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## The Wisconsin Alumni Magazine

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"A Magazine Aiming to Preserve and Strengthen the Bond of Interest  
and Reverence of the Wisconsin Graduate for His Alma Mater."

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This directory affords a convenient guide to Wisconsin Alumni of the various professions who may wish to secure reliable correspondents of the SAME PROFESSION to transact business at a distance or of special professional character. It is distinctly an INTRA-PROFESSIONAL directory. Alumni of all professions, who by reason of specialty or location are in a position to be of service to Alumni, are invited and requested to place their names and addresses in this directory.

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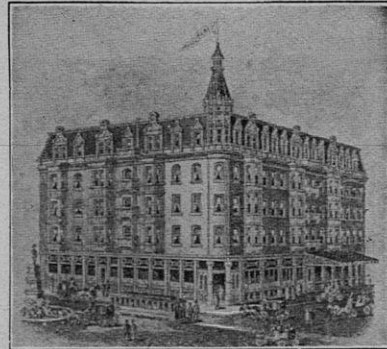
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Portrait of  
DAVID BOWER FRANKENBURGER, '69, L. '71.  
Instructor 1869-1871. Professor 1878-1906.  
Presented 1912 by the Class of '87.

# The Wisconsin Alumni Magazine

I, a wandering student, seeking knowledge, came knocking at the gates of the great University of Wisconsin, and it took me in, filled me with inspiration, and when I left its doors the kindly people of the state stretched out welcoming hands and gave me a man's work to do.—An Alumnus.

Volume XIV

Madison, Wis., February, 1913

Number 5

## SUCCESSFUL WISCONSIN ENGINEERS



IT WOULD be out of the question, in a publication of limited pages, to do justice to the great number of successful engineers who have brought credit and honor to Wisconsin. If we mention those who stand out prominently in our mind at the moment it will be only later to regret the omission of some name we should wish to credit. However, at the risk of fateful omissions and with strong premonitions of serious regrets, we give herewith short sketches compiled by R. C. Disque, '08, of a number of graduates whose successful work in the field of engineering has won them places of distinction:

### C. R. VAN HISE, '79.

President, The University of Wisconsin.

Perhaps the best known alumnus of the College of Engineering, and, indeed, of the entire university, is President Charles R. Van Hise, who was graduated from the course in mining engineering in 1879.

Soon after his graduation President Van Hise turned his attention to the purely scientific phases of geology, and received the degree of Master of

Science in 1882. Since that time he has been continuously associated with the university and has risen from the position of instructor to that of president of the university. He has won fame as a scientist, as an educator and as an applied geologist. His notable scientific investigations in the fields of pure geology mark him as one of the foremost geologists of the country, and his long and successful career as an educator has placed him high in the field of education.

While his fame rests primarily upon his work in these fields, he has won a place in the foremost rank of applied geologists and mining engineers. The spirit of the engineer is manifest in his intense interest in the practical problems of every-day life, his keen appreciation of the qualities that make for success in practical life and the embodiment of these qualities in his own character. In a large measure he stands for the ideal which the College of Engineering is striving to realize, namely, the development of men filled with the deepest love for the pure forms of human knowledge, moved by an earnest desire to bring these into the service of mankind and fitted with the qualities of character so necessary for the accomplishment of this great purpose.

**MAGNUS SWENSON, '80.**

Capitalist.

Among the engineering alumni who have achieved notable success is Mr. Magnus Swenson, who was graduated from the course in metallurgical engineering in 1880.

During the three years subsequent to his graduation he was connected with the university as instructor under the late Professor Daniells and as chemist of the Experiment Station. His technical work included an extensive study of the water supply of the city of Madison.

In 1883 Mr. Swenson became interested in industrial work. By means of machinery of his own invention he had a prominent part in the development of the sugar industry, and he was a pioneer in the recovery of waste products in various industries including glycerine in the soap industry, tank waste in the packing industry and soda in paper manufacture. In 1898 he retired from these interests and became active in the development of the water powers of southern Wisconsin. Two large plants, one at Kilbourn and one at Prairie du Sac represent the results of his work in this field.

Mr. Swenson's direct service to the state has been of great value. He was regent of the university from 1904 to 1911, being chairman of the executive committee and of the board during part of the time. He was also chairman of the executive committee of the Capitol Commission and thus had an important part in the construction of the new capitol. In both official and unofficial capacities he has been of great service to the university, and especially to the College of Engineering. One important result of his work was the establishment of the department of Chemical Engineering.

**C. T. PURDY, '85.**

Purdy &amp; Henderson, Civil Engineers.

Mr. Corydon T. Purdy, the distinguished consulting engineer of New York City, is a graduate of the civil engineering class of 1885. After having finished his college course he was city engineer of Eau Claire for about two years and spent a similar period as electric inspector and designer in Pittsburgh.

Mr. Purdy's career as consulting engineer dates from 1889 when he opened a partnership office in Chicago. After dissolution of the partnership he worked alone during a short time and then became associated in partnership with J. N. Phillips, '87. Upon the death of Mr. Phillips, soon afterward, Mr. Purdy took into partnership Mr. Lightner Henderson, an employee, and thus formed the firm of Purdy & Henderson, which was later incorporated.

The firm of Purdy & Henderson has business extending over the entire North American continent, with four offices, at New York, Boston, Chicago and Seattle, and has extensive interests in Cuba, Porto Rico and Canada. Their work in the United States is strictly professional, while that in foreign countries includes contracting and designing. They have designed the structural work for some of the most notable buildings in the United States, including those of the Waldorf Astoria Hotel and the Plaza Hotel of Chicago, and the Metropolitan Building of New York City with its 700 foot tower. Their practice now includes both steel and concrete work.

Mr. Purdy has been of great service to the profession of structural engineering and to the art of building construction. His early professional life in Chicago was devoted at considerable sacrifice to the promo-

tion of scientific design of steel structures. Through his efforts architects and builders were brought to recognize the importance of employing structural engineers in large construction work, and in this practical way he has had an important part in the evolution of structural engineering. The reward of his efforts has come in the form of a large and lucrative practice and in the enviable standing of his firm in the profession.

Mr. Purdy is a member of the American Society of Civil Engineers, the Institution of Civil Engineers, the Western Society of Engineers, the Engineers' Club of New York and the Arctic Club of Seattle.

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#### **W. C. PARMLEY, '87.**

Consulting Engineer.

Mr. W. C. Parmley, distinguished construction engineer of New York began his career in San Francisco, as partner in a firm of constructing engineers. His work there involved very largely water developments like irrigation and canal projects. In 1889 he became assistant engineer on the Bear River Canal in Utah, which was at that time the largest irrigation canal in the United States. During this period he was engaged also in water works construction for the city of Ogden.

From 1891 until 1904 Mr. Parmley was continuously engaged as city engineer. As city engineer of Ogden he was engaged principally in building construction; as assistant engineer of Peoria, Ill., he had charge of the design and construction of extensive sewer systems; and as assistant city engineer of Cleveland he built the great sewer system of that city.

During the last eight years he has been associated with E. S. Nethercut

in the consulting profession in New York City. The work of the firm includes the design and construction of water and sewage works as well as a variety of structural works. The Parmley system of reinforced concrete developed by this firm has become of great importance in the engineering design of pipe lines.

---

#### **E. S. NETHERCUT, '89.**

Consulting Engineer.

Mr. E. S. Nethercut, of the firm of Parmley and Nethercut, received his degree in civil engineering in 1889. For two years after his graduation he was engaged as draftsman for consulting engineers and industrial plants.

In 1891 he entered the service of the Page Iron Works as draftsman and for sixteen years he remained with that company, and rose rapidly to the position of chief engineer. His work consisted largely in the design and construction of track for steam and electric railways.

After having left the Buda Co., successors to the Page Iron Works he was engaged as consulting engineer for the Public Service Commission of New York City. His work consisted of appraisals of the track and paving of the surface lines of New York and Brooklyn and of the elevated lines of Brooklyn.

During the past two years Mr. Nethercut has been vice-president and secretary of the Parmley and Nethercut Co. of Chicago and New York. This company is engaged in consulting and contracting work on sewage, and water supply systems, having designed and developed the well known Parmley system of rein-



forced concrete pipes. Its business is done in all parts of the United States.

---

**G. G. THORP, '91.**

Second Vice-President, Illinois Steel Company.

During the year following his graduation from the mechanical engineering department, Mr. G. G. Thorp held a fellowship at the university, dividing his time between instruction and research work.

Since he left the university in 1892, he has been continuously engaged in the iron and steel business. In 1892 he entered the service of the Illinois Steel Company as superintendent of the testing department at the North Works. Shortly after this he was transferred to the Joliet Works of the same company with the title of Assistant Master Mechanic, and was given charge of the maintenance of the mechanical equipment. This position he held for three years.

In 1895 Mr. Thorp severed his connection with the Illinois Steel Company and became master mechanic and chief engineer of the Colorado Fuel & Iron Company at Pueblo. In this position he had charge of the design, construction and operation of the mechanical equipment. When he returned to the Illinois Steel Company in 1898 he became assistant general superintendent of the Joliet Works and was soon afterward made general superintendent of those works.

The most important work done by Mr. Thorp during the next four years was the design in 1901 of the Clairton Steel Works located near Pittsburgh. It was shortly after the completion of these works that the Illinois Steel Company was absorbed by the United States Steel Corporation. At this time Mr. Thorp was made vice-president of the Subsidiary Illi-

nois and Indiana Steel Companies, with general charge of the design and construction of the plants in the Chicago district, including the Gary plant.

In addition to being second vice-president of the Illinois Steel Company, Mr. Thorp holds the positions of vice-president of the Gary Land Company, vice-president of the Gary Heat, Light & Water Company, and director of the Gary State Bank.

---

**E. P. WORDEN, '92.**

Chief Engineer, Fred M. Prescott Steam Pump Company.

Mr. E. P. Worden was graduated from the course in mechanical engineering in 1892. During the first three years subsequent to his graduation he worked for the Edward P. Allis Co., the Prescott Steam Pump Co., of Duluth, and the Hamilton Manufacturing Company of Two Rivers, Wisconsin.

In 1895 he became chief engineer of the Fred M. Prescott Steam Pump Co., of Milwaukee, and has been engaged as such ever since that time. His attention has been directed to the manufacture of steam and electrically driven pumping machinery and especially to the improvement of such machinery. Under his direction the Prescott pumps have won the highest reputation throughout this and other countries. Practically all the important mining pump installations of the past ten years in this country and Mexico have been built from his designs.

Mr. Worden is a member of the American Society of Mechanical Engineers, the Lake Superior Mining Institute, the Engineering Society of Wisconsin, and the Engineers' Society of Milwaukee. He was interested in the founding of the last named and has been actively engaged in it ever since.

**E. T. MUNGER, '92.**

General Superintendent, Hudson and Manhattan Railroad Company.

The first graduate in the course of electrical engineering was E. T. Munger, the only graduate of that course in the class of 1892.

Mr. Munger has been in the main engaged in railway work. During the ten years immediately following his graduation he was employed as draftsman and wireman by the Hall Signal Company and the National Switch and Signal Company. In 1894 he became wireman and foreman for the Metropolitan West Side Elevated Railroad of Chicago, with which his firm term of service covered a period of two years. His second term of employment with this company began in 1904 when he became its master mechanic.

During the time from 1896 to 1904 he was engaged in various lines of electrical work. The first year was passed as general foreman of the Englewood & Chicago Street Railway Company, a storage battery line extending from South Englewood to Blue Island. In 1897 he was made superintendent of the Havana Electric Company and later president and general manager of the Havana Telephone Company. Four years later he removed to Green Bay, Wisconsin, where he engaged for three years in the business of electrical and mechanical construction.

The five years from 1904 to 1909 were spent with the Metropolitan West Side Elevated Railway as master mechanic and superintendent of the Hudson and Manhattan Railroad Company of New York City, a position he holds today. This company has constructed and is now operating the tunnels under the Hudson River from New York to Hoboken and Jersey City, as well as the Rapid Transit line to Newark, N. J.

**J. G. WRAY, '93.**

Chief Engineer, Central Group of Bell Telephone Companies.

Mr. J. G. Wray received the bachelor's degree in electrical engineering in 1893. His college course has been marked by activities in various kinds of work, notably that of journalism.

Mr. Wray has been continuously associated with the Chicago Telephone Company since he entered its engineering department in June, 1893, and has been engaged in a wide variety of engineering work for that company. He has steadily made his way from the position of cable tester through those of installation foreman, chief clerk, assistant chief engineer, chief inspector in the maintenance department, assistant superintendent of maintenance, superintendent of maintenance, electrician, superintendent of equipment, to that of chief engineer.

Mr. Wray holds today the position of chief engineer for the Central Group of Bell Telephone Companies, including the Chicago Telephone Company, the Wisconsin Telephone Company, the Central Union Telephone Company, the Cleveland Telephone Company, and the Michigan Telephone Company. During his connection with these companies he has had general charge of the construction of over \$55,000,000 worth of property and has invented a number of devices now in use by the Bell system.

Mr. Wray takes a keen and very active interest in professional affairs, being a member of the American Institute of Electrical Engineers, the Western Society of Engineers, the Illuminating Engineering Society, the Chicago Electrical Club and the Society for the Promotion of Engineering Education. In addition, he is one of the most loyal and active alumni of the university.

**H. B. ALVERSON, '93.**

Superintendent Cataract Power and Conduit Co.

Mr. H. B. Alverson is a graduate of the electrical engineering course, class of 1893. For one year after his graduation he pursued graduate study at Cornell University.

From 1894 to 1896 he was employed by J. G. White and Company on a large variety of electrical construction work, prominent among which was the construction of the transmission line from Niagara Falls to Buffalo and the electric railway between those two cities. Much of this work was of a pioneer nature.

During the past sixteen years Mr. Alverson has been associated with the Cataract Power and Conduit Co. of Buffalo. For part of this time he was engineer in charge of the important construction work involved in the transmission and distribution of Niagara power, and for the remainder of the time he has been in general charge of the operation of the system.

The company with which Mr. Alverson is connected transmits annually 250,000,000 K. W. H. of energy from Niagara Falls to Buffalo, where it distributes it for power and lighting purposes.

Mr. Alverson is a member of the American Institute of Electrical Engineers, the Engineers' Society of Western New York and the National Electric Light Association.

**H. A. LARDNER, '93.**

Resident Manager, J. G. White & Company, San Francisco.

Having been graduated in 1893, Mr. H. A. Lardner became engaged

in railway and electrical construction work for J. G. White & Company. After two years of minor work with the company he spent two more years as instructor in electrical engineering at the State College of Pennsylvania. During the next three years he was occupied in construction and drafting work in Buffalo and New York. In New York he was electrical superintendent of the Borough of Manhattan Electric Company and two smaller companies in Manhattan.

In 1900 he returned to J. G. White & Company as assistant electrical engineer for the New York office. By 1908 he had been chief engineer and become general manager of the engineering department. During this period he had important work in connection with construction and engineering contracts. As part of his work he traveled extensively for the purpose of examining and making reports on engineering properties. This work took him to San Francisco, where in 1908 he opened an office for J. G. White & Company. Since then he has been resident manager of that office.

In addition to his managing this office for one of the largest engineering concerns in the country, Mr. Lardner is active as a member of the American Institute of Electrical Engineers, the American Society of Mechanical Engineers, the New York Electric Society, the Engineers' Club of New York, the Engineers' Club of San Francisco, the Pacific Union Club, the Family Club of the same city and the California Club of Los Angeles.

**WILLIAM A. BAEHR, '94.**

Consulting Engineer, Chicago.

Mr. William A. Baehr was graduated from the course in civil engineering in 1894. During the first two years subsequent to his graduation

he was engaged in structural work with the Wisconsin Central Railroad, the Edge Moor Bridge Works of Edge Moor, Delaware, and the Wisconsin Bridge & Iron Works of Milwaukee.

In 1897 he entered the service of the Milwaukee Gas Light Company, and from that time until 1909 he was continuously engaged in the gas business. After two years with the Milwaukee company as superintendent of construction, he was made superintendent of the gas department of the Denver Gas and Electric Company in charge of construction and operation. In 1903 he entered the employ of the Laclede Gas Light Company of St. Louis as engineer in charge of the operation and construction of the plants and distributing systems.

In 1909 Mr. Baehr established himself as consulting engineer in Chicago. He has risen to a high place in this profession, ranking among the most prominent of the engineers in Chicago. His work consists largely of the construction and operation of gas and electric plants and of valuation work in connection with such plants. Among the notable plants that have been appraised by him are those of the Peoples Gas Light and Coke Company of Chicago, the Brooklyn Union Gas Company, and the Georgia Railway & Power Company.

---

#### G. B. EVANS, '94.

Chief Engineer, Laclede Gas Light Company.

