Law Building, and to much of its course the diligent law student is able to give attention, and has free access. Historical lectures, valuable to the law students, are given in the other departments, and he may take up any studies in the general course and pursue them, so far as the exactions of the legal course will permit.

While the course of study in its entirety embraces much of technical law, substantive and remedial, many of the

topics separately treated are of special utility to those not intending to practice law but to engage in commercial pursuits. The instruction given in the Law of Commercial Paper, of Insurance, Banking, Private Corporations, Agency, and Sales, is valuable to one seeking only a business education. Persons of twenty-three years of age and upwards who cannot pass examination for admission to the University, in discretion, are permitted to enter and take special studies in the College of Law. If they subsequently desire to become candidates for a degree, or to take the regular course, they may do so, but must at a later stage before graduation pass the required entrance examination.

The graduates from accredited High Schools can, of course, enter without examination, upon presentation of their diplomas.

**THE CLASS MOOT COURTS.**—These courts embrace the courts presided over by some of the members of the faculty, one for each class, and the Class Moot Courts, which are conducted by the students themselves. Cases



VIEW OF MADISON FROM THE MONONA ASSEMBLY GROUNDS.

are assigned and after careful study the student argue them, and members detailed as judges write opinions thereon. In addition to these the students form clubs, in which a limited number unite for the argument of legal questions, and other mental culture, tending to fit for professional duties.



UNIVERSITY HALL.

### Debating in the University.

Not least among the advantages of the law school is the system of debating in the University. Almost at the founding of the institution a literary society was established; this was followed quickly by another, and these finally by a third, all devoted heart and soul to debating and oratory, but especially to debating. Although the graces of oratory were not neglected, these societies were devoted to debating as the highest form of pure intellectual effort,—the deepest, most thorough investigation, and the arguments, in order and form, to produce conviction.

The annual debate of these societies, called the "Joint Debate," is a great event of the college year. The questions are current, practical ones, the most complex, the most difficult. The currency, the tariff, municipal or state ownership of transportation lines, gas, water, and kindred questions have been most studied. The civilized world is put under tribute for these debates. Not infrequently the material is drawn in large part from foreign sources and found only in foreign tongues. No expense, no effort is spared to

get to the very bottom of the question. These annual debates are published, and have always commanded the warmest praise of university, professional, and business experts in whose domain the subject of the debate has lain. The debates and the bibliographies published with them, are substantial contributions to modern scholarship. In intercollegiate debates Wisconsin has been almost uniformly victorious.

So much for debating in the College of Letters and Science. In the College of Law there are also three debating societies. These societies were organized by graduates of the older societies, and their membership is largely made up of those who have had several years' training in debate. In intercollegiate debates and in all oratorical contests these six societies stand on the same plane. The courses in oratory in the University are open to all, and it may be doubted if any school of law in the country offers greater advantages to those desiring to train themselves in heart that makes legal knowledge effective.





HOME OF THE SCHOOL OF PHARMACY.

### The School of Pharmacy.

In accordance with the expressed wishes of the Wisconsin Pharmaceutical Association, which in 1883 requested the establishment of a Department of Pharmacy at the University, the prime object of the School of Pharmacy is to educate young men and young women for the practice of pharmacy. It also affords facilities for the training of those who are preparing themselves to be manufacturing pharmacists and pharmaceutical chemists. Lastly, those who desire a thorough scientific education preparatory to the teaching of the pharmaceutical sciences, will find special opportunities, the entire University being open to them. As an integral part of the University, the school offers many courses which are elected by students from the other colleges and schools.

At the time of the organization of the school it was housed in South Hall, but in 1890 it was transferred to North Hall, where, at the present time, it occupies all of the third

ing to the bachelor's degree on the same educational basis with the general science course of the University. It soon became apparent, however, that many students desired an intermediate course as to time. This necessitated the establishment of a three years' course. Fully seventy-five per cent. of the students are at present in the longer courses.

LABORATORIES.—The instruction of the pharmacy student consists in very large measure of laboratory work. In addition to the chemical, biological, physical, and mineralogical laboratories, already described on earlier pages of this booklet, there are five laboratories under the immediate control of the School of Pharmacy. The laboratory for pharmaceutical chemistry occupies the middle half of the third floor of North Hall, and is well equipped with balances (kept in a separate balance room), combustion furnaces, gas furnaces, and much other chemical apparatus needed for advanced experimental work. Here are afforded excellent facilities for research work. On the same floor is situated the laboratory of pharmaceutical technique. This laboratory is equipped with apparatus and material for the more detailed and applied study of such chapters of mechanics and physics as are of special importance to the student of pharmacy. It contains balances, measuring instruments of various kinds, apparatus for specific gravity, molecular weight, and vapor density determinations, polariscopes, refractometers, apparatus illustrating processes of distillation, sublimation, filtration, crystallization, etc.; also



LABORATORY FOR PHARMACOGNOSY.

large collection of drugs in cases and an herbarium of medicinal plants adjoining the large laboratory. In 1894 the department of Practical Pharmacy was added and in the following year the departments of Pharmacognosy and Pharmaceutical Technique. The school therefore consists at present of five departments, each provided with its own instructor or instructors. No other school in this country or abroad has as complete an organization as the School of Pharmacy of the University of Wisconsin.

OPPORTUNITIES FOR ADVANCED WORK.—Through interest in this school, awakened in one way or another, funds have been placed at the disposal of the school for the establishment of fellowships and scholarships. This has enabled the school to carry on considerable work of an advanced and even graduate character. *The Pharmaceutical Review*, the leading American journal of pharmacy, is edited by Dr. Edward Kremers, the Professor of Pharmaceutical Chemistry. This journal, by keeping the student informed of the work that is being done in pharmacy, as well as by furnishing a place of publication for all important research work, materially assists in the advanced work of the school.

The school has its own department library with journals, etc., as a portion of the University library, and all the libraries located in the city are open to pharmacy students. The numerous exchanges received in return for the *Pharmaceutical Review* form a most important addition to the literature of the department.

INSTRUCTORS.—The special faculty of the school consists of the following:

Charles Kendall Adams, LL. D., President of the University.

Edward Kremers, Ph. G., Ph. D., Professor of Pharmaceutical Chemistry.

Lellen Sterling Cheney, M. S., Assistant Professor of Pharmaceutical Botany.

Rodney Howard True, Ph. D., Assistant Professor of Pharmacognosy.

Richard Fischer, Ph. C., B. S., Instructor in Practical Pharmacy.

Louis Kahlenberg, Ph. D., Lecturer in Pharmaceutical Technique.

Oswald Schreiner, Ph. G., Assistant in Pharmaceutical Technique.

In addition to the special staff of the school the professors of physics, zoology, bacteriology, botany, geology, mineralogy,



LABORATORY FOR PHARMACEUTICAL CHEMISTRY.

and fourth floors, the north quarter of the first floor, and the greater portion of the basement. Instruction in general chemistry, general biology, the literary courses, and most general electives for pharmacy students, are given in the chemical laboratory, science hall, and other buildings on the university campus.

As has already been indicated, the school was founded in 1883, with a single course of two years of seven months each. In the year 1892 the school was reorganized. Instead of a single department, as prior to that time, two were established, that of pharmaceutical chemistry and pharmaceutical botany. At the same time the short course was lengthened to two full years.

In order to accommodate those who desired a more liberal and broadly scientific education in connection with their pharmaceutical studies, a four years' course was offered, lead-

batteries and apparatus for the study of electrical conductivity of solutions.

In the laboratory for practical pharmacy the work is necessarily more individual than class work, and the laboratory is equipped accordingly. It is supplied with balances, percolation stands, water-motor, drug mills, mortars, and other apparatus necessary for the work of the department. The comminution room is in the basement, separate from the general laboratory.

The laboratories for pharmacognosy and pharmaceutical botany occupy the greater portion of the fourth floor. These laboratories are supplied with modern compound microscopes, dissecting microscopes, reagents, etc., affording facilities for advanced work and original investigation. In addition to these laboratories and in connection with the work in botany and pharmacognosy, there is a very



HOME OF THE SCHOOL OF MUSIC



chemistry, mathematics, French, German, rhetoric, etc., give regular instruction to pharmacy students.

**COURSES OF STUDY.**—The School of Pharmacy of the University of Wisconsin does not require drug store experience for admission, but urgently recommends that those who anticipate entering the pharmacy courses should secure a good high school training in place of the apprenticeship formerly in vogue. As a result of this policy graduates of high schools will find here opportunities for the study of pharmacy, unexcelled by those of any other institution in the country.

