

The GEAR
of
THETA TAU



Fall, 1927

VOLUME XVII

NUMBER 1



The GEAR *of*
THE TA TAU



FALL, 1927

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AN EMPLOYMENT BUREAU ESTABLISHED

At the Service of Theta Tau

THE Sixth Biennial Convention resolved that the Fraternity should be of assistance to its members in obtaining employment and to put prospective employers into touch with qualified men.

To serve these needs one of the national officers was designated as manager of the service bureau to be established.

Members of the Fraternity are engaged in many lines of engineering, or in business in which engineering has an important function. Many of them hold responsible positions, and are often in need of men for their staffs, or hear of good opportunities with other reliable concerns.

To serve our members in this way is part of that practical idealism which our founders proclaimed as a policy of Theta Tau.

Members of the Fraternity seeking positions of any kind should send in complete information about themselves, furnish an address where they can always be reached by mail or wire, give a detailed account of what experience they have had, and indicate the line of work they are most interested in.

The service of the bureau is open to all members in good standing in the Fraternity. To avoid possible delay applicants are advised to get a statement from their chapter to this effect.

Alumni are urged to notify the bureau of any openings for employment of which they get knowledge. Alumni who periodically employ certain classes of engineers are urged to furnish the bureau with information about it so that any graduates interested can apply on time. The Fraternity wishes to help the younger alumni but it also wishes to put possible employers in touch with qualified engineering graduates of personal worthiness.

Address All Communications to

PROF. H. L. BALDWIN

Care of University of Utah

SALT LAKE CITY, UTAH

The GEAR of THETA TAU
OFFICIAL PUBLICATION OF THE FRATERNITY

DONALD D. CURTIS, OMICRON '19

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Theta Tau Fraternity

Founded at the University of Minnesota
October 15, 1904

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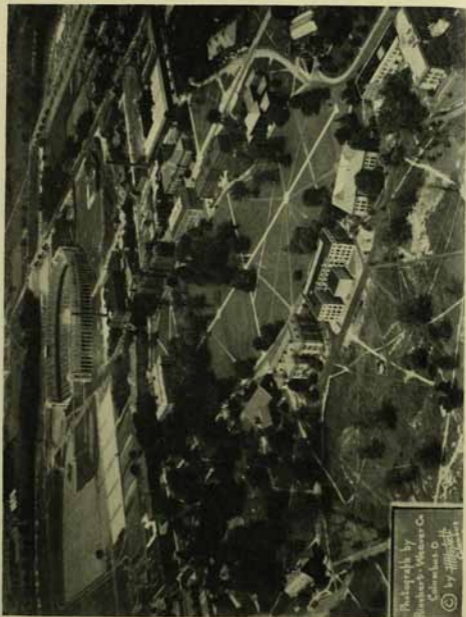
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CHAPTERS

- ALPHA, *Founded October 15, 1904* - - - University of Minnesota
(Chapter house) 629 Washington Ave. S. E., Minneapolis, Minn.
- BETA, *Established March 26, 1906* Michigan College of Mining and Tech.
(Chapter house) Theta Tau Fraternity, Houghton, Mich.
- GAMMA, *Established November 8, 1907* - - Colorado School of Mines
P. O. Box 12, Golden, Colo.
- DELTA, *Established May 23, 1911* - - Case School of Applied Science
Case School of Applied Science, Cleveland, Ohio
- EPSILON, *Established May 4, 1911* - - - University of California
Box, Hearst Mining Bldg., University of California, Berkeley, Calif.
- ZETA, *Established April 17, 1912* - - - University of Kansas
(Chapter house) 1409 Tennessee Street, Lawrence, Kansas
- ETA, *Established May 23, 1912* Massachusetts Institute of Technology
Care of Prof. James Jack, M. I. T., Cambridge, Mass.
- THETA, *Established May 26, 1914* - - - Columbia University
Care of Prof. T. H. Harrington, Columbia University, New York City
- IOTA, *Established February 5, 1916* - - - Missouri School of Mines
P. O. Box 629, Rolla, Missouri
- KAPPA, *Established March 25, 1916* - - - University of Illinois
P. O. Box 516, Station A, Champaign, Illinois
- LAMBDA, *Established April 29, 1920* - - - University of Utah
University of Utah, Salt Lake City, Utah
- MU, *Established January 3, 1922* - - - University of Alabama
P. O. Box 724, University, Alabama
- NU, *Established January 1, 1922* - - Carnegie Institute of Technology
P. O. Box 114, Carnegie Institute of Technology, Pittsburgh, Pa.
- XI, *Established January 13, 1923* - - - University of Wisconsin
Room 208, Engineering Building, Madison, Wisconsin
- OMICRON, *Established February 3, 1923* - - - University of Iowa
(Chapter house) 715 Iowa Avenue, Iowa City, Iowa
- PI, *Established May 26, 1923* - - - University of Virginia
P. O. Box 449, University, Virginia
- RHO, *Established February 10, 1924* N. C. State College of Ag. and Eng.
P. O. Box 252-A, State College Station, Raleigh, N. C.
- SIGMA, *Established November 29, 1924* - - - Ohio State University
(Chapter house) 70 East 18th Avenue, Columbus, Ohio
- TAU, *Established December 12, 1925* - - - Syracuse University
P. O. Box 11, University Station, Syracuse, New York



Photograph by
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AEROPLANE VIEW OF THE OHIO STATE UNIVERSITY CAMPUS

This photograph includes a large portion of the campus but there are about 18 buildings not shown here. The University owns here approximately 1150 acres.

OHIO STATE UNIVERSITY AND SIGMA CHAPTER

By ELY G. FEXTON, Sigma '28

Fifty-seven years ago, a struggling college, new born, literally set down in the midst of a corn field, an institution with slender resources, a small student body, no alumni, relatively few friends and not a few enemies, was founded at Columbus, Ohio, by a few stout-hearted advocates with a vision.

Today the fifth university in the country in point of full time enrollment, it is the foster mother of nearly 20,000 alumni, besides having more than as many more former students, a campus of 1100 acres and 76 buildings, a student body of 12,000 and a faculty of 650, and a plant valued at more than \$15,000,000.

The transition just sketched is that of the Ohio State University, which in recent years has come to be more and more the educational center of Ohio. It is as if some wonderful magician had exercised his potency, only that fact is stranger than fiction. The magic is just one part of the increasing appetite of the people of this country for higher education.

The Ohio State University was founded in 1870 as a land grant college. At first it was known as the Ohio Agricultural and Mechanical College. Its name disclosed its character and its purpose. It was not until the fall of 1873 that the first handful of students made their way from the old high road across the field to the college building and the institution began to live.

The campus consisted originally of some 300 acres. Today it has more than trebled and is still growing. Most of what was the original campus is still used for that purpose, although all but two of the original buildings have vanished before progress and expansion. A large portion of the additional land acquired by the University comprises the University farm which is operated in conjunction with the College of Agriculture.

Service to the state and the community at large has always been the vision and the motivating influence behind the development of the University. Dr. W. O. Thompson, D. D., L. L. D., who was President of the University from 1899 to 1926, speaking of the attendance not long ago declared, "There is nothing in the horizon to suggest a limit."

"The Ohio State University," he asserted, "is just entering upon an era of wide usefulness. Its service has keener appreciation than ever before. Its growth in student attendance is as inevitable as the progress of the tide. The important issue is that we face this fact recognizing the value of our children and developing our educational resources in proportion to the needs as expressed through the people."

Dr. Thompson, is at the present time, President Emeritus of this university. Dr. George W. Rightmire, an alumnus and for 25 years a member of its faculty, is the sixth President of the University. He was chosen acting President in November, 1925, when Dr. Thompson voluntarily retired on his seventieth birthday, and was made President in March, 1926.

As the Ohio Agricultural and Mechanical College, this institution had only three buildings and a faculty of seven. By 1878, when the name had

been changed to the Ohio State University, the student body had grown to 309, and the faculty to more than a dozen members. The same year the income of the University was given as \$40,375.00. For the year ending June 30, 1926, the income had grown to a little over \$6,308,000, the number of buildings to 76 and the graduating class to 1500.

The University campus is considered one of the most beautiful in the United States. Originally it was far from being picturesque, as it was situated in the midst of a corn field. Today it comprises 1100 acres of which the University owns 810 with an option on most of the rest. The University's land and buildings are valued at \$10,256,000. The value of the equipment is estimated at \$2,237,000 and endowments at \$1,092,000.



LIBRARY BUILDING, OHIO STATE

Campus development is centered chiefly about the oval. From the Fifteenth Avenue or main entrance, about three and a half miles due north of the state capitol, the campus stretches away to the west revealing a beautiful vista. At the extreme western end of the oval, which is bisected by the "Long Walk," stands the stately library in the midst of a grove of trees. Immediately to the South, the terrain falls away rapidly to "Mirror Lake," the last vestige of a stream which once flowed through the University grounds. Beyond the lake, where the ground rises again, is the McMillen astronomical observatory, the President's new residence, and to the south of that, Oxley and Mack Halls, the first of a group of dormitories for women. Across the road from Oxley Hall is Pomeroy Hall, where women's activities are centered, and where are housed the women's department of Physical Education and the

women's gymnasium. The other lines of university development have been northward along Neil Avenue.

In the last decade seven buildings have been erected along this thoroughfare, the medical and dental group being the latest. At the extreme north end of this avenue, within the University limits, are located the agricultural and veterinary medical buildings. Just west of Neil Avenue and down over the hill toward the Olentangy River, Ohio State's athletic plant is located. At present it includes the Stadium, which is one of the largest and best equipped in the country, and both varsity and intramural baseball diamonds, tennis courts and practice fields.

Where less than half a century ago the instruction was confined to five departments, today the university offers courses in almost every conceivable field. Courses leading to degrees are offered in the following colleges: Agriculture, Arts, Philosophy and Science, Commerce and Administration, Journalism, Dentistry, Education, Engineering, Law, Medicine, Pharmacy and Veterinary Medicine; each under the administration of a dean and a college faculty. In addition, the Graduate School, created in 1911, offers work leading to the higher degrees.

Of the colleges, those of Commerce and Administration, Journalism, Dentistry, Education, and Medicine have been added in the last decade. The colleges of Dentistry and Medicine were acquired in 1914 when the University absorbed the Starling Ohio Medical College, an institution which was the outgrowth of five earlier medical schools, the first dating from 1834. The present college of Medicine, one of the Class "A" schools of the country, requires two years of college work as a prerequisite to medicine.

This institution has the distinction of being one of the oldest engineering schools in the country. When it opened its doors in the fall of 1873, for the teaching of those subjects required in that early engineering education, there were provided one professor for mathematics and one for civil engineering.

The first engineering graduate was in 1878. Since that time the stream has steadily continued increasing in magnitude from one to about 300 during the last year.

The College of Engineering was organized as a separate college in 1895 with an enrollment at that time of nearly one-third of the total in the University. It continued to grow in comparative magnitude until in 1903 it embraced 42.6 per cent of the university enrollment.