Being unable to find a suitable position during the year subsequent to his graduation, Mr. G. B. Evans returned to work on his home farm. Finally, in August, 1895, he secured a position as draftsman with the Edge Moor Bridge Works. Until June, 1903, he continued to work as

draftsman for this company, the Wisconsin Bridge & Iron Company, the Edge Moor Bridge Company, the Brown Hoisting Machinery Company and the American Bridge Company. This work of this period included direct charge of large individual contracts.

In June, 1903, Mr. Evans entered the service of the Laclede Gas Light Company of St. Louis as engineer of construction. For four years he remained with this company, serving as superintendent of Station A and later as general superintendent of stations. He left the Laclede Company in 1907 to serve as assistant to John Williamson, a consulting engineer of Chicago.

After having worked two years on important construction work for Williamson he returned to the Laclede Gas Light Company to take charge of construction work and plant operation. He is now chief engineer of the company, having charge of construction and operation of its gas and electric properties.

---

#### F. A. VAUGHN, '95.

Consulting Engineer.

Before graduation, Mr. Vaughn had been engaged for two years in the business of electrical contracting. After having received the first degree in electrical engineering in 1895, he was employed for one year in the testing department of the Standard Telephone Manufacturing Company of Madison and for a similar time as draftsman for the Gibbs Electric Company of Milwaukee.

In 1896 he accepted a position in the electrical engineering department of the Milwaukee Electric Railway & Light Company. He was continuously in the service of this company for almost fourteen years. Having served in the departments of power

house operation, statistics and drafting, he became chief draftsman in charge of the electrical equipment of power and sub-stations. He then became superintendent of the meter and testing departments with supervision over the design of power and sub-stations, as well as lighting and railway distributing systems. His next position was that of electrical engineer of the lighting department. As such he had charge of the design of almost every kind of lighting and railway distributing system as well as a high tension transmission system.

Since April 1, 1910, he has been a member of the firm of Vaughn & Meyer, consulting engineers engaged in all kinds of electrical engineering work. In addition to his commercial work, he has been more than ordinarily active in professional society work, as is indicated by his being a member of the Power Station Committee of the A. I. E. E., chairman of the Chicago Section of the Illuminating Engineering Society, secretary of the Committee on Meters of the N. E. L. A., chairman of the Advisory Committee on Street Lighting of the same association, chairman of the Milwaukee Section of the A. I. E. E., president of the Milwaukee Electrical League, and trustee of the Engineering Society of Wisconsin. As Secretary of Publication of the Meter Committee of the N. E. L. A., he had charge of the publication of the *Meterman's Handbook*, which has become a standard work in its line.

---

#### G. H. BURGESS, '95.

Chief Engineer Delaware and Hudson Railroad.

After graduation Mr. G. H. Burgess accepted a position with the Edge Moor Bridge Company with which he remained for two years.

Since 1897 he has been continuously engaged in railway work. His first position in this field was with the Pennsylvania Railroad Company, as assistant engineer in charge of bridge and construction work on the lines west of Pittsburgh. He next became assistant to the chief engineer of the Erie Railroad and in this position had a prominent part in the work of the Bergen Hill construction as well as other important extensions of the company's system.

Three years ago he became chief engineer of the Delaware and Hudson Railroad with headquarters at Albany, N. Y. In this work he has had extensive experience not only in strictly engineering work but also in industrial problems. Among the latter have been important problems relating to labor and the transportation of coal.

---

#### L. G. VAN NESS, '96.

Vice-President and General Manager, Merchants' Power Co., Memphis, Tenn.

After being graduated from the course in electrical engineering in 1896, Mr. L. G. Van Ness was for three years variously engaged in machine shop work, pole line, wiring, engine, meter and testing work in central stations.

In 1899 he associated himself with the Emerson-McMillan Company and occupied himself in designing and re-designing many of the electric plants under the control of the company. Conspicuous among the plants on which he worked were three of Columbus, Ohio; Madison, Wisconsin; San Antonio, Texas; Montgomery, Alabama; Denver, Colorado; St. Paul, Minnesota; Lincoln, Nebraska, and a hydraulic generating and dis-

tributing system for Quebec. From purely engineering work he soon drifted into the study of cost rate making and accounting, for both electric and gas plants. For the next two years subsequent he was associated with the Laclède Gas Light Company of St. Louis and the Union Electric Light and Power Company of the same city. His work here covered a period of two years and included chiefly the revision of the accounting systems.

In 1906 Mr. Van Ness went to Memphis, Tenn., to build an electric plant and system for the Merchants' Power Company of that city. He became vice-president and general manager of the company and holds that position today.

#### **C. W. HART, '96, C. H. PARR, '96.**

Hart-Parr Company, Charles City, Iowa.

Messrs. C. W. Hart and C. H. Parr, of the well known Hart-Parr Company, Charles City, Iowa, were graduated from the course in mechanical engineering in 1896. During their college course they pursued the same line of work, specializing in gas engineering. From their graduation in 1896 to date, they have been continuously associated in business and during this time have built up one of the largest and best known industrial plants in the Middlewest. Their product, the Hart-Parr gas tractor, has become one of the leading machines of its kind in the world.

The company was started in 1897 in the city of Madison. During the four years in Madison a very satisfactory business was built up in small gas engines of original design. A new feature of design that proved to be of great value was the oil cooling system, first introduced by the Hart-Parr Company. This feature gave a great impetus to the business, especially in the northwest where engines

were peculiarly subject to damage by freezing.

The business grew so rapidly that the plant at Madison became inadequate in 1901 and it became necessary to expand. On account of the difficulty of securing real estate at reasonable rates and of interesting capital in manufacturing in Madison, the company looked about for a new location. It was found that the necessary capital and factory site could be secured to good advantage in Charles City, Iowa, the home town of Mr. Hart. After reorganization by which the capital stock was increased to \$100,000, the entire plant was moved to Charles City. It was during the next two years that the now famous oil cooled Hart-Parr gas tractor was developed. The demand for this machine became so great that the entire resources of the company were directed to its production. In 1907 the capitalization was increased to \$200,000, and in 1911 it was further increased to \$2,500,000.

The Hart-Parr factory stands today in the front ranks of independent manufacturing plants. It represents a high state in the development of factory methods by virtue of the layout of buildings and grounds, the extended use of special machinery for the production of standard parts, the highly developed manufacturing system and the ingenious combination of testing and power plants, whereby the machines on test are made to operate the entire plant.

The Hart-Parr Company is a splendid example of the commercial possibilities of a technical education, enriched and matured by practical experience. The inspiration and confidence gained in college, combined with energy and courage, have enabled these men to establish a business which is at once a credit to themselves and to their Alma Mater and a boon to the agricultural and industrial life of the Middlewest.

**C. I. BURKHOLDER, '96.**

General Manager, Southern Power Company, Charlotte, N. C.

After graduation from the electrical engineering course in 1896, Mr. C. I. Burkholder accepted a position as machinist with the Diamond Meter Company of Peoria, Ill. After having spent a short time in the shop of that company he was transferred to the meter department, of which he became superintendent in the early part of 1898.

In March, 1898, Mr. Burkholder severed his connection with the Diamond Meter Company to accept a position in the testing department of the General Electric Company at Schenectady, N. Y. One year later he was transferred to the office of the electrical superintendent and was given charge of its factory electrical equipment. By the early part of 1900 he was made assistant to the electrical superintendent, taking immediate charge of the equipment of the factory machine tools with electric motors, of the arrangement of the electrical equipment of the generating station, of the redesign of the high tension receiving station and later of the design of the electrical equipment of a new main power station.

He remained with the General Electric Company until November, 1906, when he resigned to accept the position of operating manager of the Southern Power Company of Charlotte, N. C. In that position he had charge of all the lines and power houses of that company. In 1911 he was made general manager of the company and he stills holds that position. He has executive charge of all the equipment of the Southern Power Company, which operates five water power stations, three steam stations, seventy distributing stations and 1500 miles of high ten-

sion transmission lines. The company's system covers a territory of 300 by 200 miles, supplying it with power for railway, lighting and commercial power purposes.

**H. H. SCOTT, '96.**

General Manager, Doherty Operating Company.

Mr. H. H. Scott entered the central station field in 1898 when he became meterman for the Madison Gas & Electric Company. During his three years with this company he worked in practically all of its departments.

In 1901 he became engineer for the Lincoln Gas & Electric Company and a little later its general superintendent. In this position he redesigned the entire station and the distribution system and had charge of all construction work. One year later he was transferred to San Antonio, where his work was of a similar nature in connection with the gas, electric and traction systems. In 1903 he became president of the Traction Company and held this position until he went to New York in 1905. After remaining there one year he went back to Madison to become general superintendent of the Madison Gas & Electric Company.

Since 1906 he has been connected with Henry L. Doherty & Company and the Doherty Operating Company of New York. As engineer for the former, his work consists largely in the examination of reports of public utility properties. For the past three years he has been general manager for the latter company, which operates all the properties controlled by the former.

Mr. Scott is chairman of the membership committee of the National Electric Light Association and is at present second vice-president of this association.

**R. C. CORNISH, '97.**

Chief Engineer, American Gas Company.

Conspicuous among the leading gas engineers of the country is R. C. Cornish, of the civil engineering class of 1897.

Mr. Cornish has been engaged in gas engineering the entire period since his graduation, with the exception of one year. During this one year he was employed by the U. S. Geological Survey on topographic work in Nebraska. His career as a gas engineer began in January, 1898, when he became assistant superintendent of distribution for the Milwaukee Gas Light Company. After a year as superintendent of distribution, he was transferred, in 1900, to the manufacturing department and given charge of the erection of a new gas plant at Racine. He remained as superintendent at Racine until 1903, when he returned to Milwaukee. While in Milwaukee his work was marked by an important part in the erection of the new West Side plant and the installation of a complete gas plant for the City of Salt Lake, Utah.

Leaving Milwaukee in 1908, he went to St. Joseph, Mo., as manager of the gas plant in that city. This plant distributed natural gas obtained from the Kansas and Oklahoma fields. One significant phase of his work at St. Joseph was an elaborate investigation of the effects of electrolysis on underground pipes. Mr. Cornish's work at St. Joseph was terminated in 1910, after fifteen months of service.

In that year he became chief engineer of the American Gas Company, New Jersey. This company owns and operates gas and electric properties in various parts of the United States, chiefly east of the Mississippi River. In his present position he has interested himself not

only in the commercial phases of gas engineering, but also in the scientific side, as is evidenced by considerable work in calorimetry. He is a member of the Wisconsin Gas Association and of the American Gas Institute.

**R. F. SCHUCHARDT, '97.**

Electrical Engineer, Commonwealth Edison Company, Chicago, Ill.

During the year subsequent to his graduation in 1897, M. R. F. Schuchardt worked for short periods in the central station at Janesville, Wis., and in the office of F. B. Badt & Company, consulting engineers, of Chicago.

From June, 1898, to date, Mr. Schuchardt has been continuously in the service of the Commonwealth Edison Company of Chicago. He entered the service of the company as night operator in a storage battery sub-station, was shortly afterward sent to Omaha to take charge of the company's exhibit at the Trans-Mississippi exposition. His next position was in the statistical department, where he remained one year before being transferred to the testing laboratory. In 1903, when the first large power units in the Fiske Street Station were started, he was given charge of the electrical operating force.

In 1906 Mr. Schuchardt was promoted to engineer of electrical construction and three years later to the position of electrical engineer of the company. In the latter position he has had charge of the company's engineering construction, the most important of which has been that of the great Northwest Station, together with the accompanying extensions of the company's distributing system.

Besides attending his duties as electrical engineer of one of the largest central stations in the country, Mr. Schuchardt has been active as a



member of the American Institute of Electrical Engineers, the Illuminating Engineering Society and the Western Society of Engineers. He is a graduate member of the Wisconsin Chapter of Tau Beta Pi, and is president of the U. W. Class of 1897.

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**EDWARD SCHILDHAUER, '97.**

Chief Electrical and Mechanical Engineer, Panama Canal.

The College of Engineering is represented in the great work of the Panama Canal by Mr. Edward Schildhauer, chief electrical and mechanical engineer.

Mr. Schildhauer's first position after graduation was with J. G. White and Company, electrical engineers of New York City. With this company his work covered a very large variety of electrical construction work. After having gained valuable experience with this company he entered the engineering department of the Commonwealth Edison Co. of Chicago with which he was associated until four years ago.

When the tremendous work of the Panama Canal was undertaken Mr. Schildhauer was called to act as chief electrical and mechanical engineer. His work on the canal has consisted of the design and construction of the electrical and mechanical construction plant of the work as well as the operating plant for the finished canal. The latter is composed of steam and hydraulic stations for

furnishing power to operate the gates to draw the ships through the canal and to light the canal as well as the cities in the canal zone.

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**R. E. BAUS, '00.**

Assistant General Manager Flanders Manufacturing Company.

Mr. R. E. Baus was graduated from the mechanical engineering course in 1900. For the first six years he was engaged in electrical work, as draftsman for the Western Electric Company and Westinghouse Electric and Manufacturing Company.

In 1906 he entered the automobile field, in which he has been almost continuously engaged since that time. His first position was that of assistant superintendent of the Wayne Motor Car Co. of Detroit. Shortly after this he occupied a similar position with the Rainier Motor Car Co. of Saginaw. In 1907 he became secretary and treasurer of the Auto Crank Shaft Co. of Detroit and soon after president and treasurer of the Modern Machinery and Engineering Co. of Cleveland, O.

In 1908 Mr. Baus became Assistant Manager of Plant No. 3 of the E. M. F. Company of Detroit, and Secretary and Treasurer of the Commercial Engineering Company of the same city. During the past two years he has been assistant general manager of the Flanders Manufacturing Company, one of the largest establishments of its kind in the country.

# THE BROADENING FIELD OF THE ENGINEER

M. C. BEEBE, '97,

Professor of Electrical Engineering



NOT more than fifteen or twenty years ago the status of the engineer was uncertain as compared with that of the members of other professions. If he appeared among the elite he was probably suspected of having a piece of waste, a monkey-wrench, or an oil can concealed somewhere about him, for the term "engineer" was popularly used to designate a man who runs an engine or a locomotive. A distinction is now properly made between the man who runs an engine and the one who designs it. The former is an engine driver or engine man and the latter an engineer. Because of failure to distinguish between the two, considerable confusion exists in the popular mind as to the real work of an engineer.

In a broad sense, an engineer is one who utilizes the forces of nature in the service of man. Creative ability to devise and to perfect new and useful ways of utilizing nature's forces requires a high order of scientific and engineering ability. We had first of all military engineers; then followed civil engineers, architects, mechanical, mining, electrical, chemical, structural, hydraulic, sanitary, efficiency, research, welfare, heating and ventilating, agricultural, commercial and sales engineers, as well as many other kinds. The term "engineering" is thus being rapidly broadened to include an immense field of present-day activities. A broad distinction should be made between the engineer who conceives, plans or has responsible charge of an organization or one of its subdivisions for the execution of an engineering enterprise, and the mechanic, who, though he may be no less skilled in his spe-

cialty, carries out his portion of the undertaking as planned by the engineer in charge. In other words, we are to distinguish between the engineering professions and the trades. The following amusing incident is typical of the misconception of the real work of the engineer. When the Department of Electrical Engineering was established at the University of Wisconsin in 1892 it was warmly approved by a member of the College of Letters and Science, "because," said he, "now the electric bells of the university buildings will be kept in order." These erroneous conceptions of the engineering profession are fast disappearing. For example, in the scene of Maeterlink's allegorical play, "The Bluebird," in which Father Time selects the children, yet unborn, who are to go into the world, engineers are called for among other professions, and when two of the applicants beg to be allowed to go to become doctors they are refused because there are already too many of this profession.

There is a somewhat prevalent feeling that there are already too many engineers. If all the graduates who are being turned out of our many engineering schools are to remain within the narrow fields to which they were formerly limited, too many engineers are being trained; but it must be understood that these young men are being called upon to do an ever-increasing variety of work, as might be surmised from the increasing varieties of engineering now recognized.

Not many years ago most of our business was carried on by individuals or partnerships. As enterprises became larger this form of organization was, in general, not adequate

and the corporation idea was conceived in which small units of capital are combined to carry out enterprises of magnitude both great and small. With the growth in size of industrial enterprises, made possible by the combination of small units of capital, have come the increasingly difficult problems of combining units of effort and skill, that is, men, into organizations capable of carrying on the enterprises.

The efforts of an individual are, of course, less effective as an individual than as a part of an organization, and it is generally recognized that the organization is of much more importance than the physical equipment. An important task of the executives, upon whom the planning and perfecting of the organization depends, is then the selection of individuals who are to make up the organization. An executive's success depends very largely upon his ability to select and retain a group of men who have the ability to carry on the work assigned them, upon his success in stimulating them to their best efforts by his appreciation of the problems to be solved, and of the ability and the limitations of the individuals who are to solve them. The educational training which imparts primarily a knowledge of natural laws, a knowledge of men and an ability to reason accurately furnishes the best preparation for executive work and it is in the power to develop these that the value of an engineering education lies.