As already stated, the prime object of the school is to furnish a thoroughly scientific foundation for the pursuit of the profession of pharmacy. The elements of the fundamental natural sciences, chemistry, botany, or biology, and physics must first be studied before their application to pharmacy can rationally be considered. This is as true for pharmacy as for any other applied science or art. In pursuing these general studies the pharmacy students have the advantage of close association with students from other courses.

The general study of these fundamental sciences is followed by more or less specialized courses. General chemistry, inorganic and organic, qualitative and quantitative analysis, are followed by pharmaceutical chemistry and applied chemical analysis; elementary botany by vegetable histology, and general physics by pharmaceutical technique. These somewhat specialized studies, in turn, not only lay the foundation for the study of the more strictly applied courses in practical pharmacy and pharmacognosy, but also prepare the student for thesis work.

The student who can spend only two years at the University is compelled to take up the more technical studies of his course before he has laid a satisfactory foundation. The three-year student, as a rule, finds time to pursue other studies besides those outlined above, *e. g.*, German, physiology, bacteriology, etc. The four-year student has the great advantage of supplementing his high-school preparation during the Freshman and Sophomore years by acquiring a reading knowledge of German and French, and by the study of university mathematics, all of which studies are of the

greatest importance when the more advanced work of the natural sciences is taken up during the Junior and Senior years.

Graduate students who desire to prepare themselves as chemists for manufacturing establishments, as analytic or sanitary chemists, or as bacteriologists, will find that the gradu-



AT THE QUARRIES.

ate courses both of the School of Pharmacy and also of the various Colleges of the University, offer excellent opportunities for advanced and more specialized study. Special lines of research can also be pursued in various departments by those who desire to work for a higher degree.

### The School of Music.



**MUSICAL TRAINING** at the University of Wisconsin has been organized into the School of Music, now in its third year, to meet the demand for special instruction in the various branches of a musical education. The general work of the department of Music was, when reorganized, of such proportions as to call for the entire time and attention of the Professor of Music. The school is well organized and equipped for the purpose of giving sound training in vocal or instrumental music. Not merely piano is meant by instrumental music, but violin, harp, mandolin, guitar, banjo, and orchestral instruments in general.

The school is directed by Professor Fletcher A. Parker, who is an officer in the Music Teachers' National Association, and the corps of instruction is composed of teachers who have had careful training, to which has been added years of successful experience in teaching. Several have had the advantage of European, as well as American, training. It is the general purpose to do thorough, conscientious work along educational lines leading up to musicianship and ability in performance.

The Collegiate course requires, after a com-

petent preparation, three years of study, when, if satisfactory work has been done, a diploma will be given.

The Academic course is designed for those who lack in preparation or do not care to follow the regular course leading to graduation.

The courses in the department of music in the University are unusually full, embracing satisfactory courses in musical theory, history, harmony, counterpoint (simple and double), and composition. Classes in these subjects are open to all students of the School of Music. Among other incidental advantages should be mentioned especially a strong and successful choral society, which devotes itself to the study and public performance of important musical works.

Musicians need general as well as special training. The opportunity for the study of collateral subjects in a large and well equipped university can not well be overestimated.

### The College of Agriculture.

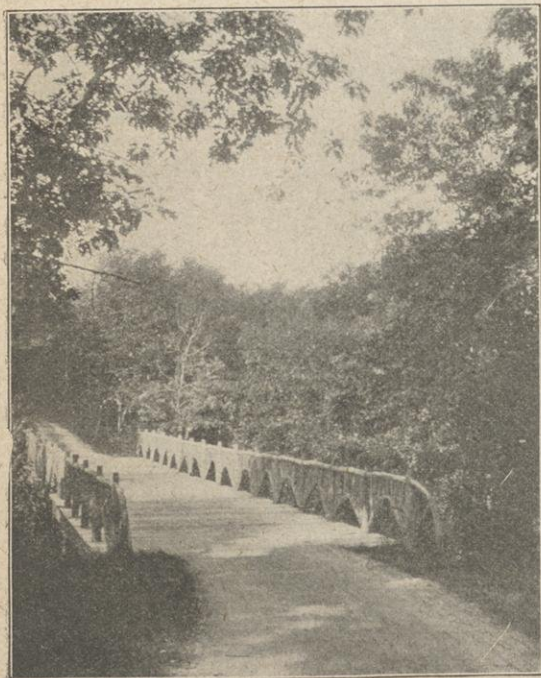
The College of Agriculture was created by the Regents to carry into effect the act of the general government of establishing in each state of the Union a college specially devoted to the education of the children of the industrial classes. This act was passed in 1862, and by it more than eleven million acres of land were given to the several states, the income from which constitutes the fund known as the Agricultural College Land Grant Fund. Wisconsin's share of this gift was two hundred and forty thousand acres. The work of the agricultural

college embraces three distinct lines of effort, *viz.*: conducting investigations for the advancement of knowledge in agriculture; giving instruction to those who apply for it at the University, and, lastly, providing for the instruction of farmers through the medium of the Institutes.

**THE AGRICULTURAL EXPERIMENT STATION** is jointly supported by the general government and the state. Its investigations



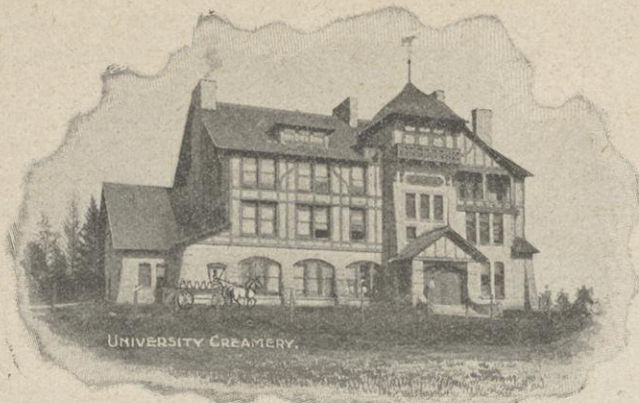
A STRETCH OF SANDY BEACH.



RUSTIC BRIDGE ON RAYMER DRIVE.

cover such lines as animal husbandry (including dairying), horticulture, physics of the soil, etc. The people of the state are kept in touch with the Station and learn of its work through the medium of annual reports, and bulletins issued from time to time. During the past year the Station has distributed more than eight million pages of printed matter. The most fruitful result has probably been the Babcock milk test, devised for the purpose of





HIRAM SMITH HALL, WISCONSIN DAIRY SCHOOL.

quickly and accurately determining the amount of fat in any given sample of milk.

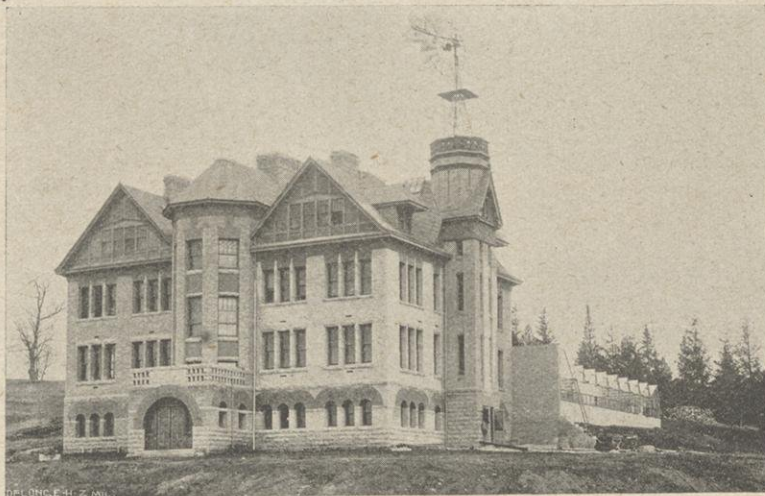
**COURSE OF STUDY.**—In its educational work at the University the Agricultural College offers several courses of instruction. A course for graduate students covers special lines in advanced agricultural chemistry, agricultural physics and mechanics, animal husbandry, horticulture, etc. Each year finds several graduate students pursuing studies in one or more of these divisions. The long course in agriculture requires for entrance the same preparation as does the general science course of the University, and leads to the degree, "Bachelor of Science in Agriculture." The purpose of this course is to provide a liberal education for young men especially interested in agriculture. It prepares them for active farming or for the work of investigation and teaching in special institutions.

**DAIRY AND SHORT COURSES.**—To meet the demands for instruction covering but a limited period of time, and of an intensely practical character, there has been established the Short Course in Agriculture and the Dairy Course. The Short Course in Agriculture covers two terms of fourteen weeks, beginning in December, with instruction in the rearing and management of live stock, the cultivation of farm crops, horticulture, dairying, etc. During the present term 157 students have been in attendance on this course. The dairy course provides instruction for those who operate creameries and cheese factories. During the term just closed 115 students were in attendance on this course. Although the last two courses are of recent origin, more than four-

teen hundred students have attended them at the University.