The requirements were gradually raised between 1903 and 1908 until the required credits numbered fifteen and were substantially the same in content, as those set for admission to the colleges of Arts, Philosophy and Science. In 1910 the policy was adopted of awarding the bachelor degree for four years of academic work, the master's degree for one additional year's work, while the professional engineer's degree previously given was now made equivalent to that of doctor, and was reserved for those having several years experience or having executed some creditable engineering work.

Short courses in Mining, Clay-working, and Industrial Arts were offered for the aid of men engaged in those occupations who had not had sufficient preparatory education to enter the four year engineering courses. These courses have been dropped, largely because better preparation on the part of the student enables him to enter the four year courses.

For several years the fundamental or basic engineering courses at this institution were those of Civil, Mechanical and Mining. There has been such an expansion in the field of engineering and these expansions have called for so much specialization that at the present time there are offered eleven different engineering courses; Ceramic, Chemical, Civil, Electrical, Industrial, Mechanical, Metallurgical, Mining and Architectural Engineering, Architecture and Engineering Physics.



LORD HALL—ENGINEERING BUILDING

This college up to the present time has had a total of more than 3,500 graduates, which means that between 8,000 and 9,000 students have received instruction in its several departments.

The Engineering college and its various departments at the present time occupy seven different buildings. The total ground area of these buildings is approximately $5\frac{1}{2}$ acres while the total floor area is about 11 acres.

The latest addition to this group of buildings is the first unit of the Engineering Experiment Station, where the work of the station, as carried on in the several engineering departments, is coordinated and where certain Federal and State laboratories of an engineering character are provided with quarters.

The purpose of this station is to make technical investigations and to supply engineering data which will tend to increase the economy, efficiency and safety of manufacturing, mineral, transportation and other engineering and industrial enterprises of the State, and to promote the conservation and utilization of its resources.

In the location of new buildings for our engineering college, a very definite plan is now followed, which is a vision of what this engineering plant should be in 50 years or less time. That vision in a word, is a location of the engineering buildings so that a large rectangular open court 750 feet long and 300 feet wide will be formed. At the north end of this engineering court or quadrangle will stand a completed engineering experiment station building about five times the size of the present one. Such a building will be the center of all engineering activities and therefore should contain the main engineering auditorium and a general engineering library as well as suitable space for research work. This experiment station as now operated is in co-operation with the State Highway Department, the Federal Bureau of Good Roads, the Cooperative Topographic Water Survey of the State, and several gas, coal, and railway organizations or interests.

This little statement relating to our engineering college would be very incomplete if we did not at least mention the names of the four men who did

much in laying the foundation for the college and who gave to it the engineering standing which it now has. These men are as follows: Professors C. N. Brown, N. W. Lord, S. W. Robinson, and Edward Orton, Jr., now General Orton. It was due to General Orton's far-sightedness and aggressiveness that in 1894, during the time he was Dean of the college, legislative action was secured and there was established the first Ceramic engineering department to be connected with an educational institution in this country.

These four men, together with the other faculty members of this college have not been content simply to instruct and guide the student in his university work, but in order to qualify better for such duties, have always been desirous of rendering service in the many engineering fields and have done so in so far as to not interfere with their instructional work. Due to this, and to their extreme devotion to their profession, many of them have attained national reputation in their respective fields of investigation, and their services professionally and scientifically have not been confined to Ohio, where most creditable work has been done, but have extended from the Atlantic to the Pacific, from Northern Canada to Southern Mexico and from the Sandwich Islands to Russia.

The field of engineering and scientific literature is richer by many contributions from this faculty, and other institutions have been brought under its influence by the text books written by its members and used in such institutions.

Turning to extra-curricular activities of the student body, Ohio State's meteoric rise in the athletic world in the last decade has attracted nationwide attention. Prior to the University's admission to the Western Conference in 1912, the Ohio State team had attracted little attention outside the state. Even within Ohio, they had often encountered rough sledding. With its entry into the big competition however, the Buckeye institution was launched on a new era.

Athletic successes of the last ten years culminated in the building of the gigantic Ohio Stadium, used for the first time in 1922, which is one of the architectural show places of the United States. Conceived in the mind of Thomas E. French, head of the department of engineering drawing and President of the university athletic board, the stadium was made possible by a nation-wide campaign conducted in 1920 in which more than \$1,000,000 was raised by voluntary subscription from generous alumni, citizens and students. Practically completed the total cost of the stadium is \$1,800,000. It has a normal seating capacity of 63,064 and a temporary capacity of 72,000.

The stadium is a double deck structure of horse-shoe shape built of concrete and steel and covers a ground area of ten acres. It is 574 feet long, 597 feet wide and 109 feet high. Twelve ramps feed 112 aisles and seven hundred ushers are required to handle a capacity crowd.

Under the wise and far-seeing direction of athletic director L. W. St. John, athletics were put on a permanently sound basis. In addition to winning wide recognition in various fields of varsity athletic competition, the department of physical education was built up and expanded. Intramural athletics or competition for the masses has been developed to a point at Ohio State probably beyond that of any other college in the country.

Football achievements have been the most outstanding performances in

varsity athletics. With Dr. J. W. Wilce, prior to 1910, an all around star at the University of Wisconsin, at the helm, the Ohio team during the short period they have belonged to the Big Ten, have won three gridiron championships and have come close to that distinction on other occasions, the last time being in the 1926 season when we suffered our only defeat at the hand of Michigan, 17-16. Conference titles have also been won in basketball, baseball, tennis, wrestling, fencing, cross-country, and other sports.

The biggest crowd in the history of intercollegiate football attended the Ohio State-Michigan game in the Ohio Stadium last fall. The huge bowl designed to accommodate 63,064 spectators, held an official attendance of 90,411. The 1925 game with Illinois attracted another gigantic throng of 85,000 spectators.

Other features of campus activities are the compulsory military training under the supervision of a staff of regular army officers. More than 3500 cadets are enrolled in the student regiments, comprising both artillery and in-

SIGMA CHAPTER



Back Row (left to right): Falter, Swain, Marshall, Kaser, Crouch, Blansberry, Looby, Goss, Fenton.
Middle Row: Kala, Bertswell, Trout, Davis, Melter, LeYake, Drumhault, Blev.
Front Row: Kall, Anstultz, Snyder, Moore, Knorr, White, U'bery, Mark, Smith.

fantry. Student dramatics are above the average while the campus nurtures many publications chief of which are the *Lantern*, the student daily, the *Makin*, the year book, the *Sun Dial*, a humorous monthly, and the *Ohio State Engineer*, which is published by the students of the College of Engineering.

In the fall of 1912, a group of engineering students applied for University recognition as an organization to be known as "The Engineer's Club of the Ohio State University." The University committee on Student Affairs upon investigation of the status of the members, endorsed this club and the founders were assured the hearty cooperation of the University and the Engineering College.

The founders of this society felt that inasmuch as there were but two professional engineering societies on the campus, there was ample room for another such organization. They felt the need of a professional engineering club wherein through the bonds formed by social contact, they could broaden their technical training, widen their outlook and advance in their chosen profession.

During the year of 1921, the club held weekly meetings at the Ohio Union. At these meetings the constitution was drawn up and the future policies of the club were outlined. The membership was at first limited to Mining, Metallurgical, and Civil Engineers, but was afterward changed to include any member of the Engineering college meeting the requirements of the organization.

Having gotten off to a good start the preceding year, we had very little trouble in getting the men that we desired in 1922. Meetings were still held in the Ohio Union, but on account of our increase in size, we had to use the banquet hall. During this year we studied the problem of establishing a permanent home for the Club.

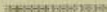
In 1923, with twenty-four active members and nine pledges on the roll, we moved in to our first home at 181 Twelfth Avenue. This same year we started to correspond with the Executive Council of Theta Tau. During the latter part of the year we petitioned for a local chapter and on Saturday, November 29, 1924, were installed as Sigma of Theta Tau.

Since Sigma Chapter is only about three years old, most of our time has been spent in getting well organized and established on a sound financial basis. This fall we are changing our location. Our new home is closer to the campus, much larger and can be better adapted to the needs of our chapter than the one that we previously occupied. At present the scholastic standing of the chapter is very good. Several of our men last year were members or pledges of Tau Beta Pi, Pi Mu Epsilon, Sigma Xi and Scabbard and Blade, (military honorary) including two who were members of all three engineering honoraries. Last year we were quite prominent in activities having men affiliated with practically every engineering college organization including the presidents of five organizations.

This year there are going to be many national conventions held in Columbus and at the University in which our men will be taking an active part including Tau Beta Pi, Scabbard and Blade, Association of Engineering College Magazines, and The American Society of Civil Engineers.

We expect to start the year with about 28 actives and 9 pledges. With these as a nucleus, we are looking forward to a very successful year in furthering Theta Tau both locally and nationally.

In this short article it has been impossible to touch upon all aspects of campus life and activities, the history of the University and the Engineering College, or to discuss in detail our local chapter as a part of the University. What we hope is, that in this article we may have mentioned at least a few things that will help the alumni and men from other chapters to know Ohio State University, its Engineering College and Sigma Chapter a little better than they did before.



Tau Sigma Delta, honorary fraternity for architecture and allied arts, this year conducted an art contest open to all Ohio State students. Books valued at \$25 were offered as prizes. The purpose of this contest was to encourage artistic expression in the fields of painting, drawing, etching, lithographing, sculpturing and photography. The fraternity plans to hold this as an annual event.

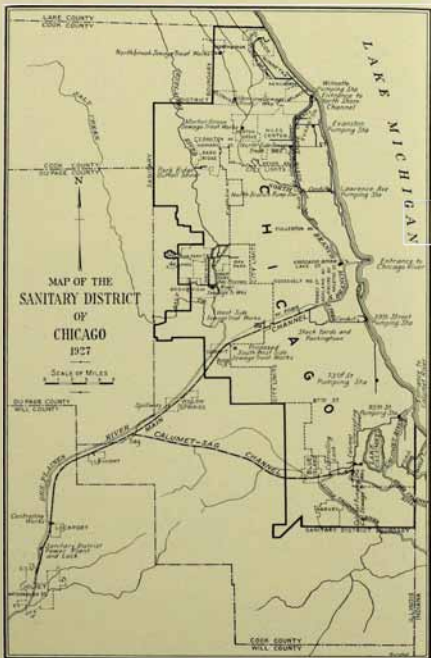


FIG. 1

SEWAGE TREATMENT PROGRAM AND STREAM POLLUTION INVESTIGATIONS OF THE SANITARY DISTRICT OF CHICAGO

By T. L. HERRICK, O '23 (M. S. '24)

The Sanitary District of Chicago includes the city of Chicago and some fifty-seven surrounding incorporated towns and villages. The area within its boundaries is approximately 437 square miles. It was organized for the purpose of keeping sewage pollution from the principal water supply, Lake Michigan, and for finding suitable means of disposing of sewage. Later there arose the problem of cleaning up the Chicago, Des Plaines and Illinois Rivers. This involves sewage treatment on a very large scale. The opening of the Chicago Drainage Canal in 1900 provided an outlet for sewage into the Des Plaines-Illinois River System. This was the first part of the great dilution project, the diluting water being taken from Lake Michigan. This channel, however, could not serve the entire district. Later two smaller channels and large intercepting sewers were constructed which made it possible to divert sewage from the rest of the district away from the lake. The two smaller channels are the North Shore Channel and the Calumet-Sag Channel. Figure (1) shows the location of the various channels comprising the dilution system.