It need, therefore, not be surprising that it was an engineering officer of the army who was finally successful in accomplishing the most stupendous executive feat of the age, namely, the perfection and direction of the organization for promptly and satisfactorily completing the Panama canal.

It is true that many of the most important positions in the industries are now held by men who have not had technical education, but very few can truthfully deny that these same men would now be more efficient had they had an engineering training. Besides, times are changing. The problems of industrial administration are becoming more and more complex each year, and require for intelligent comprehension and solution at least some fundamental knowledge of engineering. In the past, epoch making inventions have been made oftentimes by individuals of humble birth and few advantages, but nowadays improved machinery and methods are becoming more and more the result of focusing the energies of trained chemists, physicists, engineers and mechanics upon the complex problems arising. The industries are in constant need of capable men who have the ability to develop into good executives, and engineering college graduates are finding their way into these opportunities.

It is pertinent to ask if the engineering schools are adequately fitting their graduates to take up these greater responsibilities and opportunities. The efforts of these schools in the past have been largely confined to training their students in purely technical matters, and the four years generally allotted to this training have been severely taxed to accomplish all that it seems desirable to give the student. The aim has been to reduce the engineering training almost entirely to its fundamental technical principles and to make the student sufficiently proficient to analyse the practical problems to be met later in his experience into the comparatively few fundamental principles. To give him a firm and broad foundation upon which to build his experience rather than to attempt the im-

possible task of presenting to him the solutions of the infinite number of problems which may arise in his future experience has been the purpose of the best engineering schools. Generally these schools have been successful in their endeavors towards this end as may be best proved by the generally very satisfactory records of their graduates, most of whom have attained, soon after graduation, responsible positions in the engineering fields or in allied lines of business. It cannot be claimed that the engineering schools are doing all that may ultimately be possible to graduate more competent men and the fault may be found that the engineering student's education is not liberal enough. In the training of men to fill the larger responsibilities of citizenship in our complex industrial life our engineering schools have an opportunity to accomplish far more than they have already done. They are, for the most part, alive to the necessities and are anxious to do more.

In itself, the engineering training is a broad one. This may be denied by many who are ignorantly advocating a narrower line of training as the only liberal one. The engineering training does not seem broad to them for the reason that they do not adequately comprehend the discussions of engineering matters. Study and knowledge of natural laws are surely broadening as well as interesting, and the inexorable laws of nature surely compel a respect for and a love of truth in one who deals with them. It is not here asserted that the humanities, literature, music and the arts generally are less broadening than engineering or other applied sciences, for the engineer who can acquire something of these in addition to his

engineering training is indeed a broader gauged engineer, a better man and a more influential one among his fellows. The argument that the engineering training is a broad one is based upon its ability to train men to become clear thinkers, to be able to view the problems of our civilization with proper perspective, to analyze them and to deal with them in a broad-minded way. Mathematics alone has sufficient value in its application to engineering work to justify its generous introduction into engineering courses, but, aside from this value, it can be fully justified on the broader basis of mental training. The writer knows of men in high executive positions in the large corporations who choose engineering graduates for work which does not require a specific application of the mathematics because the training has taught them to think clearly.

Four years is the time allotted to an ordinary engineering course. More time than this may be spent to great advantage if the student will endeavor to train himself properly for the opportunities and responsibilities which engineering offers, not in its narrow, but in its broader sense, to learn how to combine and to command not only the laws of nature for the use of mankind by a sympathetic and intelligent understanding of them, but also to study how to organize and lead men. Engineers who, as a class, have in the past been too modest and absorbed in their work to interest themselves in affairs aside from their narrow specialty, are now receiving deserved recognition and will continue to play an increasingly important part in the further development of our civilization.

# THE SERVICE OF THE GRADUATE IN CHEMICAL ENGINEERING

ALCAN HIRSCH, '08, CONSULTING CHEMICAL ENGINEER



THE purpose of this article is to describe briefly the present-day aspects and the apparently brilliant future of the profession of chemical engineering. As the name indicates, chemical engineering is the offspring of chemistry and engineering. As a matter of fact, the chemical engineer is sometimes an engineer, sometimes a chemist, and more often both, depending, of course, upon the nature of the work in which he is engaged. It is absolutely essential, therefore, that he have adequate training in both engineering and chemistry if he is to be successful in the profession. To afford this training practically all of the universities and technical schools have prepared courses and equipped laboratories for adequate instruction in the essential subjects of chemical engineering.

The opportunities for the chemical engineer are so extensive that it is difficult to give an adequate idea of them in a short discussion. However, I will try first to give a general view of the subject and then later to refer to some of its specific aspects. In a general way the subject can perhaps be no better described than by saying that the service of the chemical engineer involves the air we breathe, the food we eat, the water we drink and almost all the articles of commerce that form necessities of life.

Consider the different phases of chemical engineering that are called into service for the utilization of the air on a commercial scale. Proper ventilation of buildings by means of

mechanical blowers, ozonizers and sterilizers; the removal of moisture from the air for use in blast-furnaces or for desiccating purposes; the production of liquid air and the consequent production of extremely low temperatures; the production of pure nitrogen and oxygen; the manufacture of fertilizers by the fixation of nitrogen, all these are only some of the problems dealing with a simple substance such as air which the chemical engineer is called upon to solve commercially.

Or take the subject of food products. Some of the greatest opportunities for the chemical engineer are found in the products of the packing-house. As is well known, a very large part of the profits of the packing-house, if not indeed all of them, are derived from the by-products. These by-products, like soap, glycerine, fertilizer, chicken feed and adrenalin, are purely the products of chemical engineering. Their production offers a two-fold field: First, they must be brought into being by chemical or engineering control, and second, the processes by which they are produced must be developed to the point of commercial economy. All this means opportunity for great service on the part of the chemical engineer.

But the field of opportunity pertaining to foods does not stop at the packing-house. The same general conditions, modified, of course, to fit each particular industry, exist in the preservation of vegetables, or other perishable goods in shipment, cold storage or canning; the preservation of the aroma of coffee; the artificial production of syrups, substitutes for lard and "Cottoline," and last, but

not least, the prevention of the pollution of water supply and fish foods by means of sewage. A short time ago a notable lecture was delivered by one of the chemical engineers for the city of New York upon the subject of the pollution of the New York harbor by sewage. Anyone listening to that lecture would have been convinced that this field alone will offer opportunities for service to chemical engineers for many years to come.

Next to air and food, water is the most important necessity of life. That chemical engineering involves this necessity is indicated by its relation to the provision of pure water for drinking purposes and to the problem of coagulation and water softening for cleansing purposes. All matters relating to any of the numerous uses of water are in the last analysis problems for the chemical engineer.

And the same condition exists in regard to almost all articles of commerce. I recall one instance where a manufacturer of labels was searching for an ink that would stand repeated washings without fading, and that would at the same time give the effect of embossing. Ordinarily the layman would hardly suppose that the field of shirt labels would offer opportunities for the chemical engineer. As a matter of fact, however, it seems in regard to this profession that the old saying that "opportunity is where one makes it" is very nearly true. However that may be, enough general illustrations have been given to show that chemical engineering covers a very large part of the broad field of human industry.

But apart from these general considerations it is important to consider the concrete forms of opportunities offered to the chemical engineer.

Prominent among these are, of course, positions in the chemical industries. Typical of these industries are the manufacture of bleach, alkalis, acids and soap; the production of

paper, leather and textiles; the treatment, recovery and refining of metals and alloys, the manufacture of electro-chemical and electric furnace products; the artificial production of fertilizers, and the utilization of industrial wastes. A special interest may be centered on one or another of these lines according to changing industrial conditions. For example, at the present time there is a notable interest in fertilizers and the attempt to recover potash from materials available in this country. The interest in iron alloys is maintained through the possibilities offered in the electric furnace. The increase in the use of aluminium and the restricted deposits of the ore now available make the electro-chemical recovery of aluminium from kaolin and other similar materials of particular importance. In this age of conservation the utilization of trade and industrial wastes is occupying attention. Sawdust, which has been burned or used for filling material, is now being utilized in the manufacture of alcohol. The smoke problem is passing from one of local to national importance. During the past few months remarkable interest has been stimulated in the field of gas engineering through the failure of the supply of crude oil as a fuel in the industrial districts. A most promising avenue for relief from this shortage of fuel comes through the producer gas method of generation and the utilization of peat-gas. This last is being utilized in Germany at the present time.

Aside from these more obvious opportunities there are numerous demands for chemical engineers by employers who a few years ago did not know of the existence of this branch of engineering. Railroads are employing these men for the control of feed water supply of locomotives and for the study of the chemical and physical properties of materials. The rail and wheel problem is largely one

of chemical engineering, especially when it is carried back to the mills producing them. The corrosion problem as it affects locomotive durability, bridge deterioration and the life of steel cars involves a study of the qualities of iron and steel, of the efficiency of various paint compositions, and of wood treatment methods.

Municipalities are rapidly coming to an appreciation of the value of chemical engineering in the study and regulation of gas supply and in sanitary problems, such as the disposition of sewage and the purification of water. Garbage disposal is a particularly interesting example of chemical engineering problems associated with municipal life. This obviously opens a large field for service.

Even jobbing houses are asking for men trained in chemical engineering. A good example is found in the case of one large hardware supply house which pays a large salary to a chemical engineer and which has saved this salary several times over through microscopic, chemical and physical study of materials which it handled. This work was taken up primarily to safeguard quality in the interest of the customers, but it has incidentally been of direct commercial profit through the reduction in the amount of damaged materials and low grade articles which, without detailed specification and careful inspection, would have to be handled.

It is only recently that the interest of the public has been aroused to the possibilities of chemistry. Electricity not long ago occupied the center of the stage of public interest, but chemistry is now competing for this honor. This naturally leads to a demand for men in the journalistic field who can handle chemical and engineering problems in such a way as to interest the public.

If we look further for specific opportunities in chemical engineering we find them in almost all manufacturing plants. In a stove works, for example, the foundry, the malleabilizing department, the enameling, plating and polishing departments have their chemical problems. Fuel economy is likewise a profitable subject for study as well as various kinds of fuel and their influence on stove life. The manufacturer of wood products likewise has his problems. Wood preservation, wood drying, varnish and paint problems are problems for the chemical engineer. Likewise are rubberizing, cementing, water-proofing, problems of the manufacturer of raincoats and rubberizers. Even the matter of the stitching of sleeves to the body of garments is a problem that calls for chemical treatment and one that is more complex than at first appears.

And so one might go on at length, citing examples from this industry and that and thus adding evidence of the opportunities in the profession. But such further evidence is unnecessary.

Not all these fields have been exploited, and a wide field is open to the chemical engineer. A surprisingly large number of the fields to which attention has been drawn are practically virgin, and any of them in which advances have been made still have large tracts which are as yet untouched. There is work enough in the profession to keep all therein busy, and there is work enough untouched to give occupation and opportunity to a host of newcomers. Given the proper training, energy, and a little experience, opportunity without end is open to the young graduate in chemical engineering, and he should have no difficulty in keeping himself busy at remunerative and useful work in the field of our profession.

# THE ALUMNI CENSUS OF THE COLLEGE OF ENGINEERING

R. C. DISQUE, '08



IT IS a well known fact that the engineering graduates form a most loyal and active group of university alumni. Their enthusiasm is evident in every alumni club and in every class organization. For the purpose of fostering this spirit and promoting the closest possible relations between the alumni and the College of Engineering there has been started an effective system of gathering and filing alumni data. The system is under the charge of the dean of the college, but by agreement with the General Alumni Headquarters it forms part of the general work now maintained by the regents. It is believed that the college, by its personal relationships, can do the work more effectively than can the general alumni department. This arrangement enables that department to profit by the effective work of the college and relieves the alumni of the burden of filling out a number of cards each year.

Equipment has been provided for maintaining classified card indexes and for filing letters, notes and documents pertaining to alumni. One index contains an alphabetical arrangement of all names regardless of course. The cards in this index bear data on the home address and parents, estimates of the graduate's sen-

ior instructors as to his abilities, and a picture clipped from the annual Badger. In addition to this there are three indexes for each course, classified (1) by classes, (2) by occupation, and (3) by geographical distribution. It is the plan to keep these indexes strictly up to date by regular communication with the alumni, to publish at regular intervals a reliable directory and to prepare correction sheets during the intervals between the publication of successive directories. One complete directory has been published and the data for the second are now being collected. While this first directory was the best of its kind ever published it is hoped to make the next one still better.

However elaborate may be the equipment for carrying on this work it avails nothing without the hearty cooperation of the alumni. This cooperation should consist in filling out promptly the alumni cards sent out from time to time, in keeping the college notified of changes in address, and in sending in personal items of various sorts. The latter may be in the form of marriage announcements, newspaper clippings, pictures or technical articles. This sort of information, being especially valuable, will be gladly received and filed for future reference. It is hoped that the well known engineering alumni spirit will manifest itself in enthusiastic cooperation in this work.



# THE COLLEGE OF ENGINEERING TODAY

PROFESSOR JOHN G. D. MACK, ACTING DEAN



THE College of Mechanics and Engineering was first designated as such in the university catalog of 1888-1889. Before this time the engineering courses had been given and engineering degrees had been conferred, but the work had been done as part of that of the College of Letters and Science. The first engineering degree was conferred in 1871 in the civil engineering course. In 1876 degrees were conferred for the first time in mechanical and metallurgical engineering. When the College of Engineering was formally organized as such in 1888 it embraced only these three courses.

A great increase in the number of engineering students began in the latter half of the eighties and by 1896 it became evident that more space was necessary than it was possible to obtain in Science Hall and the shop addition to which the engineering work was confined. Alumni of 1900 and before will recall that the civil engineering drafting room formed a part of the geological laboratory on the second floor of Science Hall; that the large drafting room on the first floor, with its one hundred desks, was compelled to accommodate several classes at the same time; and that the steam, hydraulics and materials laboratory was crowded into one room in the basement. During this period of rapid growth and consequent crowding, the late beloved Professor Daniells often said: "That engineering department will have its whole body in before one knows it."

This crowded condition so interfered with the work that it resulted in the construction of the engineering

building, which, though not entirely completed, was occupied in the autumn of 1900. This date may be said to have marked the beginning of the modern era of the College of Engineering, for it was then also that the college was placed on equal terms with the other colleges by the appointment of a dean, Professor J. B. Johnson, of the civil engineering department of Washington University. After having served only two years Dean Johnson accidentally met his death and Professor F. E. Turneure of the chair of bridge and sanitary engineering was appointed dean. During this period since 1900 the expansion of the activities and equipment of the college has been very rapid.

The following are the regular engineering courses as now given in the college:

Civil Engineering, Mechanical Engineering, Electrical Engineering, Applied Electro-Chemistry, Chemical Engineering and Mining Engineering.

Each of these is offered as a four or five year course, the latter in each case leading to a professional degree but requiring a higher scholarship record. The students of all courses receive a portion of their instruction, as formerly, in the College of Letters and Science in the required subjects of English, language, mathematics, chemistry and physics, while the electives taken in other colleges are very diversified. The purely engineering subjects of the various courses are given in the College of Engineering, which occupies for this purpose the Engineering Building, the Chemical Engineering (old Chemistry) Building, the Hydraulics La-

boratory Building, the Mining Laboratory Building and the Shop Building.

The engineering laboratories are divided among several buildings. The steam and gas laboratory is in a wing of the Engineering Building and the materials testing laboratory in the basement of the same building. In the opposite end of the basement is the mechanician's shop for the building and repair of laboratory instruments. The electrical laboratories occupy a two-story wing of the Shop Building. The first floor of this wing is devoted to dynamo work while the second floor is occupied by photometry, high tension and standards laboratories. The main wing of this building is devoted to the use of the various shops. The mining laboratory is in the remodeled old heating plant and the chemical engineering laboratories are in a separate building.

A reinforced concrete four-story addition to the Engineering Building was completed in 1909, when the original building had become too crowded for effective work. This addition gave space for the transfer of the engineering library to the Engineering Building. The engineering library is in charge of F. E. Volk, who is a graduate of the electrical engineering class of 1908 and who has specialized in library work. The availability of the engineering library has added greatly to its usefulness to the engineering students.

The engineering faculty consists of sixty members in the college proper, but if those are included who give instruction to engineering students in other colleges this number is more than doubled.

There are a number of active organizations among the engineering students—the Engineers' Club, a student branch of the A. S. M. E.; a sec-

tion of the A. I. E. E., the Mining Club, the Civil Engineers' Society and the Wisconsin Engineer Association. The latter publishes the "Wisconsin Engineer," which is now issued in eight numbers each year. This publication gives a means by which the college may keep in touch with the alumni and so we wish that every alumnus would become a subscriber.