**BUILDINGS.**—The College of Agriculture now occupies exclusively three buildings, viz., South or Agricultural Hall, the Horticulture-Physics building, and Hiram Smith Hall, the dairy school building. At the farm are buildings specially devoted to the different classes of live stock, the more recent of which is the new barn for the dairy herd, erected at a cost of \$16,000.

No account of the University would be complete without reference to that popular form of university extension work known as the Farmers' Institutes. Each year more than one hundred meetings, lasting from two to three days each, are held under the auspices of the University, which sends special lecturers to conduct the exercises. The aggregate attendance of different individuals on these meetings is not less than fifty thousand annually. Each year there is published an institute bulletin, a volume of 300 pages, presenting the latest and best papers and discussions upon agricultural topics. Sixty thousand copies of this bulletin are printed annually. One copy is placed in each district school library in the state, and the remainder



HORTICULTURE-PHYSICS BUILDING.

is distributed at the institute meetings and through various other channels.

### Wisconsin Summer School.

While established originally for the assistance of teachers and those preparing to teach in grammar and high school grades, this school is open to any one wishing to pursue any of the studies in which it offers instruction, viz.: psychology, pedagogy, botany, physiology, zoology, chemistry, English literature, mathematics, physics, history, German, and library science. Its courses are especially valuable for finishing preparation for the University; for students who wish to make up deficiencies or to extend their work in any line, or to do special work of research; and for persons fitting to teach or to take the state examinations.

The sessions of the school are held in the regular lecture rooms and laboratories of the University during six weeks of July and August.



RACEWAY OF YAHARA RIVER.

By consultation with the instructors, arrangements may be made in many of the branches taught, by which credit will be given in the University for work done in the Summer School. Students desiring such credit must have passed the entrance examinations for one of the University courses, and must expect to pass a satisfactory examination upon the work done in the Summer School. The amount of credit will in all cases be determined by the amount and character of work done.

### University Extension Department.

This department is organized to extend the instruction of the University by means of lectures delivered throughout the state. These lectures are given in courses by university professors on subjects which they treat in their regular classes. These lectures, however, are so arranged as to interest the general public. Technical terms are omitted as far as possible and efforts are made to render the lectures as attractive as possible to ordinary men and women who are not, and perhaps never have been, college students. No special knowledge of the subject is required to enable a person to understand a university extension lecture.

Under the system adopted by the University of Wisconsin, university extension lectures are delivered in courses. Each course consists of six lectures. Each lecture is a unit in itself and may be intelligently followed by one who has not heard any of the other lectures in the course; but each course is also a unit in itself, for the six lectures comprised in the course treat different parts of the same general subject.

A printed syllabus, free to each student, gives an epitome of the subject considered, an analysis of each lecture, references to the best books on the subject, and other helpful suggestions. This obviates note taking, assists the student in reviewing, and furnishes him, after the lecture course is completed, a guide to the whole subject.

At the end of the course an examination is held on the work covered in the lectures and the prescribed reading, and a certificate which has a credit value at the University, is granted to those who pass.



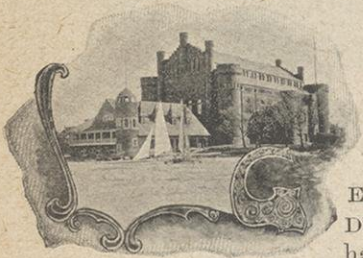
AGRICULTURAL HALL, EXPERIMENT STATION.





# Physical Culture.

"But none of the universities frequented by men, unless it be the University of Wisconsin, has such an ample and agreeable pleasure-ground surrounding it as those possessed by the oldest women's colleges, Vassar and Wellesley."—JAMES BRYCE in *The American Commonwealth*.



## Physical Culture.

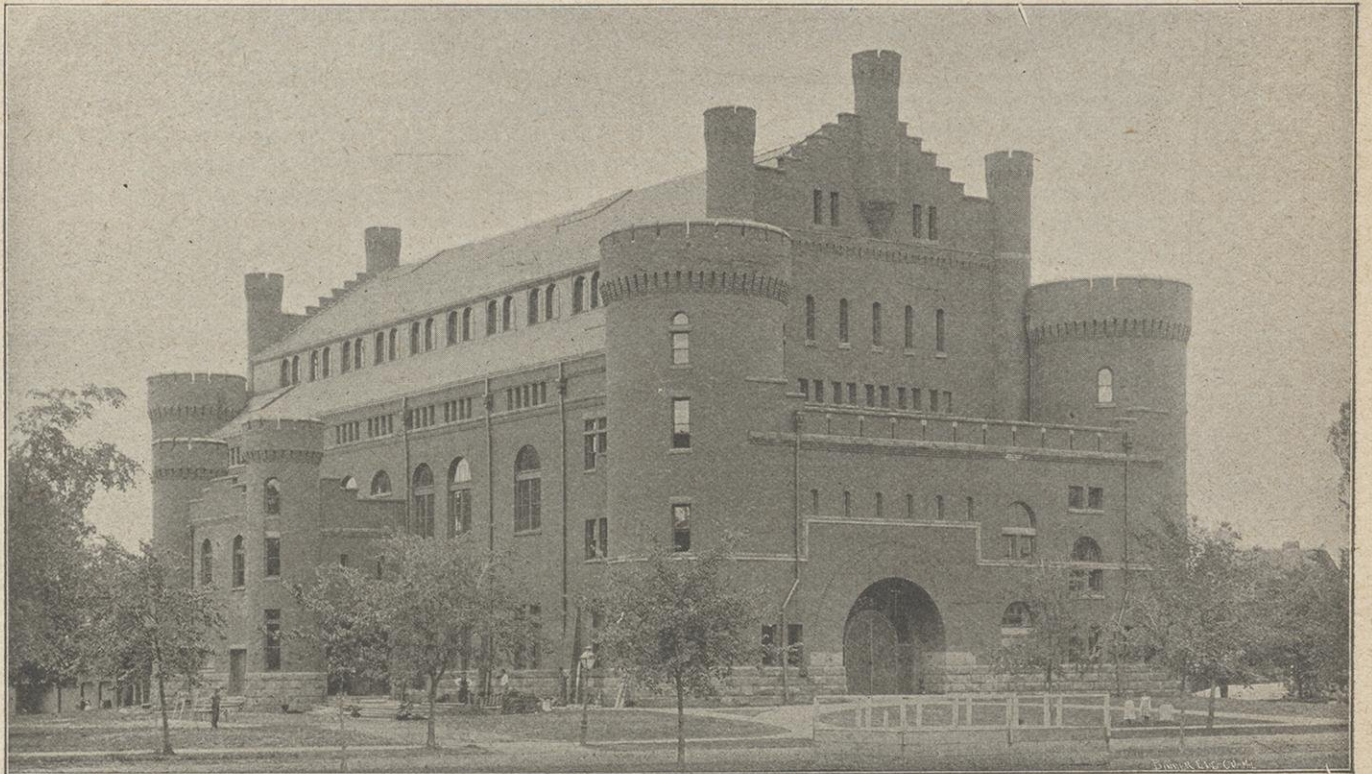
**GENERAL INTRODUCTION.** The time has passed when it was necessary to call attention to the advantages of physical culture as a part of university training. Every higher institution of learning in the country gives some attention to the subject, and the students are encouraged to take part in gymnastic work of some kind.

The best training in physical culture is obviously that which gives the best developing work to *all* its students, rather than an overtraining to a few men already exceptionally well developed physically and presumably also awake to the advantages of gymnastic exercise. Moreover, students physically deficient in any way or unused to exercise, may incur serious physical injury by suddenly undertaking vigorous exercise.

The distinctive feature of physical culture in this University is the fact that all freshmen and sophomores are required to take such exercise in the gymnasium as is prescribed after a physical examination, which reveals any physical deficiency or disease tendency in the student. This examination is made of men by the director of the gymnasium and of the ladies by the mistress of Ladies' Hall. The required exercise

they present hardly less animated a scene, for their surfaces are then dotted by the swiftly gliding ice-yachts, while here and there the

athletes and athletic teams, which uphold the prowess of the institution, their expenses for coaching and training are borne by the vol-



ARMORY AND GYMNASIUM.

groups of skaters and skate sailors give character to the scene. The athletic activity of the University at this time is, however, to a large extent compressed within the four walls

of the great gymnasium building. Here at the proper times may be seen a quarter of the University engaged in gymnastic practice, or the entire regiment and the band in battalion drill in the great hall. In the ball cage on the floor above, base ball, hand ball, basket ball, and tennis are played; the sprinters are using the running track; and others the bowling alleys or the natatorium. The crews, too, may carry on regular practice in the rowing tank, housed in a little building on the lake shore. The young ladies of the University have their well equipped gymnasium at Ladies' Hall.