The Chicago Drainage Canal extends from the Chicago River at Robey Street to a point about two miles below Lockport where it discharges into the Des Plaines River. It diverts water from Lake Michigan by reversing the flow in the Chicago River and its south branch. The capacity of this channel is approximately 10,000 c. f. s. and its depth is about twenty-four feet. At the point of discharge there is a fall of about thirty-four feet to the level of the Des Plaines. This head is utilized in a hydro-electric power plant. The generating equipment consists of seven 6,000 horse power horizontal turbines driving direct connected generators. The power generated here is transmitted to Chicago where it is used for operating pumping stations and for street and park lighting.

The North Shore Channel diverts water from the lake at Wilmette and discharges into the north branch of the Chicago River. The capacity of this channel is about 1,000 c. f. s. It was put in operation in 1910. The Calumet-Sag Channel connects the Little Calumet River at a point near Blue Island with the Main Channel at Sag. It reverses the flow in the Calumet River and diverts some water from the lake through that stream. This channel was completed in 1922 and its capacity is about 2,000 c. f. s.

Not long after the Main Channel was completed it was realized that before many years its capacity would be too small to dilute satisfactorily the increasing loads being thrown upon it. Additional loads from large industrial plants increased to unforeseen proportions. In 1909 a series of intensive studies were started on the various methods of sewage treatment. Special attention was given to wastes from the stock yards, packing houses, tanneries and corn products refineries. Later the district was divided into areas, or projects, for purposes of sewage treatment, since the entire area is much too large to be served by a single plant. The projects are: The Des

Plaines River Project, The Calumet Project, The North Side Project, The West Side Project, and The South West Side Project. Another project includes the large waste producing industrial plants.

The Des Plaines River Project includes a number of towns west of Chicago along the Des Plaines River. The drainage area is about twelve square miles and the tributary population is at present approximately 64,000. The plant which serves this territory was put in operation in August, 1922. It is an activated sludge plant and as this was the first installation of this kind to be built by the Sanitary District it was designed to serve to a large extent as an experimental plant. The plant includes in addition to the activated sludge units; grit chambers, a Reinsch-Wurl screen, and a filter press for dewatering excess activated sludge.

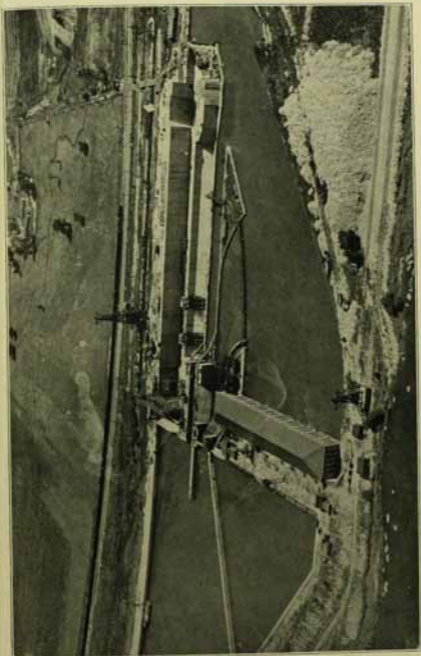
The plant for the Calumet Project was put in operation in September, 1922. It serves all territory in Chicago south of 87th Street, an area of about fifty-three square miles. The treatment provided at this plant is settling in Imhoff tanks. There is in addition, however, an experimental trickling filter unit and two experimental activated sludge units. The plant was designed for a population of 225,000 and an average sewage flow of fifty-six million gallons per day. At some future date trickling filters will probably be added to take care of the entire sewage flow.

The North Side Project includes the territory in the city of Chicago north of Fullerton Avenue and the towns along the north shore from Evanston to Glencoe. Construction of a sewage treatment plant to serve this project was started in 1923. It will be put in operation in 1928. This plant, an activated sludge installation, will be the largest plant of its kind in the world when completed. It was designed for a population of 800,000 with an average sewage flow of 175 million gallons per day and a maximum flow of 262 million gallons per day. These conditions are expected by 1930 and parts of the plant which can not be readily extended are designed for 1960 conditions. The plant includes coarse bar screens, grit chambers, and preliminary settling basins. The sludge will be pumped seventeen miles through a fourteen inch line to the West Side Plant. Here it will be digested with settled sludge in Imhoff tanks.

The West Side Project includes the "Loop" district and the territory between Fullerton Avenue on the north and the Chicago River and the Main Channel on the south. The total tributary area is about 100 square miles. Construction has been started on the first installation of this plant which consists of a pumping station, skimming tanks, grit chambers, coarse screens, and Imhoff tanks. The entire plant will include three batteries of Imhoff tanks. It is designed for a sewage flow of 400 million gallons per day and a population of 1,850,000 which is estimated will be tributary by 1940.

The South West Side Project includes the territory between the canal and the Chicago River on the north and 87th Street on the south, except for the "Loop" district which is included in the West Side Project. It is estimated that the population within this district will be 1,040,000 by 1930. A treatment plant to serve this territory has not yet been designed. It will probably be an Imhoff tank installation when built.

The Industrial Wastes Project includes the large waste producing industrial plants. Some of the larger of these are the tanneries, the stock yards



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FIG. 2. SANITARY DISTRICT POWER HOUSE AND ILLINOIS STATE LOCK.
Aeroplane View, Power House and Controlling Works in Foreground; Lock in Background.

and meat packing plants, and the corn products refineries. In 1925 the population equivalent of the wastes from the corn products refining plants was estimated at 385,000; from the stock yards and packing houses it was estimated at 1,050,000; and from the tanneries it was estimated at 85,000. The population equivalent of miscellaneous industrial wastes was estimated at 80,000. The chemists of the Sanitary District working in cooperation with the chemists of the large corn products refining plant at Argo have succeeded in reducing the population equivalent of the wastes from this plant to a remarkable degree. It has been reduced to about 50,000 at the present time. Provisions will be made for further treatment of these wastes. The wastes from the stock yards and packing houses and from the tanneries will probably be treated at the nearest treatment plant after preliminary screening at the source. However, it is possible that a separate plant may be built to treat the stock yards and packing house wastes.

There are also in operation three small sewage treatment plants serving the towns of Morton Grove, Glenview, and Northbrook. Treatment by Inhoff tanks and trickling filters is provided at these plants.

The Des Plaines-Illinois river systems are a very important part of the dilution system. These streams made it possible to utilize dilution and to avoid discharging sewage into the lake. After receiving the inflow from the Chicago Drainage Canal the Des Plaines River flows eighteen miles south west to its junction with the Kankakee River, the source of the Illinois. From this point the Illinois flows 273 miles south west to Grafton where it empties into the Mississippi. Since the opening of the Main Channel in 1900 these streams have received and carried away tremendous loads of sewage. As a result they are in very bad condition, particularly the Des Plaines and the upper reaches of the Illinois. Additional pollution is discharged at various points along the stream, the more important of these being Joliet, Marseilles, La Salle, Peru, Peoria, and Pekin. Peoria and Pekin discharge very large volumes of wastes. The combined loads from these two cities, including industrial population equivalent, is in excess of 1,000,000.

In 1925 a comprehensive study of these streams was started by the Sanitary District. This study is being made to determine the sanitary condition of the streams and to observe the process of natural purification. It is also desirable to observe the changes in the condition of the streams as the various treatment plants are put in operation. The construction of the Illinois waterway will provide another set of conditions. This waterway will change the physical characteristics of the streams for sixty miles below Lockport and will affect the process of purification. It will include five large locks and four dams, creating a series of pools. Incidentally, the Chicago Drainage Canal is an important link in this waterway. A view of the new lock at Lockport may be seen in Fig. 2.

An understanding of the process of natural purification of streams is of utmost importance in planning the ultimate disposal of wastes. A knowledge of the capacity of the stream for receiving and carrying pollution without creating nuisance is essential. The allowable degree of pollution depends upon the uses to which the stream is to be put. If the stream is to be used for water supply, bathing, fishing, and recreational purposes it follows that it must be kept in a very clean condition. On the other hand certain streams

may be utilized for waste disposal and may be allowed to reach a greater degree of pollution.

In general it may be said that there are four kinds of pollution. These four classes are; physical, chemical, bacterial, and organic. Physical pollution, of which sawmill waste is an example, affects chiefly the physical appearance of the stream. Chemical pollution may produce toxic conditions in the stream and may destroy fish life. Bacterial pollution has for its chief source domestic sewage. This form is of utmost importance if the stream is used for recreational purposes below the point of discharge of the wastes. However, a stream does not provide favorable living conditions for disease germs and they are rapidly reduced in numbers after they reach the stream. The reduction is also aided by sedimentation. Organic pollution originates in domestic sewage and industrial wastes. It is the most important of the four kinds of pollution as it may create nuisance in the stream.

The capacity of a stream is measured by its ability to take care of the organic matter in the wastes unloaded upon it. The process of reducing the organic matter to inoffensive material is carried on by bacteria present in water and sewage. For this process oxygen is required and the supply is furnished by the atmospheric oxygen dissolved in the water. The quantity of oxygen fresh water can hold in solution depends on the temperature. The saturation values vary from 7.63 p. p. m. at thirty degrees Centigrade to 14.62 p. p. m. at zero degrees Centigrade. The initial store of dissolved oxygen depends also on the oxygen demand exerted by organic matter present in the stream before the point of discharge of the wastes in question is reached. Once the supply is depleted nuisance results. Under this condition the water is black in appearance and foul odors are given off. Fish can not live and they either migrate to more favorable living conditions or are suffocated. After the dissolved oxygen drops below about two p. p. m. conditions are not favorable for fish life.

There are three sources of oxygen which tend to maintain a supply of dissolved oxygen in the water. They are oxygen present in diluting water brought in by tributaries, oxygen from oxygen producing plants and organisms which grow under favorable conditions, and oxygen absorbed from the air. Of the three the last is the most important.

The rate at which oxygen is absorbed from the air depends on:

1. The per cent saturation of dissolved oxygen.
2. The temperature.
3. The physical characteristics of the stream.

At a given temperature oxygen is absorbed at a maximum rate when the dissolved oxygen is zero. Absorption goes on at a minimum rate when the dissolved oxygen is near saturation. Advantage cannot be taken of the maximum rate, however, for a condition of very low dissolved oxygen is one of maximum nuisance. Temperature affects absorption in two ways. Absorption at the surface is retarded by a rise in temperature and accelerated by a fall in temperature. Opposed to this is the acceleration of the rate of diffusion to lower layers of water by a rise in temperature. This latter effect governs the rate, absorption being higher with higher temperatures. Turbulent streams absorb oxygen more rapidly than slowly moving streams, due



GOVERNMENT CHICAGO AERIAL SERVICE CO.