Equipment and teaching force are highly important, but the alumni of an educational institution are its most valuable asset. All its physical property might be obliterated and its faculty scattered, but the alumni would remain on whom to build again. This is comparable to those values known as "established reputation" and "good will." One can think of many commercial enterprises whose physical property could be wiped from the earth and whose name would yet be of inestimable value to any one having the right to use it. The writer has felt very keenly the importance of alumni cooperation in his many years' experience as freshman class adviser. He tried to ask every student from without the state why he came to Wisconsin. In many cases the answer was in effect that he knew Mr. ———, an alumnus who had told and convinced him that to go to Wisconsin was the only thing to do.

Therefore, reader, if you are an alumnus of the College of Engineering you may be beyond the point where we can be of any assistance to you so that your helping us may not benefit you personally; but I believe that the time will never come when you will not be proud to say that you graduated from the College of Engineering of the University of Wisconsin. Your continued interest and assistance will be one of the large factors in maintaining that state of mind.

## RECENT WISCONSIN DEVELOPMENTS

W. D. PENCE, PROFESSOR OF RAILWAY ENGINEERING



IT IS the purpose of this article to present a few observations made at close range touching upon the relationships and opportunities for the College of Engineering which have grown out of the activities of the Wisconsin Railroad and Tax Commissions.

Those who have followed these matters at all closely will remember that a decade or so ago when the state was about to undertake the taxation of its railroads on the **ad valorem** basis, the State Tax Commission found it necessary to make an appraisal of the physical properties of the various railroad companies of the state, and that this work was placed under the direction of the professor of railway engineering of the university at that time. In recruiting the field and office staff for these 1903 appraisals it was of course natural to draw upon the available list of Wisconsin graduates and under classmen, and this same policy was followed in the statistical department of the Tax Commission where extended field studies relating to the taxation of the general property of the state were in progress. With the completion of the initial steam road appraisals in 1904 it was found practical to reduce the engineering staff to a minimum basis of one or two persons assisting the chief engineer in keeping the annual revaluations up to date. This quiescent status in the staff continued until towards the end of the year 1906, when the field for a technical staff was greatly expanded through the joint service for the Tax Commission and the newly created Railroad Commission.

With the enactment of the state civil service law in 1905 an organized procedure was created whereby men of university training and others became available for the service of the state on the merit plan through a system of state-wide competitive examinations. In the administration of this law it has been found practicable to adhere closely to the examination plan for most lines of the service arising in the work of the commissions, particularly in those lines where subordinates can be recruited directly from under class men or from those freshly graduated from the university. In certain lines of special service, however, where the immediate demand for men of mature years and judgment and of prescribed professional training could not be met by men available within the confines of the state, the Civil Service Commission has generously cooperated in the search for suitably qualified men elsewhere. In all these quests for the right man for a given service the university alumni records have been of great service and the large body of engineering alumni has contributed most generously to this service. The right of the state to be served by "the Wisconsin son of Wisconsin parents" is as plain as the claims of this Wisconsin son to the privilege of serving his native state. The mere fact that the "native son" may have gone to a remote corner of the country to find his chance to make good professionally should not prevent a junction of "the man and the job" when the need of his service arises at home. This case may not seem to be quite so clear when the Wisconsin graduate is not a "Wisconsin son"; but on second thought the right of the

state to be served by the right man will be seen to take precedence over all other considerations. In the practical working out of any such process, availability must occasionally be a controlling factor, with the result that positions are sometimes filled by men from other directions.

With the enactment in 1907 of the public utilities law calling for an equitable enforcement by the Railroad Commission of an adequate service at reasonable rates by all of the so-called public utilities (water, gas, electricity, heating and telephone) without distinction as to ownership (that is, whether public or private), it became necessary to extend at once the scope of the technical staff to include specialists in several additional fields. For example, the head of the department of chemical engineering at the university was placed in charge of the commission's department of gas and electric service, and conducted the investigational work required in the establishment of standards of service suited to the Wisconsin conditions and in the formulation of rules for the interpretation and enforcement of these standards. Relations were early established between the Railroad Commission and the Regents, through the friendly offices of the president of the university, whereby scientific instruments and apparatus owned by either party could be used reciprocally, subject only to the superior claim upon the university for instructional work. This last restriction has occasionally placed a limitation upon the work of the commission, and it was not until quite recently found practicable to expand the laboratory facilities at the university to the point where this condition could be overcome. Through an extension of the terms of the agreement originally entered into, the enlarged testing laboratories at the uni-

versity have assumed the difficult undertaking of carrying on all the calibration work for the electrical utilities of the state arising under the requirements of the public utilities law. This offer by the university, it should be stated, is merely an instance of the purpose to make these laboratory facilities perform the function of a central bureau of standards for the entire state, much like that performed by the government bureau of standards at Washington with reference to the entire country. The opportunity thus seized was as important to the university as to the commission, and the state as a whole is the direct beneficiary. The commission in order to exercise the necessary degree of control in the direction of its prescribed tests as required by law has arranged to assume a moderate share of the salary of the expert in charge of the university standards laboratory, at least during the preliminary stages of the work, and the university facilities become available in even a wider sense than hitherto for the special research work continually found necessary in the enforcement of adequate service on a scientific basis.

The foregoing instance of cooperative action is cited as one of many cases of a similar nature leading directly or indirectly to beneficial results to the state at large, which have grown naturally from the relationship here referred to. The case above described chances to be one where the direct advantages were in part of a financial nature, a phase which properly should receive the fullest consideration, especially at a time when the matter of adequate support for the many imperative calls is so vital a question. Without intending in any way to belittle this business aspect of the problem, the hope is expressed that there may be reasonable freedom in the future, as

there has been in the past, in carrying forward these relationships and the many others of like kind which pervade the sweeping activities of the state and the university without undue insistence upon immediate and obvious benefit in the dollar measure. The country-wide interest in what is going on in Wisconsin may not be fully justified as yet, but there is considerable warrant for the belief that the country is not going to be disappointed if there can only be a fair degree of patience with trying out some of these things to their legitimate end and if there can be some

flexibility and generosity with reference to the standards by which the final results may be judged.

Limitations of space forbid the presentation of the many other matters that come to mind in connection with the subject here considered. The relationships here discussed will no doubt continue to be so flexibly adjusted as to enable the state to gather the natural fruits of the generous support accorded to her university; and may the spirit ever continue to be mutually one of "readiness-to-serve."



# EARLY DAYS OF THE COLLEGE OF ENGINEERING

A. D. CONOVER, '74



THE teaching of engineering was I believe begun by Col. Pease, military commandant at the university, during the years 1867-8 and 1868-9. At least there was some tradition of such teaching when I entered the university as a student in the preparatory department in the winter of 1869.

The teaching of civil engineering was begun by Colonel Franklin, who succeeded Colonel Pease as military commandant, in the college year of 1869-70, two students in the scientific course, Bassett and Colby, having elected to take the studies outlined for such a course by Colonel Franklin, in addition to their regular work. It is my recollection that they completed this work under Major Nicodemus who soon succeeded Colonel Franklin, the latter retiring from the university and from the army to engage in engineering business as manager of a considerable iron works. It is also my recollection that these students, Bassett and Colby, received the first degrees in engineering given by the University of Wisconsin.

Major W. J. L. Nicodemus arrived at the university some time during the year 1870-71, detailed, like his predecessors from the U. S. army, as military commandant and instructor in military tactics. Up to this time there had been only a skeleton of an engineering course, considered about the work a bright student might do as extra work in addition to his reg-

ular work in either the classical or scientific courses of study, these latter being the only regular full college courses then offered by the university.

Major, afterwards Colonel, Nicodemus was a man of character and energy, a civil war veteran, with an excellent army record and a family. He began at once to take a warm interest in the development of the instruction in civil engineering, and within a short time had resigned from the army and been elected professor of civil engineering and instructor in military tactics.

His genial and kindly personality, his firmness and tact, made him an ideal instructor in the military tactics in an institution like the university, in which the student body did not take kindly to rigid discipline and formal routine, and the tenor of his service was not marred by the hostile feeling, the indirect resistance and the pranks which have since often troubled instructors in that department. With characteristic energy he began and continued throughout his service to the university to develop a course of study in civil engineering better worth while, full work for even the best students, covering the junior and senior years.

When the building of the original Science Hall made it possible he secured provision for a machine shop and an instructor in shop practice, Mr. C. I. King, and began the development of a parallel course in mechanical engineering.

He carried the instruction in the engineering studies proper, alone until 1875 when authority was obtained for an assistant or tutor and the writer was appointed to that position, filling it for two years, leaving it in '77 to return to the university as instructor in mathematics in '78.

Meanwhile a course of study in mining and metallurgy had been developed by Professor Irving of the department of geology and its first class, of two members, Bowman and Sweet, graduated in 1872. The first class in the full civil engineering course began with four students in the fall of 1871, the writer one of its members. A severe illness caused his early withdrawal, leaving Moroney, Munroe and Quirk who graduated as the first class with a real, but not very full, course of civil engineering instruction in 1873, to be followed by Fisher and Conover in 1874.

From these small beginnings these engineering departments had a gradual but steady growth until at the time of Professor Nicodemus' death, early in 1877, their combined numbers had grown to twenty-five. During the fall term of that year Professor Nicodemus was compelled to seek a change in the hope of finding relief from insomnia which had greatly undermined his health. For most of that term and the next, the writer carried at his request, the special instruction in engineering as well as his own work in the chief mathematics of the university courses. Twice Professor Nicodemus returned to his work for short periods but was twice forced to retire. His tragic death from the ac-

cidental taking of an overdose of opiate, made a deep impression on students and faculty by whom he was deeply mourned.

Throughout his nearly ten years' life in Madison and service at the university his unvarying courtesy, his unwavering good cheer and real kindness had won him hosts of friends.

With fine energy he had built up his departments and is well entitled to be ranked as their founder. It would be difficult for the student of today or the recent graduate to fully realize the relatively undeveloped condition in that day of this country, of the college, for the university of that day was little more, and of the relatively limited field it covered. It would be equally difficult for him to fully realize the tremendous check given to engineering enterprise by the panic of 1873 and the gradual process of liquidation which followed, and how for a time not only was engineering employment very scarce but many thousands of well trained men were forced into other employments and professions. These lean years were the early years of their engineering departments, and their effect could not be otherwise than to discourage its growth, since few of the graduates of that period were able to secure attractive engineering employment and some, not any.

Times grew better in the latter eighties and somewhat irregularly lent a stimulating influence.

Shortly after the death of Professor Nicodemus, the writer was elected to the chair of Civil and Mechanical Engineering to take effect the following June, and continued

his double work of instruction until then, assisted by the engineering instructor, Nichols, a graduate of the Massachusetts Institute of Technology. At this time beyond the few books, the blackboards and drawing tables, and the scantily furnished machine shop, the apparatus for instruction in the departments was confined to one ancient compass with Jacob staff and tripod, one Gurley Transit, one Gurley wye level, one Buff and Berger dumpy level and a small complement of chains, tapes and rods.

One level and one transit were added in the early eighties and in 1884 a 50,000 lb. Olsen Testing Machine.

Most of this equipment was lost in the fire which destroyed Science Hall in December, 1884.

During the winter of 1878-9 the famous Norwegian violinist, spent much time in Madison, the home of his young wife. It was the writer's great pleasure to meet and to hear him perform quite often, and he accidentally hearing that a possible opening might occur in the engineering instructional force, called to tell the writer of a nephew who had received fine training in mechanical engineering in the technical schools of Norway and in the Polytechnic school at Zurich. After careful consideration of his credentials he was offered and accepted the one tutorship in Engineering. The following September the writer returning from a summer sojourn in New York and New England studying engineering structures, found Storm Bull so cleverly nicknamed "Tempestuous Taurus," well established in Madison and university society, and much

to the writer's disappointment, politically established as a staunch and earnest democrat.

With the coming of Mr. Bull began a rapid and systematic development of a course in mechanical engineering, whose students, including those specializing in electrical engineering, soon outnumbered the students in civil engineering. It soon became evident that if the engineering courses were to be made worth the while, there must be taken more time in which to give the engineering instruction, and to accomplish this it would be necessary to begin the technical work in the sophomore instead of the junior year.

Against some opposition, authority for this change was finally secured. It made possible considerable broadening of the courses and more thorough instruction on some lines, as well making necessary more instructional work for the little engineering faculty.

Instead of driving students from engineering or discouraging them from taking it up, as had been somewhat freely predicted, the improved course and the harder work for students which it insured seemed to attract the better class of students and at the end of the second year in announcing their elections for the coming year practically all of the General Science freshmen announced their choice of engineering. Changes in mind during the summer vacation and fresh accessions averted such a disaster however and from that time on with the strengthening of the General Science course and its increase of special faculty came a rapid growth placing it quickly in the lead of all the depart-



ments as to numbers of students.

Soon the engineering faculty having accommodated itself to the added work of a three years' course began again to feel the need of more time for technical instruction, began to plan to extend the technical instruction over more time by beginning to specialize in the freshman year. The privilege to do this was finally granted and brought improvement in instruction and added numbers to the courses.

This in outline is the history of the decade of the eighties during which time the total number of students grew to somewhat more than one hundred in all classes.

It can be easily realized that this period of broadening the scope of the instruction and increasing the numbers of the classes was one of no little strenuousness for the scanty engineering faculty of three, four and finally five men and the instruction had to suffer for lack of men who had specialized and grown to mastery of their specialty.

To the writer personally and to the department as well, the burning of the original Science Hall, a large stone structure on the site of the present building, seemed the most important event of the decade. This occurred in the fall term of 1884.

The fine collections in the museums, the equipment of the departments of Chemistry, Physics, Geology, Biology and Engineering were almost entirely destroyed, as well as many books and the private libraries of several of the professors. Immediately after the fire the old North Dormitory was gutted and rebuilt in a crude way for the temporary accommodation of the departments

burned out. It was so occupied for nearly three years.

Mr. H. C. Koch of Milwaukee, who had been the architect of the original Science Hall, was selected by the Regents as architect of the group which it was planned should replace the building and the writer was placed on a special committee with the executive committee of the board to prepare plans and present them to the legislature. Some controversy arose over the plans to be followed. The plans finally evolved provided for a new building for Chemistry, a new building for Machine Shop, since enlarged, and the Science Hall on the site of the old building providing quarters for Physics, Geology, Biology and Engineering and with a separate power house for the group.

The estimates prepared for these and submitted to the legislature secured an appropriation of \$195,000, much the largest single university appropriation for improvements up to that time.

It is recalled that at the special hearing before the Joint Committee on Claims, the legislative appropriation committee, after a most earnest, eloquent and effective plea from Regent Vilas, Regent Keyes added emphasis to the requests by predicting that within ten years there would be 1,000 students at the university. This was regarded as so extravagant that it caused no small merriment.

When the buildings were occupied some three years later they were in some respects too small for at that time the student registration for the year had reached twelve hundred.

Plans for the smaller buildings expanded not a little in their develop-

ment and contracts were soon let for their construction involving an expenditure of nearly \$100,000, leaving for the Science Hall barely \$100,000 entirely insufficient for the building planned for which the estimate had been \$150,000.

The Science Hall plans were finished and bids received, the lowest approximating \$190,000 and involving a total expenditure of \$220,000. These were the amounts required to build the structure with slow burning construction, wooden joists on protected steel girders with fire clay plates suspended for joint protection.

The regents finally rejected all bids, detailed from duty and appointed the writer as Superintendent of Construction, and proceeded to wreck the burned building, and to construct the building which had been planned intending to carry the work as far as possible with the funds at hand and then appeal to the legislature for funds to finish it. Work was begun in August, 1885, and finished in January, 1888.

It seemed to the writer that to rebuild this structure, destined to contain collections of rare and valuable specimens and expensive apparatus, less than as fully fire proof as possible, was to invite another disaster. Many changes better fitting the building for its purpose were made and bit by bit, authority was obtained to make it fire proof in accordance with the best ideas of the time. When completed there were but two other buildings of its class in the state, the Northwestern Life Insurance office building in Milwaukee and the Dane County Court House in Madison. In deciding to

exceed the legislative appropriation in building this building the Regents took a courageous stand which would not ordinarily have created much criticism.

The contract work, because of the failure of the contractor and the losses of his bondsmen created claims for legislative aid which were pressed with vigor, and which the Regents felt it necessary to oppose. The carrying on of construction work by state account instead of by contract created great hostility among the larger contractors of the state. Thus were created two classes of influential men actively criticizing and opposing the university. Their activity in opposition ended in a long drawn out investigation of the Regents, their accounts and their superintendent in which the writer was on the witness stand most of the legislative days for nearly six weeks.