The University thus provides opportunities for the best possible physical development of all its students, and while it encourages in every proper way the training of individual

## Equipment.

**GYMNASIUM AND ARMORY.**—Through the liberal appropriations made by the legislature of 1891 means were provided for the construction of an armory and gymnasium. The new building, which is constructed of brick in the Norman style of architecture, was completed in 1894. It is 200 feet in



SHAM BATTLE BETWEEN UNIVERSITY BATTALIONS ON LAKE SHORE.

extends for two hours per week through two years, and it is on the foundation thus laid that all the athletic success of the students has been obtained.

It may well be doubted if there is a university in the country which possesses greater advantages for all round physical development than does the University of Wisconsin. In the warmer seasons of the year there are the shaded drives for walking and wheeling, the lakes and the university boat house for rowing, sailing, and swimming, the athletic field and the campus for team athletics, the parade ground for military drill, the tennis courts, and the broad stretches of partly wooded lake shore for the sham battles of the university regiment.

When the lakes are closed for the winter



ICE REGATTA ON LAKE MENDOTA.





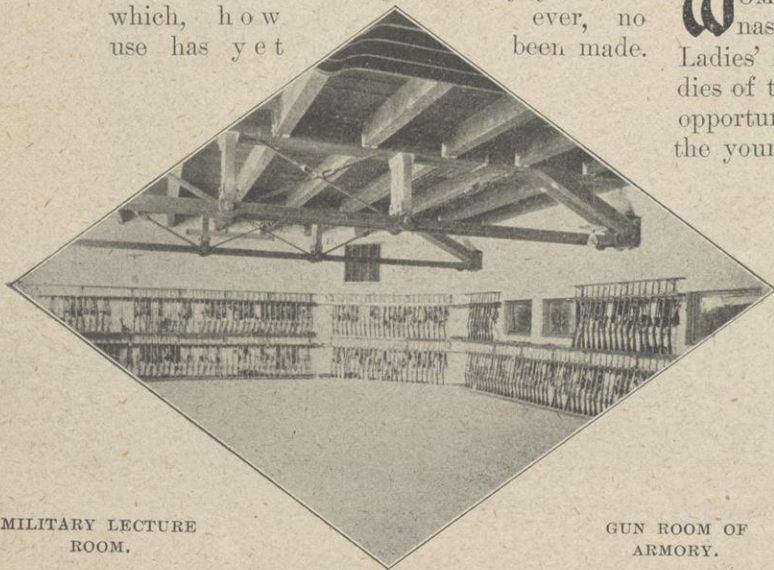
BASE BALL CAGE AND INDOOR TENNIS COURTS.

length, 100 feet in breadth, and three stories high. Of slow-burning mill construction, it is heated in the most satisfactory manner from the University's central heating station, so that the most important source of danger from fire is removed.

On the main floor, besides the office for the instructors and the trophy room, there is an unobstructed hall 165 feet long and 95 feet wide, for the purposes of gymnastic practice and military drill. This room is thoroughly fitted with the most approved and scientific developing apparatus. In its equipment the gymnasium is not surpassed by any in the West, and in size it is absolutely the largest in the United States. It has a gallery at the south end of the main hall with seats for 400 visitors.

On the third floor is a room of similar proportions to the main hall, in which is a cage 160 feet in length for base ball practice, hand ball, and indoor tennis courts.

Around the cage are wall machines and other apparatus, so that when the great hall below is in use for drill, voluntary work may not thereby be interrupted. Between the main floor and the third floor is the padded running track, with but 12 laps in the mile, and above there are two rifle-ranges of fifty yards, of which, however, no use has yet been made.



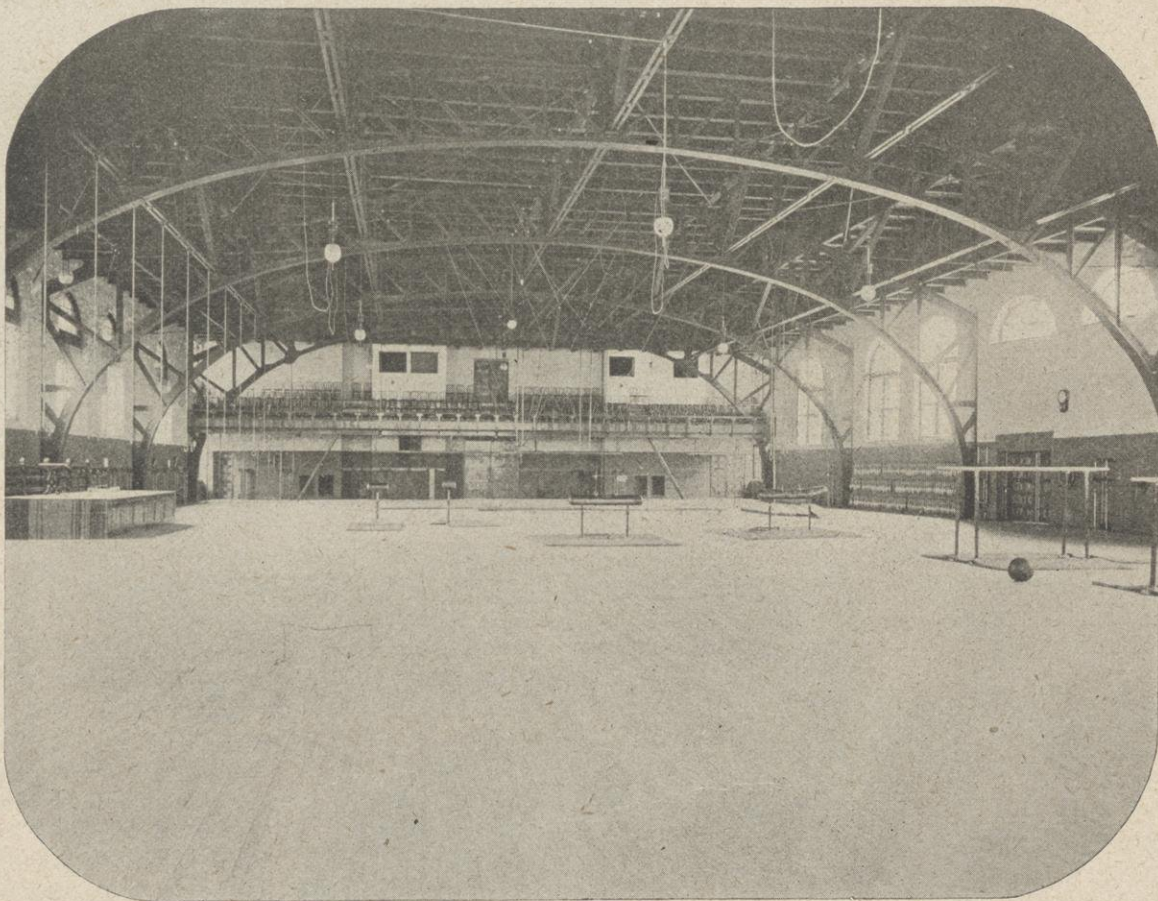
MILITARY LECTURE ROOM.

GUN ROOM OF ARMORY.

On the first or entrance floor are the locker room, now supplied with 600 lockers, dressing rooms, and the ample accommodations for bathing. These include tub-baths and the great shower bath room recently doubled in size.



**NATATORIUM.**—On the ground floor is the swimming tank, which is 80 feet long, 20 feet wide, and varying from the depth of the waist at one end to ten or more feet in the deepened portion at the other. The natatorium is lined throughout with tile, fitted with ladders, swings, diving gallery, etc., and the water is kept at a comfortable temperature by the use of steam. In size and in appointments the natatorium is on a scale with the building itself and the great drill hall. On the first floor are, further, four beautifully equipped bowling alleys, the offices of the Director of the gymnasium and the Commandant of the battalion, and the gun room, around the walls of which are arranged the pieces and other accouterments of the University regiment, but which serves also as a military lecture room.



MAIN GYMNASIUM AND DRILL ROOM.

In the trophy room on the main floor of the building are treasured the banners and other trophies won by the representatives of the cardinal in many a contest, whether at home or on other athletic fields.

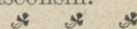


**WOMEN'S GYMNASIUM.**—The new gymnasium for women in the rear wing of Ladies' Hall now provides for the young ladies of the University the same facilities and opportunities which have been enjoyed by the young men. The gymnasium now extends through two stories of the building, is 71 feet long by 39 feet wide, amply lighted by windows on three sides and ventilated by an electric fan. The equipment in swinging booms, saddles, bar stalls, benches, window ladders, etc., is very ample, and allows of clearing almost the entire floor for drill work. In addition to the main room there are 27 dressing rooms with 108 lockers, and 15 shower baths for those students who take part in the gymnastic work.