FIG. 1. NORTH SIDE SEWAGE TREATMENT WORKS, SANITARY DISTRICT OF CHICAGO
Aeration Tanks in Foreground; Pump and Blower House on Right; Main Building, Preliminary Settling Tanks and Grit Chambers in Middle Ground.

in part to the greater surface area created by wave action. A more important factor, however, is the mixing effect which aids diffusion.

The rate at which organic matter is oxidized depends on the temperature, the rate being greater for higher temperatures. A slowly moving stream will purify itself in a shorter distance than a rapidly moving stream, assuming a supply of dissolved oxygen. Falls and rapids do not affect the process except as they may aid in the absorption of oxygen.

The process of natural purification is also affected by sedimentation of solids to the bottom of the stream. However, the deposition of solids forms sludge banks which will exert an oxygen demand on the over-laying water. During floods these may be scoured out and carried farther down stream.

The stream pollution investigations being carried on by the Sanitary District involve sampling the Des Plaines-Illinois river system at fifteen points between Lockport and Grafton. In general three samplers are assigned to each station. They work in eight hour shifts and collect samples every hour. These hourly samples are treated at the field station with reagents for the dissolved oxygen determination. At four hour intervals special samples are collected for the bio-chemical oxygen demand determination. This determination is a measure of the organic matter present in the water. The special samples are not treated but are kept on ice until they are taken to the laboratory. There are six laboratories; located at Joliet, Marseilles, Chillicothe, Peoria, Pekin, and Beardstown. Each laboratory takes care of samples from two or three stations.

In the laboratories the dissolved oxygen samples, which had been previously treated at the field stations, are titrated. The special samples are diluted with suitable quantities of distilled water and incubated at a constant temperature, twenty degrees Centigrade. In routine work these dilutions are incubated for five days. One day each week dilutions are made up for incubating one, three, five, seven, ten, twelve, fourteen, sixteen, seventeen, twenty, and forty days. At ten day intervals composite samples are sent to the main laboratory in Chicago for more complete sanitary analysis. These are made up from hourly samples.

Samples are also collected on the more important tributaries. These are the Des Plaines River (above the point of discharge of the Chicago Drainage Canal), the Kankakee River, the Fox River, and the Sangamon River.

This work being carried on by the Sanitary District, is an elaboration on a similar investigation made by the United States Public Health Service in 1921 and 1922. The Public Health Service, however, made extensive bacteriological studies which are not being repeated.

In the main laboratory in Chicago, extensive bacteriological work is done by the Sanitary District on lake water samples collected between Waukegan, Illinois, and Gary, Indiana. These include raw and tap water collected from piers, pumping stations, and taps.

Another part of the stream pollution investigations is included in the hydro-metric studies. This work includes the getting together of gage height records, computations of discharge of the streams at sampling points, discharge of tributaries and computations of time of flow between sampling stations. The results of this work are necessary in the interpretation of the chemical results.

The results of these investigations should add a great deal to what is known of the process of self purification of streams.

MEMORIES OF THE ORIGIN OF BETA CHAPTER

By CHARLES A. KUMKE, Beta '06

[EDITOR'S NOTE: The following excerpt from Heather Kumke's letter explains: "Dear Brother Curtis: Your letter, asking for a write-up of Beta's early history, is before me. It seemed an easy matter at first, but when I began an outline, I found I was a little hazy on some points. Erich Schrader is correct. I was the first Beta Regent and should, therefore, be able to give the information you are looking for. Can go back even further than that and tell you something about the very first gathering of the original nine men who formed the Rhombobedron Club that was later chartered in Theta Tau."]]

Once upon a time, or rather, way back in 1903, there were three M. C. M. students, who were neither Freshmen nor Sophomores. They had not entered college with the regular 1902 Fall Freshmen, but had drifted into Houghton the previous spring. This, together with the fact that they happened to room in the same house on the same floor, was probably the reason why they were at first drawn to one another. They soon became friends and were much to-



FIRST GROUP PICTURE OF BETA CHAPTER, 1906

Top Row: Pickard, Fearick, Perkins, Mosche, Sweeney, Varney, Marshall, Berry.
Middle Row: Steinbach, Kingdon, Anderson, Downing, Hasselbring, Thoms, Kumke, Staples, MacKillop.
Bottom Row: Ezling, Turbet, Andrews, Warrig.

gether outside of classes. They all sang some, knew all the latest popular songs, loved music and a good time, and got along like three drops of oil—absolutely no friction. Their names were Gabe C. Bishop, Albert Hasselbring, and Chas. A. Kumke.

Early in the fall of 1903, these three decided to throw a party. Being short of funds, however, they decided to scout around and find about five or six more good fellows who were itching for a party and willing to pay their share.

To the best of the writer's recollection, the following nine men were at this party: G. C. Bishop (deceased), A. Hasselbring, C. A. Kumke, T. J. Douglas, J. W. Young, A. F. Benson, G. A. Morrison, J. Perrault, R. Robinson.

The last two named were Houghton town boys who were not enrolled at the college, but whose marvelous tenor voices had secured them a place on the College Glee Club.

Needless to say, the party was a marvelous success, and sometime during the celebration, it was decided to perpetuate the memory of this wonderful party by having others just like it, and that a club be formed for this purpose.

In searching for a name for this Club, Gabe Bishop suggested, Rhombobedron. He designated the three who got up the party as the three "Planes of Symmetry" peculiar to the Rhombobedral System, and the other six present to

represent the six crystal faces. It was decided to gradually augment the membership of the Club until it constituted twenty-one members. The twelve new members represented the twelve edges of a Rhombobedron and when later in the fall of 1906, the first group of H & T men gathered for a group picture, fate had decreed that twenty-one were to be present.

When, after the first party, the "Three Planes of Symmetry" got their heads together and assayed the original mine, they decided that as throwers of parties, they assayed 100% or better, but as scholars, the button would have to be weighed with the rider. It was at once agreed that the new men to be asked to join should be such that as men and scholars, they would give the Club balance and a more serious tone. The almost immediate entrance of such men as Potter, Hopkins, Meuche, Barr, Anderson, and Downing, shows how well this scheme succeeded, and when the Rhombobedron Club was finally chartered in H & T, about one-third of the group were Tau Beta Pi men and only such men were pledged as were well up in all their classes.



FIRST GROUP PICTURE OF RHOMBOBEDRON CLUB, 1903

Top Row: Morrison, Anderson, Parkhurst, Bishop, Cowart, Meuche, Barr.

Middle Row: Perrault, Potter, Kunkle, Hopkins, Benson, Hasselbring, Burke, McCormick,

Young.

Bottom Row: Downing, Barthol.

The original party was held in a vacant office room of a down town building, but arrangements were soon made to rent the small club rooms above the old DeRoche Drug Store. In the fall of 1904, the Club took over a house in East Houghton and the Beta Chapter in H & T was installed in the Pryor House, also in East Houghton. Brothers Downing and Andrews had made a trip to Minneapolis where Alpha Chapter had initiated them and given them the work and necessary authority to install Beta Chapter.

Of the original three, Gabe Bishop left Houghton for New York late in 1903 and not long afterward was killed in a traffic accident. Hasselbring and Kunkle left Houghton in April, 1904 and returned in October, 1905, and graduated with the class of '06.

This write up is only concerned with the early history of the Rhombobedron Club, and therefore, this is a fitting closing point, but before doing so, I wish to pay tribute to two brothers, Ocha Potter and H. H. Hopkins. Beta Chapter has had many enthusiastic brothers who, in their time, have done all of their share and much more in guiding and helping Beta over the rough spots, but almost from the inception of the Rhombobedron Club, up to the present minute, over a period of twenty-four years, these two have helped Beta and worked for Beta untiringly.

HOTEL MARK HOPKINS, SAN FRANCISCO

Magnificent Achievement of George D. Smith, Epsilon '11

From the mining engineering field into politics,
and from politics into the hotel business!

Despite these changes, George D. Smith, Epsilon '11, President and Managing Director of the magnificent new Mark Hopkins Hotel in San Francisco, is still an engineer.

Contradictory? Yes, but true. Let's investigate.

Smith built and owns the Mark Hopkins which opened last December and is now the most popular hotel in the West. It is nineteen stories high and cost \$5,000,000 to construct and equip. A magnificent site on Nob Hill gives the hotel the most commanding view of San Francisco, the top of the hotel being the highest point in the City.

Before the Mark Hopkins, Mr. Smith built and opened the Canterbury Hotel in San Francisco in 1923. He made this one of the best paying hotels in San Francisco, then feeling the urge to build, looked around for a likely site and started the Mark Hopkins.

Now that his newest achievement is operating smoothly, he has plans underway for another big development to be announced soon.

He graduated from the Mining College of the University of California in 1911 and was a charter member of the Epsilon chapter of Theta Tau. After graduation he accepted a position as mine surveyor in Virginia City, Nevada. There he became acquainted with the late Emmet D. Boyle, a prominent mining engineer having a private practice



GEORGE D. SMITH, EPSILON '11
President and Managing Director
Hotel Mark Hopkins, San Francisco,
California

in Virginia City at that time and later elected Governor of Nevada for two terms. Smith then entered Boyle's firm and did a great deal of mine patent work as a deputy U. S. Mineral Surveyor. After Emmet Boyle was elected Governor, the firm became inactive and Smith became the Governor's private secretary. After a few years it became evident that the newly formed Industrial Insurance Commission needed engineering guidance as most of the workmen insured under this act were underground workers. Smith was chosen as chairman and a great deal of the work in perfecting this act was done by him.

But a few years of the political game were sufficient and about 1916, he returned to San Francisco to build a fortune, which he literally did, erecting many fine structures around the city. His pleasing personality and executive ability have contributed greatly to his success in his new work.

Since its opening, the Mark Hopkins has become the center for the social life of the metropolis of San Francisco. Its many beautiful public dining rooms and ball rooms are nightly the setting for smart events. There are a total of five hundred guest rooms, each smartly furnished and affording an unobstructed view of the city and the bay.



HOTEL MARK HOPKINS
Nob Hill, San Francisco, Calif.



CORNER OF PEACOCK COURT
Hotel Mark Hopkins, San Francisco

The simplicity of the architecture—a combination of baronial French and Spanish renaissance—taken with the location on the crest of the hill, makes the building truly monumental. The sum of \$5,000,000 is buried partly within in elegance, comfort, and luxury. An atmosphere of romance submerges completely the perfect utilitarian equipment of the hostelry.

* * *

A gift of five hundred thousand dollars has been offered Case School of Applied Science for a new mechanical engineering building, contingent upon the raising of five hundred thousand dollars additional among the alumni before early summer.

It was estimated that twenty thousand graduates of M. I. T. dining in sixty-seven cities in January, listened to the after dinner speeches made in New York, Cambridge, Washington, and Rochester, broadcast by seven radio stations.