That the investigation was in part investigated and carried on unfairly had become very apparent. Its closing scenes were interesting. The chairman had just announced that the investigation would last one or two days more when the open window let in the sound of repeated cheering and applause from the assembly wing. An assembly member of the investigating committee soon brought the news that the assembly, tired of waiting, had just passed the university appropriation bill at just what had been asked, providing another \$100,000 to complete the building and \$40,000 for equipment. The committee report was quickly made and in due time the incidents of the disagreeable session were forgotten. To many members of the investigating committee whom he frequently

met in after years the writer is indebted for much kindly interest and many a generous boost in business, and counts them among his best friends.

The chief historical interest to the engineering student in Science Hall lies in the fact that it is supposed to be the first building in which steel was used, instead of iron, as a structural material. I believe that that honor belongs to the Sibley Seed Warehouse in Chicago, the beams in which were of steel and were rolled at Pottsville, Penn., from ingots purchased.

Undoubtedly the beams and other shapes used were the first rolled by the Carnegie Company.

The six large rolling mills in the country who could roll structural shapes of the larger sizes were at that time in a hard and fast combine, selling beams and channels at a fixed delivered price, \$3.15 per hundred at the time, with smaller shapes like angles selling at \$1.80 to \$2.00 per hundred.

By consenting to furnish the beams in steel at the combination price the Carnegie Company were able to avoid breaking the price agreement and still make a cut in the net cost of the needed material of nearly fifteen per cent.

The general adoption and use of steel for such structural shapes soon followed.

The experience in active work was greatly enjoyed by the writer in spite of the physical, professional and political stumbling blocks, and had proved very beneficial to his health. It had resulted in professional engagements of growing importance and when these duties and those of teaching began seriously to interfere, considerations of health and independence prevailed and early in the spring of 1890 the writer resigned in order to give his time to the professional practice of architecture and architectural engineering.

No adequate impression of the agencies which were helpful in the building up of the engineering departments in that primitive time, can be imparted without a heartfelt acknowledgment of the kindly helpfulness of the small university faculty of that day to their inexperienced junior member. To the fairness and wisdom of its great President John Bascom, to the friendly interest of Sterling, Carpenter, Parkinson, Allen, Feuling and later Rosenstengel and Frankenburger, to the active cooperation of Daniells, Davies, and Birge, and more than to any other single influence the unselfish and large minded helpfulness of Irving, the writer was continually and greatly indebted.

# THE PROPOSED LIBERAL ARTS BUILDING

THOMAS LLOYD JONES, '96



IN the Hand-book of Information concerning the University of Wisconsin, compiled by the Alumni Bureau of Information, it was clearly stated that the fundamental aim and purpose of the university is to teach young men and women and make useful citizens of them. President Van Hise said, "The development of well trained, efficient, high minded men must ever be the central purpose of the university. They are indeed the soul among its creations, without which all else is of no avail."

The burden of this work falls most heavily upon the College of Letters and Sciences. The increase of enrollment has been very marked, but the increase in space given for this work has not kept pace with the demands. The biological sciences are well provided for in the beautiful new building upon the upper campus, thus relieving the pressure in Science Hall. The crowded conditions in University Hall will be somewhat relieved when the Department of University Extension moves into its new building, but even then the conditions will remain such that the most efficient work will be impossible.

At present all testify to the lack of concentration in the arrangements of offices and classrooms. The Department of Mathematics has classes meeting in three buildings. Political Economy has offices and classes distributed through three buildings. The work of the German Department suffers in the same way. In fact, the work of all departments suffers

seriously on account of this lack of room. There is immediate need of added space, making possible concentration of effort; the immediate result of which would be greater enthusiasm and vitality in administration and in instruction.

In University Hall there are about twenty-eight offices, exclusive of those used for the University Extension Department and the Administrative work. These offices, for the most part poorly arranged and poorly ventilated, accommodate eighty people and it is self-evident that adequate conference with students is impossible. This condition of affairs is very unfortunate since the need for greater opportunity for conference is recognized by faculty and students alike. The need for office room in a modern university is acknowledged by all in authority. "The College of Engineering has provided thirty-four offices for thirty-eight people. In the College of Agriculture practically every professor and instructor has an office. In the College of Letters and Sciences each office is occupied by from two to ten members of the Faculty."

There is a pressing need for a Liberal Arts Building that will provide adequate lecture rooms, classrooms, offices, reading and conference rooms.

The purpose of this brief statement is to call to the attention of all readers of our Alumni Magazine the need of a Liberal Arts Building so designed as to make possible the use of modern methods in teaching. It becomes our plain duty to help forward this movement.

## THE GIFT OF 1887

An admirable portrait of Professor David B. Frankenburger, '69, reproduced in this issue, hangs in room 165 University Hall, the gift of the class of '87 in commemoration of its quarter-centennial anniversary and reunion. It was painted by Mr. James R. Stuart of Madison, and intimate and devoted friend of Mr. Frankenburger, whose skillful work displays his vivid recollection of the magnetic personality of his subject.

Madison, Wis., Dec. 7, 1912.

The President of the University of Wisconsin:

Sir:—

The class of 1887, on the occasion of the twenty-fifth anniversary of their graduation, voted to present to the university as a memorial of that anniversary, a portrait of David Bower Frankenburger; and designated a committee to procure and tender such portrait.

The portrait, painted by Mr. James R. Stuart, has now been completed and is herewith tendered to the university as the gift of the class of 1887; in respectful and affectionate memory of the devoted and efficient service rendered by Mr. Frankenburger to his Alma Mater during the long term of his service as tutor and professor; as well as in expression of the gratitude felt by every student who came under Mr. Frankenburger's influence, for his wise guidance, his generous encouragement and the inspiration of his personality.

On behalf of the class of 1887 we beg the university to accept this portrait of one of her most faithful servants.

Yours Respectfully,  
(Signed) Charles M. Morris,  
Katharine Allen,  
R. M. Richmond.

Madison, Dec. 20, 1912.

Office of the President.

My Dear Mr. Morris:—

The portrait of Professor David Bower Frankenburger presented to the university by the class of 1887 was accepted by the regents at their meeting yesterday. I am directed to express to the committee their appreciation of the action of the class.

For twenty years Professor Frankenburger gave his entire energy to the university with a faithfulness and a singleness of devotion rarely equalled. Indeed, he drew upon his energy faster than nature could supply his system. Professor Frankenburger not only did his class work regularly, but he was ever ready to respond to any call for general university duty. He also gave a very large amount of time to personal instruction, perhaps as much as to his regular instruction work.

It is very appropriate indeed that the portrait of Professor Frankenburger should be placed among the professors of the university who shared with him the work of the early development of the institution.

Very truly yours,  
(Signed) Charles R. Van Hise.

## WISCONSIN VIEWED FROM EUROPE

PROFESSOR PAUL S. REINSCH, '12



UNTIL a few years ago it was only the great institutions of the Eastern states, especially Columbia and Harvard, that attracted attention in European countries. This was but natural because of the age of these universities and their established reputation in our country, as well as because European visitors, though they might not penetrate very far into the interior of the United States, would always visit New York and in most cases also Boston and Cambridge. But as the West has become more important in American national life, Europeans are beginning to give more attention to it and are desirous of knowing the conditions of its life and of visiting it when in this country. So the leading state institutions of learning in the West—Wisconsin, Illinois, Minnesota, Michigan, and California,—are beginning to interest Europe very much both on account of their local and national importance in America and because they represent a new organization in scientific work in the comprehensiveness of their activities. Through the visits of such men as President Wheeler of California and James of Illinois, personal relationships have been established. In return, German men of science coming to this country do not fail to include Wisconsin and some of the other state universities in their itinerary. Most important of all, the establishment of the Carl Schurz memorial professorship at Wisconsin, inaugurated this year by Professor Kühnemann and to be occupied in the fu-

ture continuously by a succession of prominent German scholars, is serving as a means of communication and link of union between European and American science.

The University of Wisconsin is considered in Europe as the most representative among the Western institutions of learning. It resembles German universities in being a public institution supported and supervised by the state. It is the agency of the state in higher education as well as in the application of the sciences to human activity. The members of the staff of the university are not only teachers but investigators whose aim it is to add to the sum of reliable human knowledge and to use that knowledge in assisting every activity in the commonwealth, whether educational, industrial, agricultural, commercial, or governmental, in improving its methods by making use of the carefully sifted results of human experience. The University of Wisconsin is unlike German universities in having grown far beyond its prototypes in the comprehensiveness of its activities. Whatever can be dealt with, developed, or improved through the use of scientific instruments and methods, is included in the work of the university whether it relate to agriculture, engineering, commerce, or law making. Thus every useful activity in the state is sure of the services of the university and its staff in rendering available whatever guidance and assistance science has to offer.

The German universities, which must still be considered the leading institutions of learning in the world,

may at present be said to be undergoing a crisis. The adaptation of scientific methods to all the activities and interests of life which with us is attempted through one central comprehensive institution, is in Germany divided up between the universities proper, the technical schools, the agricultural institutions, and special institutes of investigation. The latter have grown in number and importance during recent years with the result that the complexity of the German system of education has been increased and that the universities themselves have been forced to ask themselves whether they are to continue to be the leaders in purely scientific investigation. As constituted now their work consists of the teaching of scientific method and the handing down of the sum of scientific knowledge, as well as affording preparation for the three professions of theology, law, and medicine. The union of all scientific activities in one central institution is an experiment which to Europeans is very interesting and to most of them seems to hold out the promise of a great saving of effort through adequate correlation.

In the matter of administrative detail the professors of the German universities are in an enviable position as compared with the Americans as the universities exercise far less direct supervision over the work of the students than is the case with us. The sum of administrative matters is much smaller; and those which exist are looked after by a special staff of administrative officials, leaving the professors entirely free to devote themselves to the work of teaching and investigation. This also constitutes the chief difference between German and American student life.

The German student is put entirely on his own responsibility with the expectation that at the end of three or four years he will have acquired a sufficient knowledge of his chosen subject to pass the very rigorous state and university examinations. It is a system that gives a sense of freedom, dignity, and responsibility to student life. While it appeals to the best qualities in the character of young men, it has the drawback of failing to hold those who are indolent, shiftless, and weak up to the regular performance of work. Such cases are left to take care of themselves; unrestrained freedom may be delicious for the time being, but the day of reckoning cannot be avoided. Not being haunted by the daily necessity of performing set tasks, German students probably work less regularly during their university career than is the case with us; but they are nevertheless dominated by their main purpose of acquiring a mastery of their subject. In the choice of studies they are not so free as may be supposed, but are influenced to a large degree by the established precedents in the line of work they have chosen. They will of course be particularly careful not to ignore the courses of men who are later to examine them. The absence of the whole system of class advisers, required studies, prerequisites, special permission to take more than fifteen hours, worrying about poors, failures, and excellents, working off conditions, piecing out majors, etc., makes a great difference in the life of the German students. Of course it must be remembered that the students in German universities are virtually on a plane with our post-graduate students; that we not infrequently extend a system of rigorous and petty

supervision to our own graduate students, one does not care to mention in Germany because such a frame of mind would not there be understood. When it comes to administrative red tape, America is gaining handsomely on her older sisters of civilization.

The student life outside of the classroom impresses one as lacking in the vigor and initiative displayed by American students. With us student energy takes the form of creating countless organizations, athletic, musical, social, etc.; the amount of time consumed in these matters may not always bring an adequate return, but it is a sign of the active-mindedness of our students. What athletics in all the various forms of bodily exercise mean to Americans could be but dimly conceived by Europeans outside of England. But what is true in general of European and American life, that they are approaching more closely to each other in their practices and standards, applies also to student activities. A beginning has been made in student athletics, and organizations have been formed for general purposes such as establishing students' reading rooms and arranging for lecture courses. There are cosmopolitan clubs, excursion clubs, and various student organizations for scientific purposes. Even elections occur with vigorously conducted campaigns, the distribution of literature, and stump speeches. But these things are in their beginning; the organization of student life is not nearly so complex and full of varied energies as it is with us.

Coeducation has made great strides in German universities. Numerous women, including countesses and other young ladies of high rank, have advanced to the dignity of academic

degrees. The old rule of "marry or be a burden" no longer holds in Germany. In the universities students have accustomed themselves to see without surprise large numbers of women in the lecture rooms, seminars, and laboratories. However, as coeducation does not obtain in the middle schools the common pursuit of learning in higher institutions is not accompanied with that frank companionship between men and women to which we are accustomed in our colleges and universities. The universal European idea still obtains that women have to be guarded and segregated, and it is giving way only very gradually to a greater sense of trust in the unsupervised companionship between young people of both sexes.

Europeans are somewhat surprised when they are told about the absolute dependence of our great institutions upon popular and legislative support. They are likely to consider it a matter of principal uncertainty to rely upon such a source for the maintenance of work, the utility of which may not be immediately apparent and which requires first of all peaceableness and the assurance of stability and permanence. Their institutions too are supported by the state but through long continued appropriations together with funds that are permanently put at the disposal of the universities. Learning has so long relied for its support upon the authority of the few that it is somewhat new and startling to have it placed in the position of constantly justifying itself to the judgment and opinion of the many. Yet it is the most characteristic element in our Western universities that they are so closely identified with the life of the



commonwealth that they will rise or fall with the growing or receding consciousness among the whole people of the value of scientific investigation and learning; and our recent history seems to indicate that the chance of a permanent or serious recession are small.

As Europe has become interested in the University of Wisconsin so even in a greater degree has it become aware that our commonwealth has come to occupy a representative position in the United States. The new understanding of public authority which makes of it more than a neutral arbiter in the law court, which makes it the representative of the common interest of the people, the agency for developing the welfare through just arrangements in legislation and through the fostering of conditions which will improve the life of men and the quality of the human race,—this has been advanced by the state of Wisconsin in a manner both progressive and conservative; progressive, in that we were not afraid to

adopt new laws and institutions that seemed equitable and beneficial; conservative, because in no case were these things carried to radical extremes, but they were always carefully and wisely adapted to the general life of our state and its institutions. This temper and these legislative activities have attracted the attention of Europe as the most notable contemporary development in American political life. So though it may be true that Wisconsin legislation of the past decade has not been the best kind of advertisement for readily getting capital from Wall Street, it has impressed thinking men the world over as a well-considered course of action wisely carried out. The state of Wisconsin has brought honor and new significance to the good old term "Commonwealth." Sometimes we get a truer sense of proportion by viewing a thing from a distance; so a distant view may lead us to appreciate that great things are being done, not only in London, Paris, Berlin, and Washington, but also in Wisconsin.

### **Attention! Alumni!**

The attention of the alumni is called to the production of "Der Arme Heinrich", written by Hauptmann. This play was recently produced by the Germanistische Gesellschaft, in Madison, under the able direction of Dr. Feise, and will be presented in Milwaukee at the Pabst Theatre, on February 21, 1913.

# A SUMMARY OF THE UNIVERSITY BILL



FOR the information of the alumni a synopsis of the university bill, recently introduced in the legislature, is given below. The explanatory remarks are based upon the estimates of the president, the deans and directors, and the business manager, as submitted to and approved by the regents.

### Continuance of the Mill Tax.

1. The bill provides for the continuance of the three-eighths mill tax "for current and administration provement of the facilities of the expenses and for the increase and im-university." If this tax were to yield for the years beginning July, 1913, and July, 1914, relatively the same amount as that obtained for the present college year, the univer-sity would receive

For 1913-14 .....	\$1,118,880
For 1914-15 .....	1,174,824
	\$2,293,704

### Offset to Taxation Decrease.

2. When the three-eighths mill tax provision was passed by the legislature of 1911, the estimated income was based upon the then as-sessed valuation of personal prop-erty. With the coming of the income tax, however, this valuation has been reduced considerably. The result is that the university, because of condi-tions that have arisen over which it has had no control, does not receive what was expected even for the cur-rent year. To make up this decrease, the following sum is asked:

For 1912-13 .....	\$92,389
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3. For 1913-14 and for 1914-15 a similar decrease must be met, and in addition such increases in salaries and ordinary running expenses are to be provided for as are necessitated by the normal growth of the institu-tion and of the individual depart-ments. The following sums are asked for to meet this situation:

For 1913-14 .....	\$175,000
For 1914-15 .....	225,000
	\$400,000

### Educational Buildings.

4. The legislature of 1911 allotted the university for educational build-ings the sum of \$300,000 for 1912-13, and \$300,000 for 1913-14, with the proviso that in each of these years \$50,000 of this sum be used for books, apparatus, furniture, and equipment. It is now asked that a similar sum be appropriated for building purposes, both for 1914-15 and 1915-16, it being agreed that \$50,000 each year shall again be used as above stated. In other words, the bill provides:

For 1914-15, buildings .....	\$250,000
For 1914-15, books, etc.....	50,000
For 1915-16, buildings .....	250,000
For 1915-16, books, etc.....	50,000
	\$600,000

Among the educational buildings contemplated, the following are be-lieved by the regents to be most pressingly needed:

#### LETTERS AND SCIENCE.

Wisconsin high school.....	\$ 45,000
Liberal arts building.....	150,000
Physics building .....	200,000
Lake side laboratory.....	35,000

**AGRICULTURE.**

Soils .....	\$ 58,000
Library annex .....	6,000
Improvements .....	24,000

**ENGINEERING.**

New shop building.....	\$ 55,000
Equipment .....	10,000

**MEDICINE.**

Medical building .....	\$200,000
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**MILITARY.**

Drill hall .....	\$ 75,000
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**HEATING PLANT.**

Additional boilers .....	\$ 20,000
	<hr/>
	\$878,000

The bill specifies that the buildings be constructed and equipped in the order of greatest need. The construction and maintenance of a "school for demonstration and practice" (i. e., the Wisconsin High School) is specifically authorized in the bill.