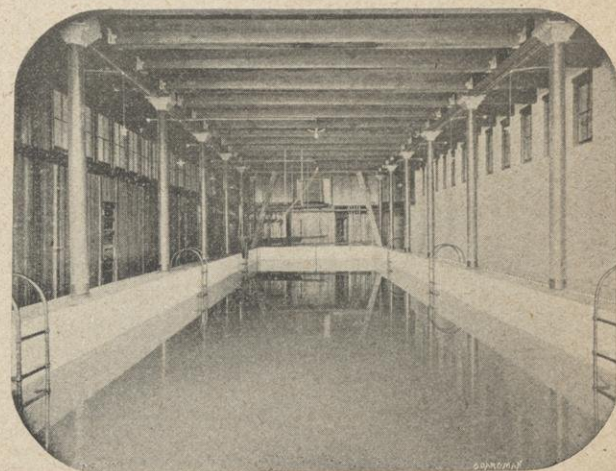
BOWLING ALLEYS.

**RANDALL ATHLETIC FIELD.**—The great Athletic field of the University is located about half a mile from the center of the group of university buildings, on the site of old Camp Randall, dear to veterans as a camp and drill ground during the war. It is reached from the University not alone by paths and drives but by the electric car-line, which skirts the University from the lower campus along State and Park streets and University avenue, almost to the gate of Randall Field. (See map in first number of this series.) The field encloses about eleven acres, has been graded and under drained, provided with two tracks, one-third and one-fourth miles in length respectively, with a grandstand which accommodates 1,500 spectators and bleachers seating thousands. Under the stand are dressing rooms for the athletes. No university in the West has an athletic field either so large or so well appointed as that of the University of Wisconsin.



**PARADE GROUND.**—The lower campus is the parade ground of the university regiment, and serves also as an athletic ground for practice work. Being directly in front of the gymnasium it is conveniently near to the bath and dressing rooms.

Almost under the hill, some 200 yards south of University Hall, are the sets of ten-



NATATORIUM.



nis courts of students and faculty. Facing, as they do on University avenue, they are connected by electric car with all parts of the city.

**UNIVERSITY BOAT HOUSE.**—On the shore of Lake Mendota, behind the gymnasium building, is the boat house erected a few years since by the University Boat House Association at a cost of about \$4,000. In a portion of this building are kept the shells, gigs, sweeps, etc., of the university navy. The remaining portion of the house is used for the storing of boats for members of the association and others, and for the purposes of a general boat livery. A few rods east of the boat house is the house containing the rowing tank for the winter practice of the crews.

### The Instructional Force.

The instructional force of the university in the department of physical culture consists of a professor of physical culture, who is the director of the gymnasium, the lady instructor in physical culture, who has charge of the women's gymnasium, and two student assistants employed in the men's gymnasium. Dr. James Claude Elsom, the director of the gymnasium, is a graduate of the medical department of the University of Virginia and has had experience both as a surgeon and as a gymnasium director before his call to the University of Wisconsin in 1894. Miss Abbie Shaw Mayhew is the mistress of Ladies' Hall and the instructress of the ladies in physical culture. The gymnastic work required of the under classmen in addition to the dumb-bell and wand drill, is made effective by the separation of the large classes into squads for machine work, vaulting, etc. The squads are placed in charge of competent squad leaders, who are trained gymnasts, generally selected from the upper classmen of the University.

In addition to the official instruction of the department, students are given the privilege of expert instruction in boxing under Mr. A. O'Dea, in wrestling under Mr. Holmes, in fencing under Mr. de Soucey, in swimming under Mr. Whare, and in fancy club

swinging under Mr. Simpson. There is possibly no gymnasium in the West where such a variety of instruction is given as at Wisconsin.

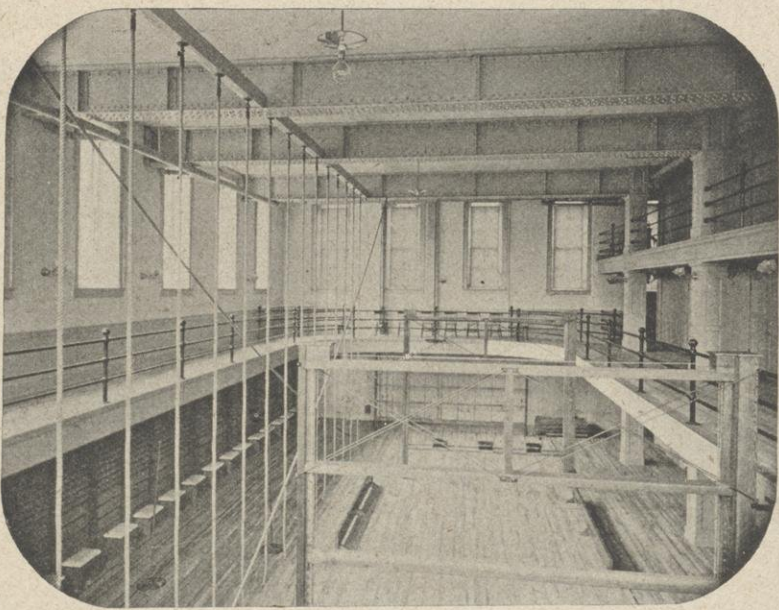
First Lieut. J. C. W. Brooks, U. S. A., is the professor of military science and tactics and the commandant of the university regiment. He graduated with honors at West Point and studied later at the post-graduate military school at Fort Monroe, Va. He has been instructor at West Point and has served several years in the U. S. army. The regiment is officered by students of the sophomore and upper classes who are selected and promoted by the commandant from the ranks of the regiment on the basis of excellence of

work and soldierly bearing. The band of twenty-two pieces has a paid student leader, and furnishes the music for the regimental drill.

### Work in Physical Culture.

All men of the freshman and sophomore classes, unless debarred by some physical disability, are required to take a minimum amount of class exercise, on four days of each week. Credit is given for attendance at these classes, and the work counts toward graduation.

Systematic drills are given with Free-hand and Swedish movements, dumb-bells, barbells, indian clubs, etc. After these preparatory exercises, the classes are divided into ten or twelve squads, each under the personal supervision of competent instructors and trained student assistants, and given progressive graded exercises on the various pieces of gymnastic apparatus, viz.: the horses, bucks, horizontal bars, parallel bars, vaulting bars, mats,



WOMEN'S GYMNASIUM AT LADIES' HALL.

springboards, rings, chest weights, overhead ladders, etc.

All the young women of the freshman and sophomore classes, unless prevented by some physical disability, are required to spend the minimum time of two hours per week in the gymnasium. A course of lectures on Practical Hygiene and the Physiology of Exercise is delivered during one semester by the professor of physical culture, these lectures being a regular part of the course in gymnastics. It has been the object of these lectures to give practical, useful advice concerning exercise, diet, and general living.

No gymnastic work is required of students after the sophomore year, but on the part of a large proportion of them, voluntary exercise in the gymnasium is undertaken and a class is formed also in the faculty of the University. Basket ball teams have been organized among the young women of the upper classes, and successful classes formed among them for voluntary gymnastic exercise.

### Anthropometry.

**CORRECTIVE WORK FOR PHYSICAL DEFICIENCIES.**—One of the most important and necessary features of the work is the careful physical examination of the students who use the gymnasium. The practical benefits of a series of measurements, and the absolute necessity for such an examination



J. C. ELSOM, M. D.,  
DIRECTOR OF THE GYMNASIUM.

is at once apparent. The regulations of the department require each member of the Freshman and Sophomore classes to undergo this examination, in order that his general health may be ascertained, weak points found out, and appropriate corrective exercise prescribed. Each student, when he or she goes to the office of the Director or to the Mistress of Ladies' Hall for examination, is given a blank to be filled, containing questions, the answers to which indicate the state of health, physical condition, and any tendency to disease, so that the student may be intelligently advised regarding special exercise and general habits. A careful record is kept of fifty measurements of each student, also records as to the condition of heart, lungs, skin, spine, muscles, etc.

Toward the end of the college year a second physical examination is given, and this second series of measurements and strength tests shows with accuracy the improvement in physique and strength, which the student has made as a result of the course of physical training. In nearly every instance this improvement has been very marked, as can be observed by the statistics averaged in the Director's annual report.

No less than a thousand measurements are made annually by the Director of the gymnasium and constitute the most extensive series made in any Western university.

The series of measurements are made upon the young ladies by the mistress of Ladies' Hall, and though so recently undertaken they already indicate a marked improvement due to regular exercise.