In Memoriam

The Executive Council Wishes To Express Its
Deep Sorrow At The Passing Of The Follow-
ing Brothers, About Whom Details Are
Not Available At This Time

CLARENCE E. COPELAND, Gamma '13
EDWARD DAVID SEERIE, Pi '28





HARRY AID, IOTA '20

October 21, 1897—January 4, 1927

Harry Aid, Iota '20, was born in Gallatin, Missouri, on October 21, 1897. He attended the Missouri School of Mines at Rolla, Missouri, for nearly two years. During that period, he affiliated with Kappa Sigma, a social fraternity, and Theta Tau. During his second year in college, he left school to enlist in the air service during the latter part of the World War. Upon his discharge from service, he entered Leland Stanford University and graduated in 1922. He was married in California to Marian E. Baxter, on September 4, 1926. For two years he did exploratory geological work for the Gulf Production Company, in Mexico. Following that he worked continuously for the same company up to the time of his death. At that time, he was district geologist and manager of the Amarillo office. He died after an illness of some two weeks from typhoid fever with complications. His death was attributed to fever contracted in the tropics. He was buried at his home in Gallatin, Missouri. He was a Mason, a member of the Grace Methodist Church of Berkeley, California, and a member of the American Association of Mining and Metallurgical Engineers. He is survived by his father and mother, Mr. and Mrs. George Aid of Gallatin, Missouri, a brother, Kenneth Aid, Eastland, Texas, and his wife, Marian E. Aid, 3024 E. 2nd Street, Duluth, Minnesota.



FREDERICK WILLIAM BAYNE, DELTA '22

August 16, 1899—April 27, 1927

Frederick W. Bayne was born in Lakewood, Ohio, on August 16, 1899, and attended the secondary schools of that city. He entered Case School of Applied Science in the fall of 1918. Here he had a brilliant career and in his junior year became one of the most popular and well-liked men on the campus. He was a member of Phi Pi Phi, social fraternity, and of Tau Beta Pi and Sigma Xi, honorary fraternities. Some of his college activities consisted of singing in the Glee Club, class secretary, Case senate representative, Boost Case Association member, and Differential Board member. He was awarded, for these activities, a Case Honor Key. The two years following his graduation he spent at Yale on a teaching scholarship, receiving degrees M. S. and M. E. He then returned to Case as instructor in mechanical engineering. During the two years that he taught in Case, he was extremely active in fraternity affairs and was one of the most popular of the faculty members. After two years' service, he left Case to enter the employ of the Standard Oil Company in the laboratory of their Development Department. Becoming ill, he submitted to an operation which proved fatal, his death coming on April 27, 1927. He was very active in Masonic circles and was buried from the Lakewood Masonic Temple. He is survived by his parents, Mr. and Mrs. William Bayne, Lakewood, Ohio.



THOMAS HENRY BECK, IOTA '24

July 15, 1893—July 24, 1926

Thomas Henry Beck was born July 15, 1893, in Des Moines, Iowa. He attended the public schools, entering West High at the age of fourteen. After graduating in 1912, he worked at various positions for five years. During that period he took a state examination and earned the certificate of Mine Foreman. In 1917, he enlisted in the army and went overseas with Company C, 7th Engineers. He was wounded during the battle of the Argonne. Upon his return home, he became convinced that he wanted to take Engineering and considered enrolling at Ames. Since both his father and grandfather, before him, were men who loved the underground, he decided to take up mining engineering and enrolled at Rolla, Missouri. He finished in 1924, receiving the degree Bachelor of Science in Mining Engineering. He located at Pittsburg, Kansas, as assistant mine engineer for the Great Western Coal Company. It was a tragic circumstance that he should meet his death while on a visit home. It resulted from electric shock received from high tension wires in the Beck Coal Mine near Des Moines. He was to have been married soon to Miss Helen Cochrane of Des Moines. Brother Beck's father died just a few months later. He is survived by his mother, Mrs. Jacob G. Beck, 1514 Arlington Ave., Des Moines, Iowa, two sisters, Mrs. C. W. Day and Mrs. Jack Henopp, and two brothers, Walter A. and Edwin Beck, all of Des Moines.



IRA WESLEY MILLER, SIGMA '27

June 1, 1901—April 13, 1927

Ira Wesley Miller, the son of Mr. and Mrs. N. C. Miller, was born June 1, 1901, on a farm southeast of Delphos, Ohio. It was here that he lived the years of his youth. As he grew up he attended the community schools, and graduated from the Elida High School in the spring of 1921.

Standing on the very doorstep of manhood he decided to prepare himself for that profession which held his deepest interest and greatest expectation. The College of Electrical Engineering at Ohio State University was then his workshop for study and research for the benefit of mankind. After three years of diligent application, he set aside two years in order to reinforce himself with practical engineering experience before entering his senior year. One year was spent with Gibbs and Hill, Consulting Engineers, of New York City, on the electrification of the Virginian Railway. The year preceding his return to Ohio State, Brother Miller was catenary inspector on the Chicago Terminal Electrification for the Illinois Central Railroad.

Brother Miller was initiated into Theta Tau in January, 1927, being Number 74 on Sigma's roll. He would have received his B. E. E. degree in June.

While performing an experiment with several members of his class, Brother Miller was killed in the Electrical Engineering Laboratory at Ohio State University. The fatal accident occurred at noon on April 13, 1927; he died a half hour later.

He is survived by his parents, Mr. and Mrs. N. C. Miller, one brother, Noah, two sisters, Gladys and Luella, all of Delphos, and many other near relatives.

LETTERS FROM THE CHAPTERS

ALPHA

Alpha started out the present school year with a bang, moving into their new home at 629 Washington Ave. S. E. This new location is very suitable as is shown by the fact that from twenty to twenty-five eat their lunch regularly at the house. The house will accommodate twenty men very nicely, and at present, fourteen men are living there. By the winter quarter this number will have been increased to at least eighteen. In the future we plan to hold our regular parties at the house, there being an abundance of space.

The first initiation of the school year was held November 6, 1927, at which the following men were initiated: Donald A. Alderson, Ray V. Englund, Ransford W. Fenton, Robert W. Friis, and Clarence A. Kutz. New initiates since the last issue of the GEAR are: John T. Bailey, Gordon C. Harris, Winfred L. Hindermann, and Harold A. Lockhart. The next initiation will probably be held early in the winter quarter.

Alpha's representation in Tau Beta Pi was greatly reduced last year from graduation and our pledging in the future will be influenced by this factor. At present, however, we have some promising men among our lower classmen who are out for this honor. The scholastic standing for the year was 1.40.

Participation in activities is part of a college education. With this thought in mind Pledgeman High and Brother Kutz stepped out in front, and took the offices of president of the freshman class, and vice-president of the sophomore class, over in the school of mines. In the college of engineering we have Brother Thwing as the engineering representative of the Board of Governors. The Cadet Corps claims as its officers Richard Lindsay and Gordon Harris, holding down the positions of Cadet Colonel and Lieutenant Colonel.

Alpha is represented in varsity football this year, and has been entered in practically every branch of intra-mural athletics, having so far met with remarkable success.

The Founders Day Banquet was held at the Minneapolis Athletic Club and was indeed an impressive affair. We were all happily surprised to find Brother I. B. Hanks back with us, and he contributed his share in starting out Alpha on her twenty-fourth year at Minnesota. Prof. Zelner acted as toastmaster. One social event has taken place on our calendar this fall, a dance given at the Columbia Golf Club. We expect to have at least one more this term.

Brothers Gile, Davies, and Morris are back again in school this year, and we also have with us Brother Leo Jolly from Beta Chapter. Tom Andrews is still with the lions and tigers in Northern Rhodesia, in South Africa, as geologist. Winn C. Hilgedick has finally settled down after a trip around the world, and has taken a position with Western Union down in Texas. Lloyd V. Berkner has taken a position with the lighthouse service and is stationed in Washington, D. C.

As may be seen, Alpha has already started on what promises to be one of its most successful years, and has no plans for slowing up in the future.

JOHN A. MCCREA

BETA

Michigan Tech has been in session for five full weeks to date, and we of Beta are wondering how so many things could happen in so short a time.

First of all, Beta is running her own house this year. This entails a great deal of work and responsibility to all members, but the spirit of the chapter is such that success is assured. The first month, the heaviest in expense of the year, has shown a comfortable balance in the "black," and we of Beta are looking forward to the biggest year of our history.

A month of rushing has just come to a close, concluding with the Pledge Banquet at the house Saturday evening, October 29th. The banquet was enjoyed by all present. Brother Roy Drier, Beta '25, proved again his incomparability as a toastmaster. Professor Fisher, Beta Honorary, gave the principal speech of the evening; a history of the Chapter, containing many interesting and amusing incidents from the lives of our predecessors. Several speeches were given by active members, the several phases of fraternity life being discussed. Brother Hoen gave the speech of welcome; Brother Graves outlined the advantages of a national fraternity; Brother Longacre gave an account of his associations with Theta Tau men in Chicago during the past summer, and Brother Eliot presented a talk on the Southwestern Alumni Association.

Eight men have been pledged to date, and there are several other prospective pledges. A rather conservative policy is being carried out; we wish quality, not quantity, and Beta has good reason to be proud of the men picked this year. The eight pledges are: C. J. Bastian, Calumet, Mich.; C. L. Bush, Ann Arbor, Mich.; P. Cooper, Granville, Ohio; S. Gaynor, Lawrenceville, Illinois; F. C. Lord, Hancock, Mich.; W. H. Smith, Hubbell, Mich.; G. D. Tollen, Iron Mountain, Mich.; J. C. Wright, Owensboro, Ky.

Brother Ray Hoen, chairman of the Rush Committee, assisted by the entire chapter, showed our competitors how rushing should be done, and carried the season to its successful close.

Beta gave the annual Freshman Dance, Friday, October 7th. The Dance Committee, under the able leadership of Brother Ed Eliot, turned out one of the most successful and enjoyable parties the Chapter has ever seen. A Pledge Dance will be given just before Thanksgiving, and we are all looking forward to another very pleasant evening.

Our first professional meeting was given October 19th. The meeting was well attended by students and faculty, and all present enjoyed a talk on the "Engineer's Essential Qualities" by Brother Ocha Potter, Beta '11, now superintendent of the Calumet & Hecla Ahmeek Mine. The speech was followed by informal discussion, and then refreshments were served. Beta gives these meetings once each month, and we enjoy them very much.

Beta men are very active on the campus. In social, political and athletic activities, H and T men are proving their worth. We are trying for a leadership in intramural sports this year. A successful basketball season is being anticipated by the chapter.

The following Beta officers are working hard for Beta's banner year: Regent, Wm. A. Longacre; Vice-Regent, J. Kennedy, Jr.; Scribe, Ray Hoen; Treasurer, H. Hawn; Corresponding Secretary, B. Werkowski; Steward, R. Graves.

Beta is well represented in the school newspaper—*The Lode*. Brothers Hoen and Kennedy are Business and Advertising Managers respectively. Brother Redman is assistant manager in the news department.