**Student Buildings.**

5. The largest single appropriation asked for is that for student buildings, viz., for dormitories, a commons and union for the men, and an infirmary. The bill calls for the appropriation of \$250,000 per year for a period of four years beginning July 1st, 1913. (It will be remembered that the legislature of 1911 made provision for the erection of a women's dormitory, which will be ready for occupancy by next fall.) By years the amounts for student buildings are as follows:

For 1913-14 .....	\$ 250,000
For 1914-15 .....	250,000
For 1915-16 .....	250,000
For 1916-17 .....	250,000
	<hr/>
	\$1,000,000

If these appropriations are made, it is contemplated that within the next biennium the following student buildings will be constructed:

Infirmary .....	\$ 50,000
Commons and union.....	150,000
Dormitories (2) .....	300,000
Boat and bath house.....	7,500
Equipment .....	100,000
	<hr/>
	\$607,500

**University Extension.**

6. Specific provision is made for the extension division, in that the bill calls for the appropriation of the following amounts:

For 1913-14 .....	\$150,000
For 1914-15 .....	150,000
	<hr/>
	\$300,000

**Agricultural Development.**

7. To aid in the agricultural development of the state, the bill specifically provides that demonstrations, experiments, and investigations be carried on under the auspices of the university, and that traveling schools of agriculture be held, if possible, in conjunction with the county training schools. The sums to be appropriated are:

For 1913-14 .....	\$40,000
For 1914-15 .....	40,000
	<hr/>
	\$80,000

**Land Purchases.**

8. Finally, the university has options on a number of lots near the university campus, and on the Koch farm. To purchase these pieces of land, the bill asks for the following appropriation:

For 1913-14 .....	\$ 50,900
For 1914-15 .....	50,900
	<hr/>
	\$101,800

## THE GROWTH OF THE UNIVERSITY

Year.	Graduate School. <sup>1</sup>	Letters and Science. <sup>2</sup>	Course in Pharmacy.	School of Music.	Medical School.	Mechanics and Engineering.	Agriculture, Long.	Agriculture, Middle.	Short and Dairy Course.	Home Economics.	Law School.	Library School.	Summer Session.	Less twice enumerated.	TOTAL.
02-03	119	1232	35	126	--	585	36	--	425	--	226	44 <sup>4</sup>	410	205 <sup>5</sup>	2870
03-04	115	1276	36	172	--	744	60	--	465	--	201	30 <sup>4</sup>	400	203 <sup>5</sup>	3151
04-05	148	1443	33	153	--	804	87	--	439	--	183	59 <sup>4</sup>	403	203 <sup>5</sup>	3342
05-06	158	1547	32	209	--	768	143	--	485	--	154	51 <sup>4</sup>	528	295 <sup>5</sup>	3571
06-07	180	1542	37	191	--	799	150	--	472	--	165	71 <sup>4</sup>	568	265 <sup>5</sup>	3659
07-08	232	1705	32	150	25	921	160	--	534	--	157	42 <sup>4</sup>	661	332 <sup>5</sup>	4013
08-09	246	1865	44	114	32	896	215	35	609	--	165	22 <sup>4</sup>	1026	480 <sup>5</sup>	4521
09-10	281	2150	42	143	49	781	277	74	561	52	159	30 <sup>4</sup>	1128	469 <sup>5</sup>	4947
10-11	347	2379	47	74 <sup>3</sup>	47	807	402	100	611	100	148	29	1263	468 <sup>5</sup>	5539
11-12	377	2409	38	74	57	728	508	101	557	134	158	34	1537	587 <sup>5</sup>	5748
12-13 <sup>6</sup>	338	2288	41	60	65	655	553	93	563	156	160	36	1746	650 <sup>5</sup>	5766

<sup>1</sup> This column not included in the total, since the Graduate Students are already included in the college to which they belong.

<sup>2</sup> This includes the courses in commerce, chemistry, journalism, normal course and the training of teachers. These courses are so interwoven with the other courses of the college of letters and science that they cannot well be separated.

<sup>3</sup> This apparent decrease in the number of music students is due to a different method of classification.

<sup>4</sup> Not included in totals.

<sup>5</sup> This large number is due to the fact that many persons who were present at the summer session were also present in the regular sessions of the university.

<sup>6</sup> Figures for 1912-13 for first semester only.

## FROM THE CAMPUS

A full course in medicine will in due time be developed at the university. The clinical facilities of Milwaukee will be utilized.

Two short courses in agriculture are given in Wisconsin this year in connection with the four year courses at the New Richmond and Arena high schools.

Professor A. R. Hohlfeldt, chairman of the German department of the university, has been chosen president of the Modern Language Association of America.

Professor W. A. Scott, director of the course in commerce, has been elected a member of the executive committee of the American Economics Association.

Professor E. B. McGilvary, head of the department of philosophy of the university, has been elected president of the American Philosophical Association.

Greek and Latin are taught by the correspondence method in the extension division. Courses all the way from the most elementary up to those of university grade are offered.

The Wisconsin Commoners, a society consisting of students who are not members of Greek letter fraternities or class societies, has been organized. The formation of this society crystallizes the anti-fraternity movement which has been in the making for a number of years.

The regents of the university will construct a fireproof library stack room to be attached to the northwest corner of the reading room of the library of the present agricultural building. The additional space is made necessary by the growth of the agricultural library and the pressing need for additional space for book stacks.

The Glee and Mandolin clubs gave four successful concerts during the Christmas holidays. Notable among these was the concert given at Racine, Wis., under the auspices of the University of Wisconsin Alumni Association of Racine. Secretary

Bickel reports that the association turned over to the clubs \$31.00, which was 25 per cent of the net proceeds over and above expenses. The association itself cleared almost \$100. The entire house was practically sold out. Mrs. Charles Carpenter, former president of the University of Wisconsin Alumni Association, was hostess to the clubs one afternoon.

A two year course in forestry has been opened in the university. The work begins at the college on January 7, and on April 16 the students begin study at the state forest reserves. While in the field the student will receive board and lodging but will be expected to put in half of his time in connection with the practical work of instruction. The field course closes July 31, but students selected on the basis of their qualifications will be given an opportunity to remain until November, receiving compensation for extra time so put in. This course prepares the students to be trained rangers, guards, tree planters, and fits them for positions with lumber companies, nurserymen, owners of timber estates, and in the state forest service.

Prof. Edward C. Elliott, of the education department of the university and head of the course for the training of teachers, has refused the offer of the presidency of the University of Idaho recently made him by the board of regents of that institution.

Former Dean W. A. Henry of the College of Agriculture, now emeritus professor, has presented to the university his private library, embracing a nearly complete file of experiment station reports and bulletins, which he requested to be maintained for the use of the director of the Wisconsin Experiment Station. The regents of the university have adopted resolutions expressing their appreciation of Prof. Henry's continued interest in the university, as manifested in this gift and that of a painting, a copy of Rosa Bonheur's "Oxen Ploughing in the Nivernais."

# HARRY JOHNSON TO LEAD 1903 IN BIG REUNION

ABBIE C. TERRY, '03



GAIN '03 showed the proper spirit, when sixteen of its members, after having loyally performed their part of rooting at the Chicago game, assembled in the dining room of the University club, with the express purpose of considering three matters of business, namely, to enjoy the dinner arranged for by their chairman, George Keachie; to talk over old times; and, last, but not least, to make plans for the big 1903 reunion in June, 1913.

No time was lost in attending to the first two numbers on the program, and '03 classmen proved beyond a doubt that "there's always fair weather when good fellows get together." From the window, the so-called big bonfire celebration could be seen, and occasional rather faint-hearted cheers from the lower campus called forth such remarks as, "It wasn't that way in 1903!" "They don't know how to celebrate nowadays!" "Do you remember how after that Minnesota game, we, etc., etc., etc.?" "Why, even the songs don't sound as they used to!"

What a shame that the alumni people cannot return more often to show the young generation how to do it! But, never mind, next June will see a celebration which will be a sample of the old kind.

After having disposed of the first two items of business to the satisfaction of every one present, the representatives of '03 proceeded to lay

plans which should make the tenth anniversary a record breaker. It was decided that most important of all was the necessity of a good, live, enthusiastic chairman, who should be able to inspire others with an enthusiasm as great as his own, and to direct and carry through successfully a big undertaking. After a thorough canvass, it was decided that Harry Johnson was the very man for the office. He was, accordingly, unanimously elected general chairman.

That matter having been so satisfactorily settled, various plans were discussed for stirring up interest in the different towns, and for entertaining the visitors. It was finally decided, however, that the chairman-elect was the person best suited to select a corps of able assistants, who could devise ways and means of making the reunion a great success. He was, therefore, given full power in selecting committees and arranging details, with the exception of the appointment of treasurer, an office which it was necessary to fill immediately. Irving Seaman was elected treasurer, and demonstrated his ability by collecting from those present, without any grumbling on either side.

After a vote of thanks to the retiring chairman, who had so ably carried out his part of the program, the meeting adjourned until next June, when the sixteen hope to meet many times that number of loyal '03's.

## PROFESSOR COMSTOCK SIGNALLY HONORED



THE election, on January 15, of Professor G. C. Comstock, L. '83, as fellow of the American Society of Arts and Sciences, the second oldest learned society in America, adds another honor to the many scientific distinctions awarded the director of the Graduate School and of Washburn Observatory in recent years. Five and one-half years ago his other Alma Mater, the University of Michigan, from which he was graduated with the degree of Ph. B. in 1877, honored him with the degree of Sc. D. During the same year the University of Illinois bestowed upon him the honorary degree of LL. D. in recognition of his scientific investigations. He is a member and first vice-president of the Astronomical and Astrophysical Society of America, chairman of an important committee of the National Academy of Science of America, and a member of the Societé Astronomique of France, the Astronomische Gesellschaft of Germany, and the Sociedad Astronomica of Mexico. Recently Professor Comstock's observa-

tions on Halley's comet have attracted the special attention of the scientific world.

To the Wisconsin alumni clubs in the larger cities Professor Comstock is better known than any other member of the faculty, with the possible exception of President Van Hise. He is usually sent as the university's representative to the annual reunions of the local alumni, and his remarkable command of language, together with his wealth of information about the university, makes him a most pleasing speaker. Whenever a new president is installed at some university, or an institution of higher learning celebrates a jubilee, Professor Comstock is, as a rule, sent to represent the Badger institution. He is also in constant demand as a speaker at the annual meetings in various institutions, of Sigma Xi, the honorary scientific society.

Professor Comstock's election to the American Society of Arts and Letters is but the second one awarded to a citizen of Wisconsin. The other Wisconsin Fellow of the Society is President C. R. Van Hise, '79.



# EDITORIAL

## THE NEED OF A HALL OF LIBERAL ARTS

In another section of this issue a synopsis of the university bill is presented to our readers. No comment is made as to whether or not from the alumni point of view a given appropriation seems necessary. We call the attention of our readers, however, to the article by Thomas Lloyd Jones, '96, on the need of a Hall of Liberal Arts. Mr. Jones was asked by the Alumni Committee on Legislation to serve as chairman of a sub-

committee to investigate the need for this particular building. His conclusions are set forth in his article. In a similar manner a special alumni sub-committee will look into every appropriation asked by the university, and its findings will be presented in these columns. Alumni desiring additional information are requested to correspond with the Alumni Headquarters.

## THE LANGUAGE AND LITERATURE CLUB

Professor L. B. Wolfenson, secretary of the Language and Literature Club of the university, wishes to call the attention of alumni to the meetings of this club. These meetings are open to the public, and all interested are cordially invited to attend. The papers for the program are usually two and both are of general interest as well as of scholarly importance. The club meets in the

lecture room on the third floor of the Historical Library, and includes in its active membership graduates, students and faculty of the departments concerned. The officers for the current year are: Professor F. O. Reed, president; J. F. A. Pyre, vice-president; L. B. Wolfenson, secretary-treasurer; H. B. Lathrop, chairman of the program committee.

The next meeting of the club will be held on March 7, 1913.

## YOUR CLASS REUNIONS

So far the class of 1903 is the only class efficiently organized to promote a reunion. Where are the classes of 1908, 1898, 1893, 1888, 1883, 1878, 1873, 1868, 1863, and 1858? Within four months arrangements must be completed if the reunions are to be a success. Will not some one highly

interested in his class send for the latest addresses of his classmates and begin the work? Four more issues of The Wisconsin Alumni Magazine will appear before June, and promoters of reunions are especially invited to use these columns to their fullest extent before that time.



## JOURNALISM AT WISCONSIN

PROFESSOR Willard G. Bleyer, '96, chairman of the Course in Journalism at the university, was elected president of the American Conference of Teachers of Journalism, organized in Chicago on November 30. This conference, representing fourteen colleges and universities, was created for the purpose of holding "annual conferences of those interested in the teaching of journalism, where opportunity shall be offered for hearing papers on the subject and for discussing them; and to collect statistics relating to schools, courses, and teaching in journalism." The next conference will be held at the University of Wisconsin, November 28 and 29, 1913.

The university is being recognized more and more as a journalistic center. During the past summer the first National Newspaper Conference was held on the Wisconsin campus. Next summer this same national newspaper body will again meet in Madison, and in the fall the teachers of journalism will meet at the university. The university will thus act as host to the nationally prominent practical newspaper and magazine writers, to men who apply their journalistic knowledge in every day life, and also to the instructor in the art of journalism, to the teacher who instructs students in journalistic technique and in the journalistic style of writing.

## THE ENGINEER

ON reading the short sketches of only a few of the many successful Wisconsin engineers, one cannot help realizing that the graduate of the College of Engineering is out in real life, applying his training to the needs of our complex world, and working for more efficiency in all walks of life.

The engineer holds a Man's job. The work he does must stand the wear and tear of our whole economic life. Pet theories are of no avail to him if they cannot be applied to practical ends. The engineer builds the foundation upon which we live. He is the guardian of public safety

and public welfare. He is the true builder.

While we go soaring about in philosophical speculations, creating a world of thought for our own amusement and pleasure, let us not forget the engineer who is right down to earth all the time, creating a better world for people to live in and providing for those comforts of life which make existence a pleasure. To the engineer the world is a real world with millions of mysteries. His desire to know and learn alone justifies his existence in an immensely practical world. To the engineer our admiration and respects!

# ALUMNI NEWS

The success of this personal news department is dependent upon the interest every alumnus takes in his Magazine. News items should come direct from graduates if this department is to be valuable and reliable. Contributors to these columns will greatly aid the editor if they designate the class and college of the subject of their sketch in the news items.

Following is the list of class secretaries who send in news of their respective classes:—  
1884, Milton Orelup Nelson; 1887, Mrs. Ida E. Johnson Fisk; 1888, Florence Porter Robinson; 1889, Byron Delos Shear; 1890, Willard Nathan Parker; 1892, Mrs. Linnie M. Flesh Lietze; 1893, Mary H. Oakley; 1896, George Farnsworth Thompson; 1897, Mrs. Laura A. Osborne Austin; 1898, Jeremiah P. Riordan; 1899, Mrs. Lucretia Hinkley McMillan; 1900, Joseph Koffend, Jr.; 1902, Mrs. Merle S. Pickford Stevens; 1903, Willard Hein; 1904, Mrs. Florence S. Moffat Bennett; 1905, Louis H. Turner; 1906, Marguerite Eleanor Burnham; 1907, Ralph G. Gugler; 1908, Winifred Merrill and Thomas Hefty; 1909, Eugene Arthur Clifford; 1910, Kemper Slidell; 1911, Erwin A. Meyers; 1912, Harry John Wiedenbeck.

## BIRTHS

1900. Born—To Professor and M<sup>s</sup>. H. K.  
1910. Bassett, Madison, Wis., a daughter. Mrs. Bassett was Hester Adeline Brown, '00.  
1906. Born—To Mr. and Mrs. Alfred J. Sorem, Madison, Wis., a son. Mrs. Sorem was Adeline Nelson, graduate of the university school of music.  
1908. Born—To Mr. and Mrs. B. O. Bishop, 1504 Deane Blvd., Racine, Wis., on December 27th, 1912, a son.