**THE WISCONSIN STUDENT.**—The large number of student measurements made at the University allow of a comparison with similar measurements taken at the universities of Yale, Cornell, and Amherst. The figures show that the Wisconsin student is younger but is taller and heavier than the Eastern man. He has a longer reach of arms, is broader in both hips and shoulders, has a larger head and biceps than the Eastern man, and a greater lung capacity than any but the Cornell student.



UNIVERSITY BOAT HOUSE.





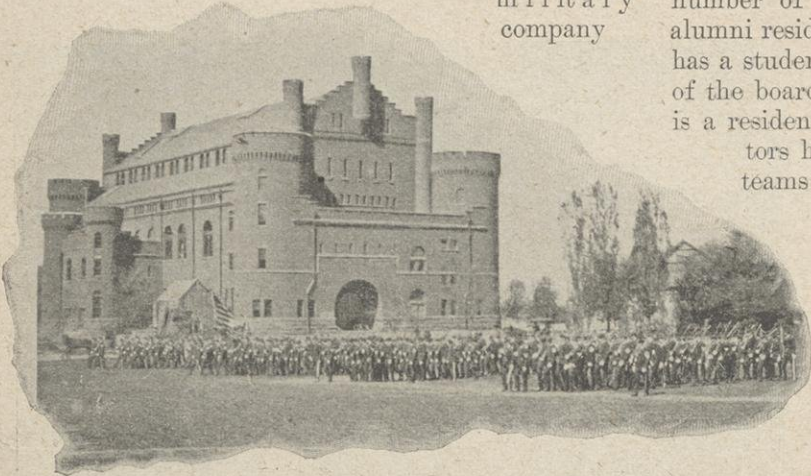
### The Military Department.

**S**INCE its reorganization in 1897 the University Regiment has consisted of two battalions of three companies each. In addition there is a brass band of twenty-two pieces, which is probably the best student band in the West, also a bugle corps of eight members, and a signal company. Freshmen and Sophomores only are required to drill, but so great is the interest taken that all the officers above the rank of lieutenant come from the Senior and Junior classes.

The uniform is that of the National Guard of Wisconsin, except that the trousers are of the same color as the blouse. The regiment is officered like the National Guard except for the smaller number of companies.

Every effort is being made to increase the interest in the military drill. The band frequently plays for marching. About the middle of March a competitive drill is held between the six companies, and the winning company receives medals for each member. At the same time an individual competitive drill in the manual is held and a medal awarded to the winner. These drills arouse an interest not only among the members of the regiment but also among outsiders. About 1,000 spectators watched the competitive drill of 1897 and many more would have been present had not the number been necessarily limited by the capacity of the hall.

This year the Regents of the University have appropriated a liberal sum of money with which to defray the expenses of a student military company.



A BATTALION OF THE UNIVERSITY REGIMENT PARADED ON LOWER CAMPUS.

from one of the neighboring universities, which will be invited to come here and compete against the company winning the local competitive drill. In May there is held a competitive drill between the two local battalions.

About the first of June the department closes for the year, the last drill being a grand sham battle in which both artillery and infantry engage.

During the winter months a series of very pleasant informal dances are given by the regiment, one feature of which is that every gentleman dancing is required to appear in uniform. This requirement gives a distinctively military appearance to the affairs, which are among the most interesting social functions in which the great body of University students have a part.

### The Athletic Association.

The team athletics of the University are managed by the students themselves through a careful system of representation and faculty supervision and control. The student body is the source of power, and constitutes *in toto*



LIEUT. J. C. W. BROOKS, U. S. A.  
COMMANDANT OF THE REGIMENT.

assisted by the enthusiasm and open-handed generosity of the people of Madison, who have made it possible for the teams and crews to have the services of expensive coaches and take trips which without their aid would not have been possible. Thus it is seen that the University bears none of the expenses for team athletics. The University, however, furnishes the training teams with quarters at the gymnasium and has provided a magnificent athletic field at Camp Randall.

The officers of the association and the managers of the several teams have offices at the gymnasium building, where they may be found at a definite hour and thus greatly facilitate the business of the association.

### Team Athletics.

The principal teams of the University

which compete with similar organizations from other institutions are the football eleven, the track team, the crew, the baseball nine, and the gymnastic team. In addition there are the tennis players and the basket ball team. Besides the 'Varsity teams class teams are organized to compete in local contests and particularly in the case of boating and football these organizations are important in developing the material for the 'Varsity aggregations. The "freshman crew," the so-called "second football eleven," and the "scrub baseball nine," like the similar organizations of Eastern colleges, are the running mates of the corresponding

'Varsity teams, and by the sharpest rivalry they serve to keep the Varsities at their best.

The Freshmen will race this year with the crew of the St. John's Military Academy.



**FOOTBALL.**—The contests which are pre-eminent for popularity with the student body

are the football games, in which the University has taken first place among all Western colleges. Since 1891 when she forged into the first-class in the Middle West, no college in that region has made so enviable a record in football as Wisconsin. Especially during the last two seasons, since the team has been under the masterly handling of Phil King, the Princeton quarter back, Wisconsin has distanced all her rivals. In the fall of '96 she was the virtual although disputed champion, the only records against her being the tied score in the game with Northwestern on Thanksgiving day and the defeat in the Coliseum at the hands (or rather feet, teeth, etcetera) of the Carlisle Indians. Dur-

the Athletic Association of the University. This association elects annually a board of directors, which is made up of student members of the association, together with a fixed number of members from the faculty and alumni resident in Madison. The association has a student president who is also chairman of the board of directors, while the treasurer is a resident alumnus. The board of directors has general supervision of all the teams of the University, and elects the managers of foot ball, base ball, track athletics, and tennis, and the commodore of the navy. These managers are directly responsible to the board, which furnishes an annual detailed report to the mass meeting of the Athletic Association. The board of directors also passes upon the eligibility of the members of the various teams, sub-

ject to the revision of the Athletic Committee of the Faculty. Thus the students have full control of the financial management of their teams, provide their own coaches, make their own schedules and contracts, and raise their own moneys. In this they have been much



ing the last season ('97) her record was one of unbroken victories in all intercollegiate games, and it was a period of popular triumph. A season begun amid discouragements, closed with the following clean record of victories:

*Practice Games.*

Wisconsin..... 30	Lake Forest..... 0
Wisconsin..... 11	Beloit..... 0
Wisconsin..... 29	M. H. S..... 0

*Championship Games.*

Wisconsin..... 39	Minnesota..... 0
Wisconsin..... 23	Chicago..... 8
Wisconsin..... 22	Northwestern..... 0

Total, Wisconsin 154 All others..... 8

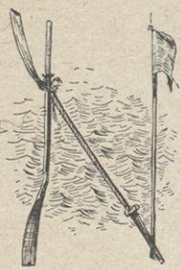
The only defeat (6-0) was met in a practice game with a team picked from ex-Wisconsin players, with the 'Varsity's own coach, Phil King, as captain of the team, in his old position of quarter back.

**T**RACK ATHLETICS.—Upon the track Wisconsin has been equally invincible during the last two years, and in the annual intercollegiate contests at Chicago has won easily over all comers. In 1896 her team score 46 points against 22 of Grinnell College, her nearest rival, and 16 points of Chicago, which stood third in the contest. In the intercollegiate meet of 1897 her team scored 47 points against 74 of the other thirteen colleges, Michigan coming nearest her with 17 points. In hurdles she led the East as well as the West, and her sprinter, Maybury, now President of the Western Intercollegiate Athletic Association, was second only to the phenomenal Wefers. Though in the track and field events at the Gymnastic Carnival held in Chicago in March, 1898, Wisconsin took second place, this is sufficiently accounted for by the fact that as first given out this was to be a purely gymnastic carnival, and when information of the introduction of track events was received there was not suf-



ficient time to put the men in training. In the totals of all events at this carnival Wisconsin took first place, with 77 points against 69 scored by Chicago.

The splendid facilities offered by the gymnasium for winter practice, and the excellent tracks and convenient training quarters at the athletic field, have contributed in no small measure to this success.



**A**VAL DEPARTMENT.—In rowing, Wisconsin has always labored under the disadvantage of being the only Western university or college which supports aquatics, hence her crews have been compelled to go long distances and make extremely expensive trips in order to meet college crews. At the first the Wisconsin crews met city aggregations such as the Delaware Boat Club of Chicago and the Minnesota Boat Club of Minneapolis. For a number of years there were annual races with the latter upon Lake Minnetonka, near St. Paul. After a couple of such victories, however, the crew, in the spring of '96, ventured to take a trip to the East, where it met and signally defeated the Yale freshmen by fifteen lengths in a two mile race on Lake Saltenstall. Last year they rowed the Yale 'Varsity on the same lake and were defeated, after a spirited contest, by about three lengths.