Beta also has Brothers Hoen and Gertz on the school dance committee. Brother Graves is on the smoker committee. The Chapter is well represented in the Student Council and Senior Advisory Committee.

Beta has high hopes of a number of brothers as wearers of the key this year, and we feel assured of the most successful year Beta has known.

In varsity sports, we point with pride to the three "regulars" on the football team: Brothers Seestedt, Kennedy and Redman. Hockey will again be the predominating sport and it is expected that the team will rank among the very best in the country.

Beta always considers it a pleasure and an honor to entertain visiting brothers, and our visitors this year include "Dinty" Moore, Geo. W. Mork, both of Alpha, and R. Moon and M. Vawn of Beta. We extend a cordial invitation to all H & T men who may wander into the Copper Country.

In conclusion, we ask the Alumni to send in cards telling of their whereabouts. We are very much interested in alumni news of any description.

Fraternal greetings to all Theta Tau men, and many good wishes for a very successful convention this Christmas.

WM. A. LONGACRE

Houghton, Michigan, November 1, 1927

GAMMA

Gamma Chapter was very active on the Colorado Mines campus last year. In this letter we will endeavor to enlighten you on our activities.

Phillip Doerr, Regent, was President of the Student Council. Robert Much ended his four years of football as captain of the squad. The football team was mostly a Theta Tau affair; Robert Bond, Eugene Gallagher, Douglas Shaw, T. L. Regan, Walter Lofgren, Joe McNeil, T. L. Wells, Ed. Gallagher and Ted Carter did their stuff in great fashion. Lofgren is football captain this year and T. L. Wells is basketball captain-elect. Mike Sotock had the basketball captain's job last year. Bond and T. L. Wells were members of the team. Theta Tau was represented on the varsity baseball team by Charles Jenkins, Eugene Gallagher (Captain), Curtiss Kinney, T. L. Wells and Ted Carter.

Blue Key honored the following men: C. Weintz, P. Doerr, R. Mcglone, Donald Gahagan, W. King, R. Herndon, Ed. Locke, Carl Tuttle, C. Jenkins, E. Gallagher. At graduation last year A. L. Ladner who was King Tau Beta Pi was awarded the Wolff Gold Medal for exceptionally high scholastic standing. Alden Donnelly is president of Tau Beta Pi.

We are very proud of George Allen, who came to Mines from Dartmouth last year. At Dartmouth he played on the Big Green Eleven. He coached our frosh team last year and did such a good job of it that he was made head varsity coach this year.

PHILLIP DOERR

Golden, Colo., Nov. 1, 1927

DELTA

School has started—the gang has all returned, “rarin’ to go”—it surely looks like a banner Theta Tau year at Case School of Applied Science. All the old zip of bygone days has reappeared and the whole chapter is driving forward with its best foot to the front and its eye on the ball.

The loss of fifteen actives at commencement last June left a mighty big hole in our ranks but on looking over the present junior class we find a great deal of very promising material. Pledging will start in about two weeks.

In school activities the chapter makes a very impressive showing at the start of the new year. Kemble and Ellsworth are varsity ends on the Big Brown football team and are showing a lot of class in every game; Tichy is a varsity track man and is doing nicely in cross-country work; Rayl is business manager of the Glee Club; Kemble is chairman of the Boost Case Committee of the Senate; Griffin is chairman of the Case Club Board of Managers; Fruehauf is carrying 14 honor points in various campus activities, while Fisher is leader of the Glee Club and president of the Senior Class. Two of the present chapter made honor keys last year and we are looking forward to several more before the final whistle blows next June. In the honor societies we have Fisher in Tau Beta Pi and Kemble, Griffin, Fruehauf, Tichy and Fisher in Owl and Key, the honorary senior society.

With a start like this, a most promising looking group of new men to pick from, and a world of ambition, Delta is out to make this the best of the sixteen years that it has been on the campus.

Left the active chapter: G. E. Bing, E. B. Bossart, J. M. Byrns, J. P. Ditchman, D. T. Doll, H. Fruehauf, J. N. Glidden, C. H. Junge, R. J. Kappasadze, M. E. Nall, J. W. Owings, L. J. Reardon, J. W. Thompson, W. S. Wilcox and H. T. Williams, all of the Class of '27.

Returned to the active chapter: A. C. Ellsworth, L. C. Fisher, M. C. Fruehauf, Boyd Griffin, E. D. Kemble, L. B. Rayl, R. F. Simokat, A. G. Thailing and Otto Tichy, all of the Class of '28.

L. C. FISHER

Cleveland, Ohio, Oct. 30, 1927

DELTA CHAPTER



First Row (left to right): Bossart, Bing, Nall, Fruehauf, Ditchman, Kappasadze, Meebel.
Second Row: Owings, Rayl, Glidden, Doll, Chapman, Thompson, Junge, Thailing.
Third Row: M. C. Fruehauf, Griffin, Kemble, Tichy, Fisher, Reardon.

ZETA

Since the last issue of the *Gear*, summer vacation has interrupted the train of thought so that perhaps most news concerns the present year.

New initiates since last issue are Warren Stover, Clyde Campbell, Fred Jaquis, and Millard Troup. We have here a small, but select, group. Several of our candidates for initiation this fall found it impossible to return to school here. I might add that four of our men are now at the University of Oklahoma.

In school activities we have made a decided advancement this year.

George Cash, already honored by Tau Beta Pi and Schem, has been elected President of the newly formed Engineering School Council. Cash is also a letter man in track, president of Tau Beta Pi, and editor of the *Kansas Engineer*. Perry May is vice-president of the Engineering School Council with Manley Hood as secretary-treasurer. We also have two representatives on the council, thereby holding five of the thirteen positions.

Recent announcement of pledges to Tau Beta Pi includes two of our seniors, Donald Black and Stuart Hazard. Lloyd Mueller and Perry May are the respective presidents of Scabbard and Blade and Mortar and Ball, both military fraternities.

In the local student branch of the A. S. C. E. we have the majority of the offices; Loring Hanson, president; Ed Farmer, vice-president; and Stuart Hazard, secretary. We also have Don Black as secretary of the Electrical Society.

George Cash has just returned from the Tau Beta Pi convention at Columbus. He reported a nice representation of Theta Taus at the convention and is highly appreciative of the fine time shown him by Sigma Chapter.

We held our first professional meeting last month. Lieutenant George Nold of the Military Department gave a very interesting talk on the River Control work in the Mississippi Delta. Lieutenant Nold has been engaged in river work since the close of the war.

It is with pride that we announce the appointment of Brother George Shaad (honorary) to the office of Dean of the School of Engineering. Dean Shaad's appointment fills the vacancy created by the untimely death of Dean Perley F. Walker.

Before closing we must mention the recent call of Brothers McGee and Lambert on the President of Peru. McGee and Lambert are geologists for Phillips Petroleum Company and are at present in South America. Photographs indicate that they cut quite a figure in high top hats, swallow tail coats, white gloves, and other paraphernalia necessary for the great honor of conversing with the local potentate.

DONALD M. BLACK

Lawrence, Kansas, Nov. 16, 1927

THETA

Theta Chapter is having a very successful year. Though our roster is rather small at present, there being only thirteen active brothers, we are looking forward to a few worthy additions to the chapter. We have been holding weekly luncheons on Wednesdays in John Jay Hall, the new Uni-

THETA CHAPTER



Back Row (left to right): Deveraux, Boddine, Johnson, Trickett, Bloomer, Hyde, Smith, Grant, Hinkle.
Front Row: Linderoth, Foster, Prof. Harrington, Theobald, Darnell, Bales.

versity building dedicated to college activities, and they have been well attended. A business meeting is held on the last Wednesday of each month, at noon, also at John Jay Hall.

Brother John Theobald is at the helm of the chapter. Brother Henry G. Davis was married a short time ago, but is back in the fold.

Brother Martin Linderoth is president of the Senior Class and is treasurer of almost every organization in the Engineering School.

Brother Rowen is president of the Engineering Society. Brother Foster is president of the Columbia Chapter of Tau Beta Pi. Brother Horace Grant has just been elected Secretary of the newly organized student chapter of the A. S. M. E. Brother James Darnell is at present trailing Brother Theobald around the track in an effort, we believe, to reduce. He is also instructing in Geology.

We extend a cordial invitation to any brother to join us in our Wednesday luncheons.

ROBERT W. ROWEN

New York, Oct. 31, 1927

IOTA

Twenty-one active members returned this fall, one of whom is T. C. Gerber, ex-17. We are mighty glad to have such a large number of old men back.

On the campus we are ably represented in various activities, having our share of honors. R. W. Couch is president of the Mining and Metallurgical Association; L. J. Burg is president of the Student Chapter of the American Society of Civil Engineers; W. S. Temples is president of Tau Beta Pi, as well as president of the senior class; E. C. Faulkner has been pledged to Tau Beta Pi.

The following men have been pledged this fall: N. S. Williams, A. Mueller, R. S. Dittmer, E. A. Crawford, H. R. Osterwald, Wm Brewer, A. L. McRae, E. A. Godat.

Plans have been made for a series of lectures to be given on open meeting nights, as has been the custom. A great benefit is derived from these interesting lectures not only by ourselves, but also by our fellow students.

R. P. BAUMGARTNER

Rolla, Missouri, Nov. 8, 1927

LAMBDA

Lambda found itself with only ten members who returned this fall to start a new school year, but we started right out and pledged a number of good men who will be initiated in the immediate future.

We are again having bi-weekly luncheon meetings at Shay's cafeteria. This type of meeting proved very successful last year, and we expect even more success this year. At our first meeting Brothers Jones, Seyfarth and Greene visited us and reported that they were doing well. Brothers Seyfarth and Greene have been doing the deck construction on our new athletic stadium, while George has been working for Hawley, Richardson and Williams, local mechanical engineers. At our second meeting we were complimented by a visit from Doctor Lyon of Nu chapter who came to the University from Washington to take charge of the local office of the U. S. Bureau of Mines. Alan Probert of Epsilon, a teaching fellow, also visited us.

The chapter has had one initiation since the April issue of the GEAR. It was held in the supper room at Shay's. The men initiated were: A. E. Christensen, J. Earl Wood, Elmer R. Chytrous, Sylvester W. Muir, R. V. Jones, and Ralph Coombs. Brother Christensen was an alumni member of the U. Techs., and is a prominent engineer, being senior member of Christensen, Jacob, and Gardner, general contractors; the other five members were active at school work.

Our social life has been seasoned with two big banquets at the Newhouse Hotel which were complete successes. The first was the annual Birthday Day and Installation banquet given on April fifteenth. About fifty partook of the menu, including a number of brothers from Gamma, who were at that time inspecting the mines in this district. Brother Baldwin was the toastmaster and everyone present had the privilege of talking. The second was the Founder's Day banquet, held on October fifteenth with about thirty-five

members present. Again, with Brother Blake as toastmaster, a good time was had by all.