## ENGAGEMENTS

1910. Mr. and Mrs. Charles Frederick Persch, 4517 Beacon St., Chicago, announce the engagement of their daughter, Adele, to Dr. Harry McPherson Brandel, '10, Oshkosh, Wis.  
1906. Rev. and Mrs. T. W. Owen, Webster City, Iowa, announce the engagement of their granddaughter, Laura Belle Owen, to Dr. Paul D. Potter, '06, son of Mr. and Mrs. A. M. Potter, Webster City, Iowa. Miss Owen is a graduate of the University of Nebraska. Mr. Potter received his Ph. D. degree from Chicago university in 1912, and is now with Sprague, Warner & Co., Chicago. The wedding will take place in the early spring.

## MARRIAGES

1894. The marriage of Miss Ernestine Schroeder to Herman L. Emmerich, '94, Milwaukee, Wis., occurred on January 3rd, at the home of the bride's parents, Mrs. John Schroeder, 504 Galena St. Mr. and Mrs. Emmerich will be at home after March 1 at 720 Maryland Ave., Milwaukee, Wis.  
1902. Walter S. Hopkins, '02, formerly general secretary of the Y. M. C. A. at Tarrytown, N. Y., was married on Christmas night to Miss Bertha Widmann of Rome, N. Y., a graduate of Hamilton college and a teacher in Jersey City, N. J., high school. Mr. Hopkins has just been appointed general secretary of the Y. M. C. A. for the state of Colorado.  
1903. On New Year's evening in Fond du Lac, Wis., took place the marriage of Genevieve Mihills and Dr. William Atwood Mowry, formerly of Chicago and now of French Lick Springs. Miss Mihills is a member of the Kappa Kappa Gamma sorority.  
1904. On December 14, 1912, occurred the marriage of Dr. Roscoe Conklin Whitman, '04, and Miss Cryder, Morris, Ill. Dr. and Mrs. Whitman have made their home in Morris, Ill.

1904. The marriage of Miss Gertrude Cohen, daughter of Mr. and Mrs. Henry Cohen, 241 Twenty-fifth St., Milwaukee, Wis., and Leo Reitman, took place on December 24, 1912. Mr. and Mrs. Reitman will be at home after March 1 at 241 Twenty-fifth St., Milwaukee, Wis.
1906. Mr. and Mrs. Granville Duane Jones of Wausau, Wis., announce the marriage of their daughter, Orpha Edna, to Ralph Wall Collie, '06, of Merrill, Wis. The wedding occurred on December 28, 1912. Mr. and Mrs. Collie will reside at Wausau and will be at home after February 1.
1907. The marriage of Miss Erminie Rost to Lewis Sherman, Milwaukee, took place on January 29.
1908. Announcement is made of the marriage of Miss Alma Leona Wolfgram and Orlo J. Bussewitz, '08. The wedding took place in Milwaukee on December 14, 1912, at the home of the bride's parents, Mr. and Mrs. Frederick A. Wolfgram. Mrs. Bussewitz is a graduate of the Milwaukee conservatory of music. The couple will live in Juneau.
1909. Lilla M. Pomeroy, '09, and Lawrence Edgar Cochran of St. Louis, were married at the home of the bride in Oconomowoc, Wis., on Wednesday, January 1. Mrs. Cochran is a member of the Phi Beta Kappa fraternity. Mr. Cochran is the agent of the Wells, Fargo & Co. Express in Seattle, Wash., where the couple will make their home after a trip through the west.
1910. The marriage of Charles Moritz, '10, and Ada MacAdam, '10, has been announced. Miss MacAdam is the daughter of Mr. and Mrs. MacAdam of Joliet, Ill., and is a member of the Pi Beta Phi sorority.
1911. Everett A. Burmester, '11, of Madison, was married in Amherstburg, Canada, on January 4, to Miss Ethel E. Smith, daughter of Captain and Mrs. John T. Smith. The groom is

in the employ of the Great Lakes survey office, Detroit, and was a member of the party of engineers aboard the steamer Search, on Lake Michigan, last summer. Mr. and Mrs. Everett Burmester will be at home to their friends in Detroit, Mich., after February 1.

1912. Myron H. Utgard, '12, formerly of New Richmond, Wis., and Miss Lucile Schuster, formerly of Whitewater, Wis., were married in Spring Grove, Va. The bride is a graduate of the Whitewater Normal School. The groom was a prominent agricultural student and an able debater on the annual joint debate at the university.
1912. Announcement has been made of the marriage of Myrtle Hunt and Albert Harrison Clemens. The wedding took place at the home of the bride's parents, Mr. and Mrs. J. W. Hunt, 110 West Johnson St., Madison, Wis. Mr. Clemens is a teacher of science in the high school at Oconto, Wis.

## DEATHS

### EDWARD P. VILAS, '72.

Edward P. Vilas, brother of the late United States Senator William F. Vilas, and a leading lawyer of Milwaukee, died on December 26, 1912, from injuries sustained Christmas night, when he fell down stairs in his home at 530 Astor St. He is survived by his wife and one son, Charles Atwood Vilas.

At the time of the accident, Mr. Vilas was, with the exception of the servants, alone in the house. Mrs. Vilas had gone to Evanston to spend Christmas day with her son, Charles Atwood Vilas. At 10 o'clock Christmas night, Mrs. Vilas and her sister returned and upon entering the house found the unconscious body of Mr. Vilas.

Commodore Vilas was born in 1852, and was the son of Judge Levi B. Vilas, a distinguished member of the bar of Wisconsin. He graduated from the university in 1872, and in 1875 entered the practice of

law with his brother, W. F. Vilas. He went to Milwaukee in 1888 to become a member of the firm of Jenkins, Winkler, Smith & Vilas. This firm was later reorganized as Winkler, Flanders, Smith, Botum & Vilas. Mr. Vilas left it about eight years ago, and has since practiced alone.

He was for a time after his graduation secretary of a division superintendent of the Chicago & Northwestern road. He was later court commissioner at Madison and after his removal to Milwaukee was appointed by Gov. Peck as one of the trustees for the asylum for the chronic insane for Milwaukee county. This was the only other political office he ever held. He was a Democrat in politics and a member of the Milwaukee, Country, Deutscher and Lawyers' clubs and president of the Arions for two years. He was at one time commodore of the Milwaukee Yacht club. He was married in Madison in 1877 to Miss Elizabeth Atwood, daughter of Gen. David Atwood, founder of the Wisconsin State Journal.

#### JUDGE ANTHONY DONOVAN, '90.

Judge Anthony Donovan died at his home in Madison, Wis., on January 1. Bright's disease was the cause of his death. He is survived by a widow and six children, Mrs. J. W. Madden, Misses Adelaide and Katherine Donovan, Madison; Mrs. Louise Allen, Lindsay, Cal.; W. C. Donovan, Spokane, Wash., and Dr. Joseph P. Donovan, health officer of Madison.

Judge Donovan, father of the late Judge John E. Donovan of Milwaukee, was 63 years old. In his youth he learned the blacksmith trade, and continued in that work until at the age of forty he graduated from the law department of the university. Then he quit blacksmithing and entered legal practice. His rise in the profession was remarkably rapid, and he was soon elected judge of the municipal court, which office he held until incapacitated by illness. His last appearance in court was in August, 1912.

## THE CLASSES

1896.

L. E. Gettle of Edgerton, Wis., has been appointed secretary of the railroad rate commission of Wisconsin to succeed J. M. Winterbotham, recently resigned. The commission had selected Erich Stern, Milwaukee, for the place, but Mr. Stern was unable to accept.

1899.

Mary E. Pickarts, the office assistant in the Women's gymnasium at the university, has resigned her position.—Dr. Herman Brauer, who studied political conditions in New Zealand and Australia for eight years, is now in Seattle, Wash., in charge of the new department of legislation and municipal reference. He will compile data for the Washington legislators.—Jessamine Lee Fox is a senior in the College of Law of the University of South Dakota. She was the winner in her class of the freshmen and junior prizes for best general scholarship.

1900.

O. A. Stolen of Mount Horeb, Wis., has been selected as one of the attorneys to assist in drafting bills in the legislative reference library, Madison, during the present session. He takes the place of William Ryan, who has been elected city attorney of Madison.—C. V. Hibbard, general Y. M. C. A. secretary, Dairen, Manchuria, in his annual report for the year ending September 30th, 1912, speaking of the public confidence the Association enjoys, writes: "Two years ago, when Secretary Morise and I first called on President Z. Nakamura of the South Manchuria Railway, he received us courteously, but it was evident that he regarded the Young Men's Christian Association as superfluous. A year ago we went to him through his secretary with a request for an appropriation towards the expense of a physical director. This was refused. Last March he trebled his annual subscription to the Association and a little later visited the building and the next day sent three

watches to be presented to the three men in the dormitory who made the best use of the privileges offered. About the same time the railway made us a reduction of 20 per cent on coal, gas and electric lights. The principal officials of the company all made substantial increase in their subscriptions."



WALTER S. HOPKINS, '02  
General Secretary, Y. M. C. A. Colorado

1902.

Henry L. Janes of Racine, who has been assistant chief of the Latin-American division in the state department at Washington, D. C., sailed for Ecuador as the representative of the United States government in a suit between Ecuador and the Guaya-

quil and Quito Railroad, which involves more than a million dollars. The railroad claims that the government of Ecuador should pay this sum for damages to the road during the recent revolution, and Mr. Janes goes as arbitrator.—Cornelia E. Notz was recently appointed librarian of the Carnegie public library of San Antonio, Texas. Miss Notz is a graduate of the Drexel Library School, Philadelphia, Pa., and has been connected with the libraries of the Whitewater and River Falls normal schools and of Yale university.

1903.

Stuart Jamieson Fuller, American consul at Iquitos, Peru, who investigated the reported outrages against the Peruvian Indians in the Putumayo rubber district, has conferred with the officials in the state department at Washington, D. C. It is said that the outrages are such as to give rise to one of the most perplexing Latin-American problems with which the state department has had to deal, especially in view of the fact that British corporations are the principal operators in the Peruvian rubber field.

1904.

Clifford C. Pease, law, '11, has removed from Madison, Wis., to San Diego, Cal., where he has opened a law office in the Timken building.—Andrew Grover DuMez, formerly assistant in the department of pharmacy at the university, is now in charge of the course in pharmacy at the University of the Philippines. This from his letter: "Contrary to the opinion in the United States, the climate is not so very disagreeable over here in the city. The hot months come in April, May and June, and then we move up to the summer capital at Bagio. Manila has four English daily papers, a good street car system, electric and gas lights, telephones, and the best hotel in the orient. It is a clean city for its size, being much cleaner than a great many of our American cities."

1905.

Robert C. Zuppke has been appointed football coach of the University of Illi-

nois. His appointment has met with the approval of Illinois alumni.—John D. Jarvis, formerly instructor in dairying at Purdue university, is the subject of a personal sketch in the *De Laval Monthly*. He is advisory expert in the new Dairy and Creamery Improvement department of the De Laval Company.—Edward Erickson was re-elected county superintendent of Walsh county of Minot, North Dakota, at the election last fall.—Alfred G. Arvold, Fargo, North Dakota, is secretary of the North Dakota County Life Conference, and arranged for one of the most important gatherings of farmers, teachers, and pastors, ever held in the Middlewest.

1906.

Professor F. L. Shinn of the department of chemistry at the University of Oregon was burned about the arms when a retort exploded in the laboratory where he was distilling wood chips.—Dr. Henry P. Severin of Milwaukee, now a professor in a college in Honolulu, was elected to an honorary fellowship at the university by the board of regents. He has held a scholarship at the university and a fellowship at the Ohio State university. In 1908, Dr. Severin was elected an honorary member of the Ohio State Scientific Society, Sigma Xi. He was awarded a fellow in the university in 1909.—Henry A. Davee is state superintendent of schools of the state of Montana.—Francis Ellis Johnson is instructor in electrical engineering at the Rice Institute, Houston, Texas. In his undergraduate days Mr. Johnson was a member of the student conference, president of the Young Men's Christian Association, and rowed for four years on the crew.

1907.

Professor F. O. Holt, formerly principal of the Edgerton high school, has accepted the superintendency of the Sparta, Wis., high school.—E. C. Jones (Ned Jones), for two two years business manager of the Daily Advertiser, an important journal in English at Tokio, is visiting the United States with his wife. His Wisconsin home is in

Portage.—George S. Hine has been chosen state dairy commissioner of Kansas. After graduating from the university, Hine was for a time principal and superintendent of the Marinette county agricultural school, which position he left to accept an appointment upon the lecturing staff of the Kansas state agricultural college. Mr. Hine is a former Wisconsin crew man.—Francis Todd H. Doubler should be addressed care of Shanghai and Hongkong Banking Co., Manila, P. I. He is this year traveling around the world.—Dr. Benjamin F. Davis has changed his address from Chicago to 103 N. W. Chestnut St., Creston, Iowa.—M. L. Holmes should be addressed at Shell Beach, Sarasota, Florida.

1908.

Charles H. Scheuer is in the employ of the Oliver Iron Mining Co., as chief engineer of the Fayal district. His address is Fayal Office, Eveleth, Minn.—H. G. Kisingbury left the employ of the Union Electric Light & Power Co., of St. Louis, by whom he had been employed for the past three years as assistant auditor and chief statistician. He is now taking up similar work for Hodenpyl, Hardy & Co., of New York.—George W. Hewitt has taken the position of superintendent of blast furnaces of the National Tube Company's Riverside works at Wheeling, W. Va. Mr. Hewitt went to Wheeling in 1909 as a minor foreman, his first year after graduation having been spent in chemical works in New Jersey. Since February, 1912, he has been assistant superintendent of the blast furnaces.—H. R. Wahl, after graduating from the medical department of Johns Hopkins university, is now assistant in the department of pathology at the Western Reserve Medical school, Cleveland, Ohio.—Lucian Cary, ex-'08, is associate editor of the Chicago Evening Post's literary supplement, one of the best known critical publications of the country.—Fred Wolff is a mining engineer with the Oliver Iron Mining Co., at Duluth, Minn. Address, 608 Wolvin Bldg.—Edward J. Hawley is with the Oliver Iron Mining Co., at

the Genoa mine. Address, Genoa Mine Office, Sparta, Minn.—Edwin F. Gruhl, with the Wisconsin state railroad commission since 1908, has left for New York to accept an important position with the North American Company, a corporation that owns or controls nearly sixty million dollars worth of gas and electric properties in the United States. Mr. Gruhl will supervise subsidiary companies and report to the holding company on the efficiency of the smaller companies.

1909.

Miles C. Riley of Madison, Wis., was appointed secretary of the Conference of Governors, permanent organization of which was effected at the recent meeting at Richmond, Va. Mr. Riley is on the staff of the Wisconsin legislative reference library.—E. E. Witte, statistician in the office of the Industrial Commission, has gone to Washington, D. C., to become secretary to Congressman John M. Nelson. For some time after his graduation, Witte was assistant in history and economics at the university. During the last two years he specialized in economics, particularly along the line of labor problems. His effective work of the Industrial Commission in labor statistics contributed largely to his appointment by Mr. Nelson.—Edgar B. Coladay has changed his address from Ft. H. G. Wright, N. Y., to Ft. Howard, Md.

1910.

Charles Chester Pearce is the debating coach at Columbia university.—Carl Hookstadt of the library of Congress, Washington, D. C., has a contribution in the November issue of the American Political Science Review on "Recent Government Publications of Political Interest."—Florence Roach now resides at 226 Cahuenga Blvd., Los Angeles, Cal., where she and her parents are spending the winter.—Ralph R. Birchard is with the Shaw Advertising Co., 608 S. Dearborn St., Chicago.—Florence Two, secretary of the Public Welfare Association, Superior, Wis., has left Superior to become affiliated with the United

States Charities of Chicago.—Grace Griffin, a member of the physical training department of the university, has left for Helena, Mont., where she will take a similar position in the high school.—George A. Scarcliff of Janesville, Wis., has accepted a position as civil engineer with the Brazilian Iron & Steel Company, Ouro Preto, Brazil. Mr. Scarcliff will make linear and topographical surveys of various properties and holdings.—K. E. Wagner is now located at 46 High St., Freeport, Ill.—Howard F. Ilgner is now connected with the distribution department of the Eastern Michigan Power Co. Address, 305 W. Franklin St., Jackson, Mich.

1911.

William H. Ellis is with the Louisiana Central Lumber Co., manufacturers of yellow pine lumber, Standard, La.—Clayton R. Burt should be addressed at room 151 Government Land Office, Washington, D. C.—Basanta Koomar Roy of Calcutta, India, is lecturing for the Extension Division in Wisconsin. The second January issue of the *Outlook* contained an article by Roy on the famines of India.—Elizabeth M. Davis is teaching domestic science in Kenmore, North Dakota.