No branch of University athletics is under

the entire body of students and townspeople.

A coach is supplied for the ball team to instruct in the details of the game, especially in scientific batting, in base-running and in general team play. The third floor of the gymnasium is fitted up with a "cage" for winter practice in throwing, catching, and batting.



**TENNIS.**—In tennis, as in baseball, the University has not in recent years been especially strong. This is not, however, for lack of facilities. The student "tennis association" has half a dozen excellent courts, and the game is played with considerable enthusiasm. That Wisconsin has not won any notable laurels in this field of athletics is doubtless in no small measure a matter of chance, since it is not the team or aggregation of players but the occasional star performer who distinguishes himself in this sport and achieves victories for his college. We have not happened to have such, though the sport has been widely enjoyed among the students.

The faculty has played the game very enthusiastically, has an association of its own, with three fine courts and a large number of excellent players. A number of local tournaments are held each year, and usually one in which both faculty and students participate. In the tournament held in 1897, the faculty won with ease. There is an indoor court in the gymnasium for winter practice of the special lovers of the racquet, so that this sport may be indulged in at all seasons of the year.

**H**AND AND BASKET BALL, ETC.—The game of hand ball has largely taken the place of tennis during the winter season. For this game there are five courts in the base ball cage, and they are thronged with players during all gymnasium hours. Basket ball is played enthusiastically in the ladies' gymnasium, and contests between the rival teams take place near the close of the season.

Basket ball has not been played so much among the men since hand ball has acquired such popularity.

more excellent discipline and coaching or has a finer equipment. Mr. O'Dea, who teaches the famous Yarra-Yarra stroke, is an ideal coach in every respect and has been continually solicited by Eastern colleges.

The navy consists of several eight-oared racing shells, two eight-oared gigs used for practice and class races, and a number of pair-oared practice gigs. Every afternoon early in the year five or six crews enter the tank in succession and receive instruction in blade-work, body-form, the riding of the slide, etc. After the lake is open they are put into shells and gradually the two crews, "The 'Varsity" and "The Freshman," are evolved.

**B**ASE BALL.—Upon the diamond, Wisconsin's teams have been less uniformly successful than in other lines of athletics, although her teams have rarely failed to make creditable showing. Last season was a fairly successful one, and the young and comparatively inexperienced players had the cordial support of

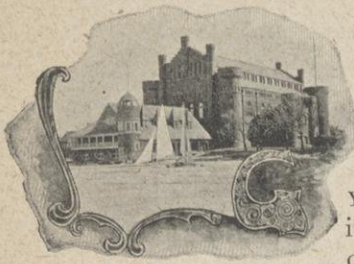


'VARSITY TRACK TEAM OF 1897. WESTERN INTERCOLLEGIATE CHAMPIONS.



'VARSITY CREW.





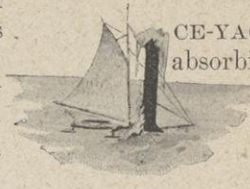
On the occasion of the regattas the several classes compete in races with row boats, in swimming races, and other aquatic sports.

**YMNASTIC TEAM.**—With its excellent gymnasium facilities, the University of

cent years been given in May under the care of the University Athletic Association, and which draws together hundreds of youthful athletes from the high schools of all parts of this and adjoining states.

The beneficial influence of the University athletics upon high school efforts is observable in the achievements of the students of the Madison high school (the Western high

college cardinal and gay with parasols and ribbons.



**ICE-YACHTING.**—Though of less absorbing interest to the student body than the purely athletic contests, nothing can make a more attractive picture than the fleet

of white-winged ice-yachts when assembled for one of the great regattas, which take place on Lake Mendota at frequent intervals during the winter season. Yachts are collected from both lakes Mendota and Monona, making a fleet of seventy or eighty boats. Many of these yachts are owned by students or by student associations and fraternities.

### Out of Door Exercise and Sport.

Aside from the public contests and the regular athletic work of the teams there are numberless out-of-door amusements which we should not neglect to mention. Lake and wood beckon on every hand and at every season. In the spring and fall there is excellent duck shooting and fishing; in the summer there is swimming, sailing, and general boating, then in the winter the lake still invites to skating, curling, skate-sailing, and ice-yachting. There is fine wheeling on the paved drives which run on either side of the lakes, and cross country walking and running are not to be despised amid such amiable surroundings.

In the summer season the shores of the lakes are dotted with camps. A considerable proportion of the townspeople close up their residences in the city and move their families to little cottages or tents across the lakes. The little steamers regularly ply between the city and the principal piers, skirting the lake and stopping conveniently near to the groups of camps. At this season the delights of the lakes are enjoyed also by summer visitors who, fleeing from the heat of Chicago and the larger cities, find the desired refuge on the shores of Mendota and Monona.

On the shores of Lake Monona are the grounds of the Monona Lake Assembly, where especial out-of-door gatherings are held each summer and addresses delivered by men of national reputation.



Varsity Gymnastic Team of 1898, Western Intercollegiate Champions.

Wisconsin should stand foremost among Western universities and colleges in the number and quality of its gymnasts. That such is in reality the case was seen at the first Western Intercollegiate Gymnastic Carnival which was held at Tattersall's, Chicago, on March 5, 1898, and at which the leading Western institutions, with the exception of Michigan, were represented. This contest consisted of work on the horizontal and parallel bars, the side and long horses, and rings, besides tumbling, fencing, and wrestling. Individual prizes were given in each of these specialties, seventeen being carried away by Wisconsin. The intercollegiate team records follow:

Wisconsin.....	57
Chicago.....	27
Illinois.....	8
Minnesota.....	4
Northwestern.....	0

In the winter season there have been held in the University gymnasium one or more gymnastic in-door meets, which have aroused a great deal of interest and have been largely attended by the townspeople and the students.

### Athletic Contests in Madison.

The public athletic contests held at the University are very numerous and very interesting. During the fall months of course the football contests are the centers of interest, and they arouse an enthusiasm and excitement which must be participated in to be understood. For the track athletes there are in-door meets during the winter and two field days during the year—the sophomore-freshman field day held in the fall, and the college field day in the spring. Then there is the interscholastic meet, which has of re-

school champions in football), who owe not a little of their phenomenal success to the coaching and example of the Varsity teams.

From the spectacular point of view there are few more brilliant events than the regattas which are held in the spring for the freshman and the class races. The shores are then alive with people and the lake is dotted with hundreds of small craft decked in the



Varsity Crew of 1897, Western Champions.





VARSITY BASE BALL TEAM OF 1897.

## Wisconsin Songs.

**S**INGING of college songs, that pleasant feature of the years of college life, has been somewhat neglected at Wisconsin. Except on the occasions of the great intercollegiate athletic battles, when rallying songs have been composed and sung by the students, the singing of college songs has been largely left to the glee clubs of the young men and the young women.

It is most appropriate that the fiftieth anniversary of the University's birth should be in some sense signalized by the appearance of a student song book. A book of over one hundred pages of songs with music is about to issue from the press, which besides a nucleus of the favorite college songs common to all our colleges, will contain a great number of "Wisconsin" songs, both new and old. Neatly and clearly printed in its dress of the college cardinal, this artistic little volume will, it is hoped, greatly encourage choral singing among the students. What more attractive picture to hang in the halls of mem-



COACHING AROUND LAKE MONONA.



WINNING BASKET BALL TEAM OF 1897.

ory than the body of students assembled on the great sloping green of the University campus, blending their youthful voices in the swelling hymns or the swinging, rollicking songs of their beloved *alma mater*. It is in such ways as this that those intangible but lasting ties which make up the *esprit de corps* are developed and strengthened in a great body of men actuated by common purposes.

"The 'Wisconsin Hymn' of Mrs. Adams and the 'Fair Varsity' of R. N. McMynn are selected to represent one class—the university hymns—while the Football Rallying Song and the Crew Song represent the stirring college songs.

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## WISCONSIN HYMN.

(Tune, Austrian Hymn.)

On the shores of fair Mendota,  
Stands the mother we would praise;  
Rare her gifts and rich her offering,  
Glorious all her walks and ways.  
Crown her, O ye sons and daughters!  
Give to her your heart and voice;  
Bid the world sing loud her anthem,  
And in all her work rejoice.

With a mother's love she labors,  
Shields from danger, guards from foes;  
Knowledge, wisdom, virtue, honor,  
Are the blessings she bestows.  
Sons and daughters, laud her bounty!  
Unto you she gives her dower!  
Oh, reflect in life her glory,  
High exalt and prove her power.

Hark! a mighty host are pledging  
Unto her their noblest, best,  
And with loyal hands outstretching,  
Adding jewels to her crest.  
But the gems she has in keeping  
Are for those who watch and wait,  
But without her lofty temples  
All her words to deeds translate.