At graduation last spring Brothers Lyon, Seyfarth, Funk, and Fredriksen were initiated into Phi Kappa Phi. Brother Lyon was also awarded the senior athletic medal. To win the award Rudy played tackle on our championship football team, center in basketball, high jumped, and heaved the shot and discus in track.

JAMES MATHER

Salt Lake City, Utah, Oct. 29, 1927

OMICRON

Omicron Chapter now has twenty-three men living in the house, which is located at the same place as last year, 715 Iowa Avenue, and about twenty-five men take meals here regularly.

As to activities this year, of course the first item of importance is the new pledges that we now have. We have nine new pledges this fall, seven freshmen and two sophomores. We also initiated five sophomore men, Sunday, October 30th. They were: Frank Ashton, Cecil Fawcett, Victor Richter, Robert Hemphill, and Robert Macy.

Andrew H. Holt, Associate Professor of Civil Engineering, was initiated as Omicron's third honorary member in May. Omicron feels honored at "Andy's" acceptance of membership. Brother Holt received his B. S. from Vermont in 1912, his M. S. from Iowa in 1920, and his C. E. from Vermont in 1922. He is a member of Alpha Tau Omega, social fraternity; Phi Beta Kappa; the American Society of Civil Engineers, and various other professional societies; the Masons and other fraternal and social organizations. He is the author of "Manual of Field Astronomy."

As to meetings, we have, of course, the regular weekly meetings and we have had one professional meeting this year. It consisted mainly of a talk by Prof. B. P. Fleming, of the Department of Mechanical Engineering, on the construction details of the new University heating plant that has just been put into use. It was certainly an enjoyable meeting as well as an educational one.

In the field of University activities, we are very well represented this year. Brother Lewis is vice-president of the Associated Students of Applied Science, chairman of the Transit Board, president of Tau Beta Pi, and a member of A. F. L. (an honorary group of twelve men who are chosen as the most outstanding men on the campus). Frank Edwards is also a member of A. F. L. Brothers Jerome Reid and Frank Edwards were elected to Tau Beta Pi this fall. We have the presidents of three of the four student society branches, and a number of officers in the various classes.

There have been four weddings among the actives and alumni since last spring. These men who now have recently joined the ranks of husbands are: Fred Smith, '26; Ralph Van, '25; Edwin Nelson, '26; and Thomas Carson, '30. There have also been three engagements announced.

We held a Dad's Day Banquet, Sunday, October 9th, at the chapter house in honor of the visiting dads, and on October 16th, we held a Founders' Day Banquet. Both of these were very well attended by pledges, actives, alumni and faculty members.

LLOYD HESKETT

Iowa City, Iowa, Nov. 1, 1927

PI

Pi Chapter continued her activities this session of '27-'28 with seventeen members returned from last year, each with a desire to further the interests of our chapter and make it a benefit to the engineers of our school. As it is early in the year we have not had sufficient time for any notable activities so I must mention a few of the happenings of last year.

The Dean of our department, who is an honorary member of Pi Chapter, and several other faculty members suggested that it would be a great help if the preparatory schools and well rated high schools of this section were visited by members of the student body and given a student's view of the engineering work going on here. Pi chapter undertook the job and here is what we did.

The schools who were receiving copies of *The University of Virginia Journal of Engineering* were notified that a series of essays written by various members of the engineering faculty were to be published in the Journal and were expected to be of special interest to those contemplating taking up engineering as a profession. These essays were arranged for by a special committee

PI CHAPTER



Fourth Row: Grigg.
 Third Row: Hartman, Meyers, Holt, Lee, Via, Quarles, Wise, Brown.
 Second Row: Sarmiento, Carter, Joachim, Sevier, Hunt, Richards, Small.
 Back Row: Lee, B. Seiden, Newcomb, Prof. Robinson, E. Seiden, Matheson.

and were very good. After this we collected a good deal of important data concerning the Engineering School and had it printed in pamphlet form. Later in the spring, just before examinations, small groups of two or three men were sent out to the principal schools within a radius of one hundred and fifty miles. These men visited prep and high schools with the permission of their principals and talked to all the boys interested in engineering. We gave short talks, distributed the pamphlets, and discussed engineering as a profession, and also from the point of what we could offer at Virginia, with all those interested.

We cannot estimate our success in round numbers, but over a 10 per cent increase in enrollment makes us feel that our efforts were probably not all wasted, and we hope to do something similar this session.

At the beginning of last year we were approached by members from our rival on the campus, The Trignons, and asked to enter into some sort of pledging agreement with them. We felt that something of this sort was needed since the pledging was becoming rather hectic. Brothers Wise and Joachim met with their representatives and drew up an agreement that limited the number of men eligible to receive bids.

Only three new members were initiated into our chapter last spring, since a large per cent of the members were expected to return this fall. The initiates were B. J. Kyle, L. R. Quarles, and R. E. Lee.

Three meetings have been held this fall and one smoker for the purpose of looking over new men. The fall initiates are R. C. Voorhies, Gifford Quarles, C. M. Wilkinson, S. J. Godsey, R. E. Gildea, and Bob Browning. These men have not been formally initiated as yet but we expect to do so inside the next two weeks.

We seem to fall somewhat short in our list of college activities when compared with other chapters. We have one brother, Symington, on the football team. He comprises our repertoire of athletic activities. We have the editor in chief of the *Engineering Journal* and about three-fourths of the rest of the staff. The editor is Brother Grigg. We have four members who are Tau Beta Pi's, Bob Selden, Lawrence Quarles, Charles Harmon, and Edward Joachim.

We are planning to have a banquet soon to celebrate the initiation of our "goats" and wish that all of the chapters and our grand officers could join us in a gala event.

With your permission I would like to deviate a little and relate a personal happening, may I? Well, here it is, anyhow. It was my privilege to attend the annual Tau Beta Pi Convention held in Columbus, Ohio, this fall. While in Columbus I stayed at the house of Sigma Chapter of Theta Tau. I met all the brothers and they surely did treat me royally. After proving myself I was permitted to sit in on their fall initiation which was held on Saturday night. I'd like to take this opportunity to extend to any of them the invitation to drop in and see Pi Chapter if they are ever in this neighborhood. If any of you other brothers ever get to Columbus take my advice and drop around to see Sigma chapter, you certainly will enjoy it. Out of the fifty delegates that attended the convention there were six Theta Tau brothers. I surely did enjoy knowing them all. How about it, you six brothers? Didn't we have a good time.

EDWARD F. JOACHIM

University, Virginia, Oct. 29, 1927

RHO

The beginning of the fall term found Rho chapter with sixteen active members ready to make this years work a great success.

Since the last issue of the GEAR Rho has initiated one honorary and eight active members. Professor Harry Tucker, head of the highway engineering department was the honorary member initiated. The following men have become active members: C. E. Hibbard, P. M. Smith, J. T. Mason, M. L. Barishadt, F. C. Davis, K. K. Kontz, J. H. Mayfield, and W. R. Tigue. Tigue has not returned this year but we look for him before the year is over.

On March 17, 1927, Rho entered a float in the Engineers parade which received much favorable comment. A large gear about ten feet in diameter was mounted on a truck. The hammer and tongs were on each side of the wheel and green and white streamers were attached to the truck.

We are very glad that three of our alumni brothers, K. V. Wainright, J. C. Mason, and F. W. Habel were able to locate in Raleigh.

H. T. GHEESLING

Raleigh, N. C., Oct. 28, 1927

SIGMA

If progress is a sign of success, then Sigma of Theta Tau is seeing the most successful year of its history. The present chapter consists of thirty-one actives and six pledges, two of the actives being graduate students. These men are listed in nearly all of the Engineering activities of the campus, as follows:

Tau Beta Pi: Smith, Armington, Ullery, Swain, Schofield, and Robinson.

Scabbard and Blade: Mock, LeVake, Smith, LeVake, Burr, Kale, and Falter.

Pi Mu Epsilon: Kalb and Armington.

Eta Kappa Nu: Decker.

Sigma Xi: Ullery.

Engineers Council: Stansbery, LeVake, Fenton, and Lawrence.

Texnikoi: Mock and Armington

Brother Mock is president of the student chapter of A. S. C. E., and Brother Armington is president of S. S. I. E. Brother LeVake is in the Glee Club, and Brother Falter is on the Rifle Team.

Three names have been added to the chapter roll since the last issue of the GEAR. They are John Clinton Prior (84), George Richard Lawrence (85), and Howard William Allison (86).

Professor John C. Prior was initiated into Sigma Chapter May 9, 1927. He is our first honorary member. Prof. Prior received his B. Sc. degree from Denison University in 1906, and was a post-graduate student in Structural Engineering at Ohio State University in 1913. During the World War he organized the Cost Engineering Department of war housing, acting as Chief Cost Engineer of the U. S. Housing Corporation in 1918 and 1919.

Professor Prior is a member of



JOHN C. PRIOR, Hon. Sigma '04

Braun, Fleming, Knollman, and Prior, Consulting Engineers of Herbert Post Green and Associates, Inc., New York. During his work as consulting engineer he has designed many important bridges, sewage plants, and flood conservancy projects in Ohio. He is a member of A. S. C. E. and Columbus Engineers Club, and the author of "Keeping the Cost of Building Government Homes."

Professor Prior is now a member of the Civil Engineering Department at Ohio State University. He is active in campus affairs, and will undoubtedly be a great asset to Sigma Chapter. We are indeed proud of our first honorary member.

The outfit has made a new set-up since the last GEAR. We have moved into another house, larger and nearer the campus than the old one. There seems to be no difficulty in keeping it filled, and all of the alumni who have visited us have been favorably impressed with the new location. The change is a distinct forward step for Sigma.

The national conventions of Tau Beta Pi and the American Society of Civil Engineers were held in Columbus during the week of October 15. Six of the Tau Beta Pi delegates were H and T men. They represented Tau, Zeta, Pi, Iota, Theta, and Omicron chapters. We took care of most of them at the chapter house, and were surely glad to have them with us. Several of the delegates did not know that Sigma had a chapter house. Hear Ye, then, that there is a place of refuge and refreshment in Columbus for all Theta Tau men.

CHARLES P. SMITH

Columbus, Ohio, Oct. 31, 1927

TAU

Tau chapter at Syracuse is well started on the road to another successful year. Graduation last year took several of our best men but the fine spirit of cooperation shown by the active members this fall is sure to put across another still better.

We departed slightly from our usual custom of pledging men only in the spring and took in four outstanding men from the two upper classes this year. Robert Fitzgerald, E. E. '29; William Gidlow, C. E. '29; Bruce Dickerson, C. E. '28; and Raymond Gemmill, Chem. E. '28, are the men pledged. They are all well up in their classes scholastically and are active in college affairs. Gidlow is on the hockey and lacrosse teams and is active in Y. M. C. A. affairs. He is a member of Pi Kappa Alpha fraternity. Dickerson is on the fencing team and is a member of Sigma Chi fraternity. Gemmill has just been elected to Tau Beta Pi, being the first chemical engineer to attain this honor in several years. He is president of the University Glee Club and a member of Alpha Chi Rho fraternity.