1912.

Arnold O. Dahlberg is located in Washington in the main laboratories of the dairy division, U. S. Department of Agriculture.—Elbert G. Bailey and Mrs. Margaret Steinle Bailey are located on Frank P. Frazier's farm, Ipswich, Mass.—Werner P. Wolff is engineer for the Oliver Mining Co., at the Fayal mine. Address, Fayal Mine Office, Eveleth, Minn.—George Dorr, Stoughton, Wis., has accepted a position with the engineering department of the Rock Island Railway Company. He will be stationed at Blue Island, Ill.—George E. Bennett and T. L. Harris, Ph. D., are teaching in the North Dakota Wesleyan university, Mitchell, S. D. Bennett has charge of the work in commercial law and corporations and Harris is professor of sociology and economics.

## BOOK REVIEWS

*Christianity and the Labor Movement*, by William M. Balch, '91. Published by Sherman, French & Co., 6 Beacon St., Boston, Mass. Cloth; 12 mo; \$1.00 net; by mail, \$1.00.

"Three distinctions are claimed for this volume. First, it is probably the only book, at least in the English language, devoted solely to a general survey of the labor movement in the light of Christian principles—a remarkable claim in view of the multitude of books on labor problems and on social Christianity. Second, it has the rare quality of being at once comprehensive and concise, discussing adequately the entire field of thought proposed, yet with such economy and suggestiveness of language as to invite the perusal of busiest readers. Third, the author's experience of several years as general secretary of the social service organization of one of the Christian denominations gives him unusual qualifications for knowing the main lines of interest and inquiry in popular thought on labor problems and thus enables him to write, not only for the social expert and the minister, but as well for the average citizen of thoughtful mind and public spirit.

"No subject is today more vital to Christian thought and life than that of this volume, and it is of equal civic importance. The present treatment of the subject is timely in the most vital way, and should prove helpful in the highest sense to a multitude of readers."

Duane Mowry, '75, contributes to *The Green Bag*, Boston, "an entertaining magazine of the law," an appreciative sketch of the late Hon. Ithamar C. Sloan, for a number of years Dean of the law school of the university. Mr. Sloan was assistant attorney general when the so-called "granger" railroad suits were in the courts, and his master mind did much to win that litigation for the state. Mr. Sloan was also a congressman from this state when living in Janesville. Mr.

Mowry makes it plain that the subject of his sketch was both a profound lawyer and a statesman possessing a high order of constructive ability.

Among the forthcoming publications by A. C. McClurg & Co., Chicago, is a volume of essays, "The Larger Values," by Humphrey J. Desmond of Milwaukee. Last year the same firm published "Little Uplifts" from Mr. Desmond's pen, and the success of this little volume led the publishers to another like volume from the author.

*Newspaper Reporting and Correspondence*, by Grant Milnor Hyde, instructor in journalism in the University of Wisconsin. New York and London, D. Appleton & Company, 1912. XI. 348 pages.

This book aims to supply students in journalism with a correlated and objectified standard in regard to the news story and all its accessories. To cull from the numerous newspapers of the country the best types of stories and then to select a few as representative of good journalism is a task from which even the most capable managing editor may justly shrink. However, someone must experiment with the task and why not the instructor of journalism? Mr. Hyde has written this book largely from his experience as an instructor in journalism, and consequently has approached the work both from an angle of criticism and construction. One news story is torn down and in its place a model is erected. This model is not constructed upon theory. It is a real story from one of our best metropolitan papers. Thus the student learns to distinguish between the effective and the efficient story and the poor story. On the whole, however, the book is more of a guide than a book of instruction, for writing of any kind cannot be taught. The writer must be a reader and student of facts. His style must be distinctively his own, otherwise he is a mere machine for which even a newspaper office has little use.



# INFORMATION WANTED

Where are these alumni and alumnae, and what are they doing?

- Adams, Clara Dane, Ph.B., '99.  
Adams, Francis Salisbury, M.S., '09.  
Adamson, William Henry, B.C.E., '86.  
Aleuyar, Isaac, B.A., '08.  
Alexander, Lake Cohen, LL.B., '02.  
Anderson, Gustav Alexander, B.S., '02.  
Anderson, Margaret, M.G.  
Anderson, Martin, B.S.A.  
Ayer, Charles, B.S., '93.  
Baird, Perry E., LL.B., '79.  
Bartman, John Henry, LL.B., '00.  
Beers, Horsea S., LL.B., '87.  
Benrick, Mary Louise, M.G., '08.  
Benson, Frederick H., B.C.E., '91.  
Bischel, Lawrence Joseph, LL.B., '97.  
Blake, Harry D., B.S.(C.E.).  
Blakely, Thomas T., B.L., '96.  
Blessner, Arthur Joseph, B.S., '04.  
Bliss, William Sylvester, B.M.E., '80.  
Booge, Harris Decateur, Jr., LL.B., '81.  
Borhough, Gustav O., M.A., '06.  
Bradford, Hill Carter, Ph.B., '59.  
Brady, Daniel Leo, B.A., '08.  
Brophy, Allen O., Agr.G.  
Brown, Byron Elijah, LL.B., '72.  
Brown, Joseph Andrews, LL.B., '91.  
Brownne, Edward B. M., LL.B., '71.  
Buck, Louise L., B.A.  
Burton, Charles F., Agri.G.  
Callecod, Ole, B.L., '95.  
Campbell, Mary, B.L., '95; M.A., '09.  
Cline, Louis Edgar, M.S., '07.  
Cooley, Homer De Los, B.L., '83.  
Cook, Henry Allen, B.A., '05.  
Cooper, Frank, LL.B., '81.  
Corp, Charles I., M.S.  
De Lap, Darwin, B.A., '06.  
Dexon, Fred, B.S.(C.E.), '97.  
Dohm, John Walter, B.S.(C.E.).  
Dukert, Richard F., LL.B.  
Egan, Arthur J., LL.B., '89.  
Emmons, William Marion, LL.B., '95.  
Ernst, Claude B., B.S.A.  
Eyerly, Frank David, LL.B., '96.  
Fishedick, Frank Henry, Ph.G., '86.  
Fjoslien, Sigrid, B.A., '06.  
Fleek, Belle L., B.A., '11.  
Fox, Henry, B.M.E., '92.  
Fox, Peter Oscar, Ph.G., '03.  
Frank, Leo Ernest, B.S.(C.E.), '00.  
Friedman, Rufus Judah, B.L., '03.  
Fuerste, William, LL.B., '89.  
Galbraith, Ernest John, LL.B., '09.  
Gates, James R., B.S., '11.  
Gigot, Gustave J., Ph.G.  
Giss, August J., B.L., '96; M.L., '97.  
Graul, Edward J., B.S.A., '11.  
Hagopiann, Hoohan, B.A., '04.  
Hall, Mary Frances, M.G., '08.  
Harnden, Emery D., LL.B.  
Hass, Edward Richard, Ph.G., '03.  
Hayden, Edwin Andrew, B.S., '94.  
Heidner, Albion Henry, B.S.(Med.), '11.  
Hodge, John Sherman, B.S.(M.E.), '04.  
Holmes, Harold H., Ph.G., '11.  
Holty, Nels Elias, LL.B., '01.  
Hopkins, George Allan, B.A., '99.  
Hopkins, Roy E., ex. '01.  
Hughes, John Price, LL.B., '93.  
Hvam, Thorwald, LL.B., '88.  
Ivey, Joseph William, LL.B., '79.  
Jackson, Evan O., LL.B., '88.  
Jones, John Reese, LL.B., '11.  
Jones, Solomon, LL.B., '86.  
Keefe, John C., Ph.B., '72.  
Kelly, Paul Frederick, B.A., '11.  
Kerns, Harriet White, B.L., '02.  
Kitagawa, Tometaro, B.S.(C.E.), '11.  
Kline, Catherine Genevieve, B.L., '99.  
Knappen, Theodore F., LL.B., '69.  
Knudtson, Knudt, B.S., '98.  
Konno, Rokuro, B.A., '11.  
Kraemer, Wilhelmina E., M.G., '03.  
La Motte, Frank Alexander, M.A., '08.  
Leahy, Thomas Edward, LL.B., '05.  
Lehman, Gottfried, M.A., '06.  
Leonard, Harry William, Ph.G., '11.  
Levitt, Sadie Rosalyn, B.L., '00.  
Lewald, Theodor, LL.D., '04.  
Locke, Morris W., LL.B., '06.  
Loew, Edward, LL.B., '96.  
Longfield, Raymond P., Ph.G., '05.  
Lukes, Charles Lincoln, LL.B., '96.  
Lyle, Frank William, B.L., '99.  
McAnaw, John James, B.L., '82.  
McArthur, Anna, B.S., '67.  
McBride, Robert J., LL.B., '94.  
McBride, Rosa Lillian, Ph.B., '99.  
McDaniel, Clarence, Ph.G., '07.  
McGlashin, Guy M., LL.B., '87.

- MacKenzie, Emma, B.L., '82.  
 McKercher, David Edwin, B.S., '76.  
 McLean, Harry Clayton, B.S.(M.E.), '08.  
 MacMahon, M. J., M.A., '80.  
 Magne, Charles W., LL.B., '98.  
 Manz, Matilda H., B.A., '05.  
 Mathias, Mary Constance, B.L., '01; M.G., '01.  
 Matson, Elvera, G.Sup.M.  
 Merrell, Frank Heath, LL.B., '73.  
 Merwin, Horace Stevens, LL.B., '80.  
 Meyrose, Henry V., LL.B., '98.  
 Miller, Frank Hayden, B.A., '91; M.A., '94.  
 Minich, Lewis C., LL.B., '96.  
 Minty, Louis William, LL.B., '99.  
 Mitchell, Ralph Kenneth, B.S.(Med.), '11.  
 Moeller, Roland, B.S.(M.E.), '09.  
 Moon, Orrin Blakely, LL.B., '83.  
 Moore, James Milton, B.S., '92.  
 Morrill, Frank Lewis, LL.B., '76.  
 Morrison, Edwin T., LL.B., '93.  
 Mullen, Leon T., LL.B., '06.  
 Murray, William, LL.B., '69.  
 Musser, John Albert, B.A., '92.  
 Nelson, Thomas P., B.L., '94; LL.B., '96.  
 North, William A., C.E., '11.  
 Nugent, Charles H., LL.B., '95.  
 Oaks, John Albert, LL.B., '96.  
 Paul, Clarence Arthur, LL.B., '94.  
 Paine, Francis W., M.A., '11.  
 Pepper, Michael William, Ph.B., '71; LL.B., '72.  
 Peterson, William, LL.D., '04.  
 Phillips, John Stone, LL.B., '72.  
 Powers, Theron Eugene, B.S., '92.  
 Priest, Edward B., B.A., '82.  
 Rawson, John Lupton, Ph.B., '05.  
 Refsell, Oscar Norton, B.A., '11.  
 Rehm, Valentine, B.L., '97.  
 Reid, Henry D., Ph.B., '71.  
 Reid, William Albert, Agr.G., '11.  
 Rennebohm, Oscar, Ph.G., '11.  
 Richardson, Helen B., M.L., '02.  
 Robbins, Samuel Brownlee, LL.B., '00.  
 Roberts, Chapin, B.S.(M.E.), '11.  
 Roberts, Elizabeth, B.S., '94.  
 Roberts, John A., LL.B., '11.  
 Robinson, Bertha L., Ph.B., '02.  
 Rodgers, Thomas G., M.A., '11.  
 Roeder, Albert B., LL.B., '84.  
 Rowan, Patrick, B. L., '94.  
 Rupp, John, Ph.G., '92.  
 St. Peters, Reginald L., LL.B., '98.  
 Schmidt, Alfred C., B.A., '11.  
 Schmidt, Gertrude C., B.L., '90.  
 Schmidt, Herbert E., B.S.(Min.E.), '11.  
 Seyton, Harry Joseph, B.S.(C.E.), '05.  
 Shafer, George, LL.B., '80.  
 Shaw, Harold Ironside, Ph.G., '04.  
 Shedd, Charlotte Emma, B.L., '02.  
 Shephard, Alfred Clayton, Ph.G.  
 Skenvik, Olaf Martin, LL.B., '90.  
 Slaughter, Philip C., Ph.B., '59.  
 Smith, Mrs. Gertrude A., M.G., '05.  
 Smith, Harry A., B.C.E., '91.  
 Smith, Ira Booth, LL.B., '72.  
 Smith, John Lyman, C.E., '07.  
 Smith, William H., B.S.(C.E.), '06.  
 Spence, Gertrude, B.A., '97.  
 Spence, Mary, B.A., '96.  
 Steele, Elizabeth S., M.A., '08.  
 Stephens, Maud L., M.G., '05.  
 Stone, Jesse Raymond, B.L., '99.  
 Swift, John Joseph, Ph.B., '74.  
 Tarbox, George E. LL.B., '88.  
 Teubern, Ernest, M.A., '08.  
 Thence, Henry Charles, Ph.G., '05.  
 Thomas, Carolyn C., Ph.G., '00.  
 Thompson, Carl N., LL.B., '03.  
 Tillinghast, Charles W., LL.B., '82.  
 Tomkins, Charles F., Ph.G., '92.  
 Traverse, Frank Stanley, B.S., '84.  
 Troan, Edward I., LL.B., '90.  
 Truman, Elbert Loope, B.S., '91.  
 Turner, Edmon F., B.L., '03.  
 Van Wagenen, Mills, Ph.B., '74.  
 Watchman, Edmund L. C., B.S.(M.E.), '06.  
 Wagner, Adolph, LL.D., '04.  
 Waite, Henry C., LL.B., '95.  
 Wallin, Allgot, B.S.A., '05.  
 Walther, Paul William, LL.B., '94.  
 Warren, Charles Robinson, B.L., '81.  
 Webber, Jessie M., M.G., '07.  
 Wellington, Archibald, M.A., '10.  
 Werner, Henry James, Ph.G., '03.  
 Wesley, Merritt K., B.S., '08.  
 Wilbur, Rinaldo F., LL.B., '78.  
 Wile, Raymond Samuel, B.A., '06.  
 Williams, Samuel, LL.B., '93.  
 Windsor, William, Jr., LL.B., '78.  
 Winegar, George Lee, LL.B., '03.  
 Wright, Charles Edwin, Ph.G., '88.  
 Zeiher, Emeline Elizabeth, B.A., '05.  
 Zenter, Francis Henry, B.S.A., '09.

## 1912 ADDRESSES WANTED

- Anderson, Ross W.  
Arnold, Schuyler.  
Axford, Richard H. Norman.  
Ballard, Roger Kingsley.  
Batz, Margaret Carmen.  
Bettinger, Beulah Elizabeth.  
Blackburn, Ralph.  
Blood, Laura Lillian.  
Blust, Harry John.  
Boott, Ella Haden.  
Boyer, Mary Elma.  
Buhlig, Alma Emma.  
Burke, Nelee Ellen.  
Carson, Harriet Mildred.  
Case, Gaylord James.  
Cavanaugh, Leo David.  
Crawford, Williard Goldsworthy.  
Cunningham, Roger George.  
Davis, Floernee Hume.  
Deming, Marian Hazel.  
Dunn, Robert Hiram.  
Edwards, Henry Patrick.  
Farnham, Willard Edward.  
Ford, Stella Eudora.  
Foster, Fayette Laverne.  
George, Emily Cornelia.  
George, Leo Byron.  
Gratiot, Mary Anne.  
Gratz, Mabel Maud.  
Halbert, Blanche Lodema.  
Hanan, Florence Louise.  
Harris, Katherine Genevieve.  
Hutson, Thomas Ralph.  
Jackman, Margaret Jane.  
Jenner, George Herbert Austin.  
Johnson, Agnes Beatrice.  
Johnson, Aline Victoria.  
Johnoson, Katharine Diantha.  
Jones, Margery Vining.  
Jones, Montfort.  
Josten, Harriette Margaret.  
Kirch, Henriatta Ann.  
Kirch, Iza Barbara.  
Kleinpell, Louise Carolyn.  
Klug, Clara Maira Elizabeth.  
Kneeland, Martin Dwelle.  
Knudson, Jeanette Louise.  
Kragh, Stella Marguerite.  
Leach, Olive Marion.  
Lenroot, Katherine Frederica.  
Ling, Pyan  
Loeffler, Oscar Frederick.  
Loew, Jessie Daisy Ida.  
Longfield, Sara Regina.  
Lutz, Gertrude Harriett.  
McCordic, Almer Sheridan.  
McDonald, John James.  
McGee, Brutus Albert.  
McKinney, Marion Emma.  
Mangan, Julia Maria.  
Marks, Marie Anna.  
Mauer, Florence Elizabeth.