These are they for whom she watches,  
As with open arms she stands,  
Bearing ever priceless treasures,  
And her good gifts in her hands.  
Royal mother, fair and gracious,  
See! we come to meet thy call;  
Make us worthy all thy blessings,  
Grant we keep it when it fall.

—Mary M. Adams.



## FAIR VARSITY.

Near campus green floats silver sheen  
Of lake 'neath azure skies,  
While far above, the hill we love  
And stately buildings rise.  
To this thy home with joy we come  
To pay thee homage sweet,  
'Tis here in youth we search for truth,  
Where love and duty meet.

We can smash right through their center,  
We can run around their end.  
We can carry on the pigskin  
Past the goal they can't defend.  
Minnesota cannot hold us, no,  
Not all her mighty men,  
So we'll down that old maroon of hers again.

## Chorus.

Cheer, boys, cheer, etc.

## CREW SONG.

O'er Mendota's waters moving  
With measured sweep and strong,  
Waking a thousand ripples,  
Gracefully glides a crew along.  
Follow the rhythmic motion,  
Rapidly drawing them from view,  
Oh, 'tis the Yarra Yarra stroke,  
'Tis our Wisconsin crew.

## Chorus.

Row, row, row,  
We row on Mendota,  
We row on Monona,  
A tribute we bring,  
A pean we sing,  
To our sturdy Wisconsin crew.

Hark to a doleful echo  
Down in the "wooden nutmeg state,"  
While at the finish the Badgers  
Patiently for the freshmen wait.  
What is the trouble with "Eli?"  
What makes the atmosphere so blue?  
O, 'tis the Yarra Yarra stroke,  
'Tis our Wisconsin crew.

—H. D. Sleeper.



COMMANDANT AND COMMISSIONED OFFICERS OF THE UNIVERSITY REGIMENT.

The region round is hallowed ground,  
Camp Randall, hail to thee!  
Where heroes stood who gave their blood,  
Humanity to free.  
Thy kingdom, this rich realm of bliss,  
Wisconsin, Queen thou art;  
And thy fair fame from blot or blame  
We'll guard till life depart.

Dear mother, these blest memories  
Shall bloom forever sweet;  
In dreams we'd be again with thee,  
Where love and duty meet.  
May thy dear name our hearts enflame  
To thought and deed sublime;  
Our lives shall raise thy song of praise,  
And sing it through all time.

—R. N. McMynn.

## FOOTBALL SONG.

(Tune, Hot Time.)

In the wild and woolly wilderness  
Where winters are so cold,  
Lives the Minnesota's football team  
That wears maroon and gold.  
Oh, we know these wily gophers for  
We've played with them before,  
We remember ninety-six and ninety-four.

## Chorus.

Cheer, boys, cheer! Wisconsin's got the ball,  
U, Rah, Rah! Oh, won't they take a fall,  
For when we hit their line they'll have no  
line at all.  
There'll be a hot time at Wisconsin tonight.

So let us  
Cheer, boys, cheer! we're going to win this  
game,  
The gophers all will hide their heads with  
shame,  
So let us shout and yell, and swell the car-  
dinal's fame.  
There'll be a hot time at Wisconsin tonight.

Oh, we'll raise a shout of victory  
That rings for miles around,  
Till the streets of Minneapolis  
Shall echo with the sound.  
Toot the horns and blow the trumpets, boys,  
And bang the big base drum,  
For to celebrate our victory we come.

## Chorus.

Cheer, boys, cheer! Wisconsin's got the ball,  
U, Rah, Rah! Oh, won't they take a fall,  
For when we hit their line they'll have no  
line at all, etc.

—Philip Loring Allen.



THE UNIVERSITY BAND.



# SONG OF VICTORY

Some people say, I've heard it, we've heroes now no more  
Heroes there were in '60 and in the days that are of yore;  
Poor hapless creatures! let it pass: they had not heard of him,  
Who with our team of '96 for battle left the Gym.

CHORUS

Richards at the hurdles, Maybury's dashes hot  
On for the words to tell the might of Cochems winning shot!  
Schuchardt after Richards, Egler's jump and Downer's run  
Hurrah for these our heroes, in that hot June sun!

I've heard old heroes brag of the foes they had to meet  
Green recruits they often were, tho' the truths not always sweet.  
Our opponents at Chicago, where we proved ourselves the best  
Were the victors on the cinderpaths of all this Central West!

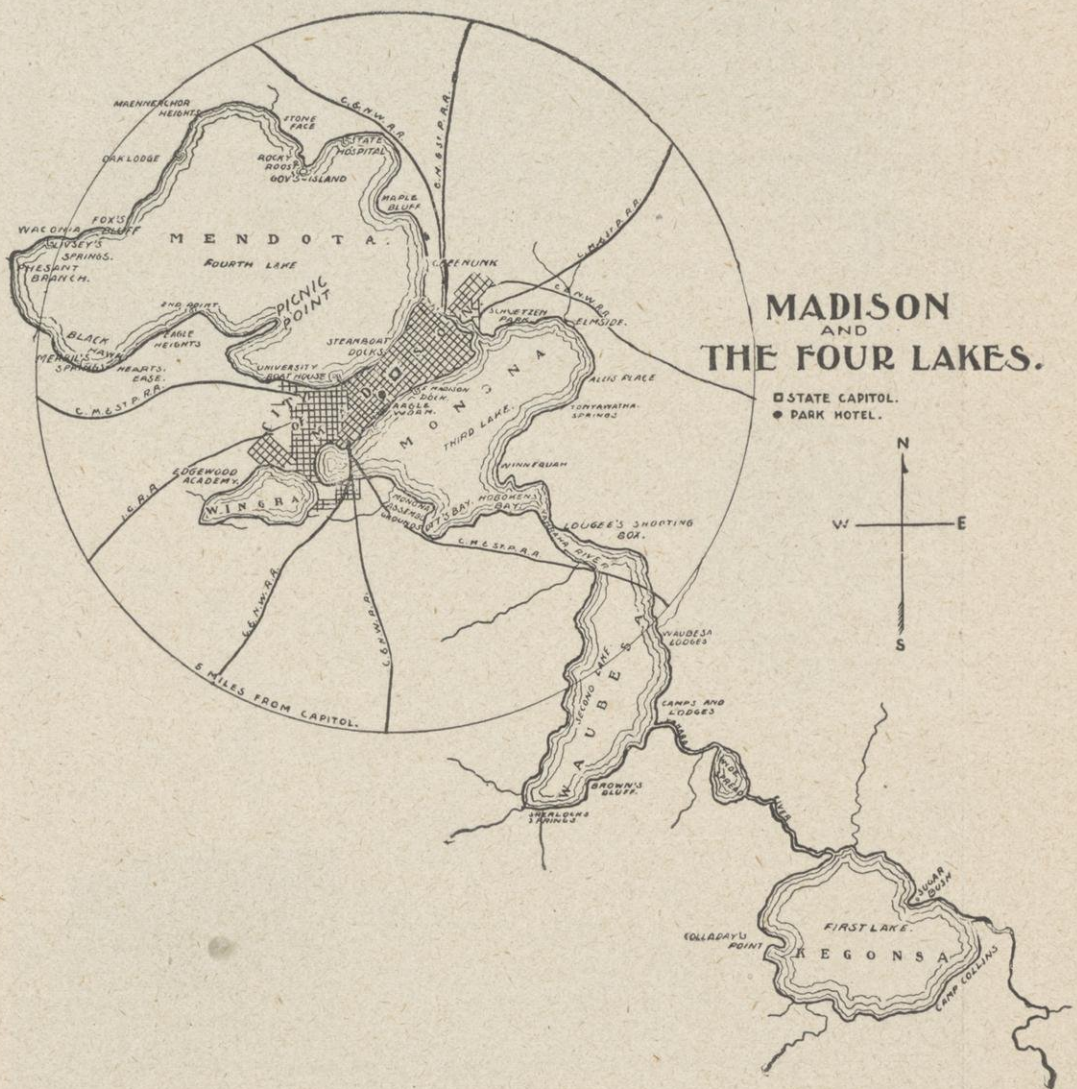
Fire! Maybury's off while the rest are getting ready;  
That's the stuff our Badger heroes made of, quick yet steady,  
With a brain like Cochems which can match his hammer throw,  
And Richards, dauntless Richards, takes the hurdles high and low.

They were heroes, every one of those who left the Gym;  
If they did no more, they shouted, yes shouted with a vim!  
They Urah-rahed Wisconsin! Hurrahed with might and main!  
And thus brought back the invincibles with victory in their train.

P. HEINE









ES.



Picturesque University IWR  
of Wisconsin .P58  
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