The active members are almost all engaged in activities of some sort. Lewis Bizik is on the football team and has played in practically every game this season. Shappell and Gidlow can be found practicing lacrosse almost every day in preparation for places on the team in the spring, while Cramer and Deming have already started training for crew and are working out on the rowing machines daily.

As for societies, Theta Tau was very successful in the recent elections.

Arthur Wood is now President and Bruce Dickerson is Secretary of the A. S. C. E., George Whitehurst is Treasurer of the A. S. M. E., Stanley Wilson is Secretary of the Interfraternity Athletic Association, Morrell Blesh is the Student Council representative from Engineering, and Harold Merry is President of the A. S. M. E. and Treasurer of Tau Beta Pi.

HAROLD G. MERRY

Syracuse, N. Y., Nov. 10, 1927

EPSILON CHAPTER



Top Row: Livingston, Bell, Lowery, Hill, Eastman, Winterburn, Bakke, Tallafera, Dudley, Ruffalo
Bottom Row: Ross, Durvans, Koch, Vander Hoof, Brown, F. Anderson, C. Anderson.

UNIVERSITY OF ILLINOIS OFFERS PRIZE

For the most valuable contribution toward a new, better or increased utilization of any natural resources of the State of Illinois, Professor C. W. Rolfe, emeritus professor of geology at the University of Illinois, has offered a prize of \$250. The purpose of the prize is to stimulate a more general interest in the natural resources of the state and to encourage serious effort in looking to a new, better or increased utilization of such resources.

The term "natural resources," for the purpose of this competition, is defined as "mineral products of the State of Illinois, such as clay, sand, coal, petroleum and natural gas, fluorspar, limestone, ores of lead and zinc, and soils."

Material offered in the competition may consist of unpublished results of study or investigation, or of papers or books published since January 1, 1926.

REPRINTED FROM THE PROGRAM OF THE INTERMOUNTAIN A. A. BANQUET, OCTOBER 15, 1927, FOR THE 23RD ANNIVERSARY OF FOUNDERS DAY

Shell Company of California,
Long Beach, Calif.
March 29, 1927.

MR. H. G. HALL, Secretary-Treasurer,
Intermountain Alumni Assn., Theta Tau,
Salt Lake City, Utah.

Dear Brother Hall:

I have been intending to write for some time, especially to send in my subscription to the GEAR. I received the circular letter of last January and it was like a letter from home. I haven't seen a brother from Lambda for a long time, but have met several from other schools.

My Theta Tau affiliations have been very consequential to me down here. My first job with the company was with a Theta Tau from Berkeley. There was also a chap from Golden in the office. It may be interesting to note a little experience of mine relative to Theta Tau. I was called from the field office into Los Angeles to see the chief geologist of the company. During a half hour of oral interrogation the chief saw me nervously thumbing my vest pocket and finally asked me what the fraternity pin was. I told him Theta Tau and he smiled nicely to relieve the situation. He said that the pin was a recommendation in itself. A couple days later I was transferred to the Geology Department and immediately sent to a wild cat well the company was drilling near Bakersfield. The chief complimented the work of Dr. Pack. Also afterwards I found that he was a Theta Tau and a former professor at Berkeley with Dr. Louderback. I wasn't imposing upon my Theta Tau connections but was pleased to get the job over six other applicants.

Since "wild catting," I am now transferred again and am a Petroleum Engineer in the Long Beach office. I am really in training on some recent inventions of the company and when the time is ripe, if I follow the established custom, I shall find myself on my way to some foreign assignment. Several of the fellows have gone to Roumania, India, Borneo, and more recently to Venezuela. I'm still single so I won't mind when my turn comes.

I would like a copy of the GEAR as soon as possible, as I know of brother Theta Tau's in this country, but don't know where they are. If I can locate them through the GEAR, it would be rather nice to drop in on them.

With kind personal regards,

Yours in H and T,

THOS. G. MARTIN, '24.

My home address is: 1035 Gardena Ave., Long Beach, Calif.

CHICAGO ALUMNI ASSOCIATION

The Chicago Alumni Association is well under way again. A dinner and meeting is held once each month. At present we have about 70 names on the mailing list. The association is anxious to get in touch with all Theta Tau men residing in or near Chicago.

The officers of the Chicago Alumni Association for this year are: President, R. W. Van, Omicron; Vice-President, A. A. Purvis, Xi; Secretary-Treasurer, T. L. Herrick, Omicron.

Brother B. J. Curtis, Alpha '13, is now with the Sanitary District of Chicago. Mr. Curtis has charge of construction of the North Side Sewage Treatment Plant.

Frank L. Woodward left Chicago last September. He is now with the Minnesota State Board of Health, Minneapolis, Minn.

The Chicago Alumni Association conducted an initiation on May 24, 1927. At this time Frank L. Woodward and Charles Lasher were initiated as members of Omicron Chapter. Brother Lasher was a member of Theta Sigma Delta, the old local at the University of Iowa, and Brother Woodward was a member of Chi Delta Sigma, the local which was absorbed by Omicron Chapter in 1926.

Brother Frank J. Jerome, Eta '14, is train master for the New York Central Railway in Chicago.

Brother Ross I. Parker, Zeta '12, is with the General Electric Company in Chicago.

The Chicago Alumni Association observed Founders Day at a banquet held at the City Club of Chicago on October the 18th. Talks by Brother Hopkins and Brother Van and motion pictures comprised the entertainment. Alpha, Beta, Zeta, Sigma, Xi, and Omicron Chapters were represented.

Brother G. A. Kristy, Alpha '09, is now with the Brilliant Search Light Mfg. Co. in Chicago.

Brother Omer F. Guerin, Beta '23, is with the Ottawa Silica Moulding Co., Ottawa, Ill.

UTAH SCHOOL OF MINES OFFERS FELLOWSHIPS

Several fellowships, each having an annual value of \$720, are being offered by the department of mining and metallurgical research of the University of Utah. This department is maintained in connection with the Intermountain Experiment Station of the U. S. Bureau of Mines. Fellows work under the supervision of experts in this department, activities of which will be considerably expanded during the coming year as a result of recent appropriations of the Utah Legislature.

Problems to be investigated during the coming year are:

Flotation as related to pure minerals and gangue constituents, with special attention to physical-chemical and experimental investigations.

Study of losses in present zinc hydro-metallurgical practice and their prevention where not due to mechanical causes.

Hydrometallurgy of lead, and the purification of lead liquors.

Pyrometallurgy of complex lead-zinc ores.

Differential sulphating of complex ores and concentrates to facilitate subsequent separation of milling and leaching.

Pyrometallurgy of lead and a study of losses in lead blast-furnace slags and their prevention.

Fellowships are open to college graduates who have had good training in chemistry and metallurgy. Applications will be received by Joseph F. Merrill, Hon. Lambda, director of the Utah State School of Mines and Engineering, University of Utah, Salt Lake City, Utah. Copy of school records and at least three references should be sent.

HONORS

The following list of honor society awards to Theta Tau is incomplete as some of the chapters did not give names of recipients and others reported in round numbers. The list of societies given comprises only those which are members of the Conference of Honor Fraternities.

TAU BETA PI

Alpha—Stuart Bailey, Howard Caddy, Fred Teske.

Beta—Clinton E. Westin.

Gamma—Alden Donnelly, D. I. Gabagan, T. Holmes, A. L. Ladner, W. McLaughlin, C. A. Weintz.

Delta—Grayum E. Bing, Edmund B. Bossart, Denton T. Doll, L. C. Fisher, Chas. H. Junge, Roman J. Kappanadze, Walter F. Meckel, Leslie J. Reardon.

Epsilon—A. B. Stevens.

Zeta—Wilbraut Baum, George Cash, Loring Hanson, Dale Kentner, Paul Swanson, (annual report states nine members, but other four names are not given).

Theta—John Balet, Gilbert Boeker, Olney B. Cook, Henry G. Davis, Justin W. Foster, J. Kelly Johnson, Martin T. Linderoth, Henry A. Sherman, Joseph A. Triska.

Iota—R. P. Baumgartner, R. W. Couch, E. C. Faulkner, N. O. Kraft, F. E. Sewell.

Kappa—H. V. Alexander, H. R. Helvenston, E. D. McKeague.

Mu—C. P. Almon, Jr., Robt. Baugh, M. M. Broyles, J. O. Long, Paul M. Speake.

Nu—T. F. Brastow, D. M. Davidson, R. E. Neibel, D. L. Putt.

Omicron—Kenneth C. DeWalt, Frank Edwards, John H. Folwell, Carlton H. Lewis, J. Stewart Meyers, M. J. Ried, E. P. Schuleen, E. T. Schuleen, W. W. Towne, Lawrence A. Ware, Wm. W. Wertzaugher, Wilbur H. Wickham.

Pi—Charles Harman, Edward Joachim, Lawrence Quarles, Robert Shelden (two others, names not available)

Sigma—R. Q. Armington, Edgar R. Robinson, Henry Z. Schofield, Charles Smith, Theodore Swain, Fred E. Ullery.

Tau—Gordon Garnhart, Theodore Hall, Elliot Lynde, Everett Noble, Richards Rickards, Henry Stearns.

SIGMA XI

Delta—Edmund B. Bossart, Chas. H. Junge, Roman J. Kappanadze, Leslie J. Reardon, Howard T. Williams.

Epsilon—J. R. Dorrance, T. W. Koch, E. H. Rott, A. B. Stevens.

Zeta—Robert Boggs (two others, names not available).

Theta—Olney B. Cook, Arthur D. Hyde, J. Kelly Johnson, M. Hugo Olstad, Henry A. Sherman, Joseph A. Triska.

Omicron—John Folwell, Stewart Meyers, E. P. Schuleen, E. T. Schuleen, Fred Smith.

Sigma—(Reports three members, but names are not given.)

PHI BETA KAPPA

Mu—Robt. Baugh, Paul M. Speake.

Omicron—Wm. W. Wertzbaugher.

PHI KAPPA PHI

(This is the sole scholastic honor society at Utah)

Lambda—L. J. Frederickson, Alfred M. Funk, Rudolph E. Lyons, W. E. Seyfarth.

Tau—Henry Stearns.

Four fellowships, in cooperation with the U. S. Bureau of Mines and the State Mining Experiment Station, are offered by the School of Mines and Metallurgy of the University of Missouri. These are open to graduates who have the equivalent of a Bachelor of Science degree, have had proper training in mining, metallurgy, or chemistry, and are qualified to undertake research work. The income of each fellowship is \$800 for the twelve months beginning July 1, 1927. Fellows pay fees amounting to approximately \$30 per year, will register as students in the Missouri School of Mines and Metallurgy, and become candidates for the degree of Master of Science (unless this or an equivalent degree has been earned). Their class work will be directed by the heads of the departments of instruction, but the greater portion of their time will be spent in research work under the direction of the Bureau of Mines staff resident at the School of Mines. The purpose of this work is to undertake the solution of definite problems confronting the mining and metallurgical industries of the State of Missouri. For 1927-28 the four fellowships will be granted in the following subjects: Metallurgy of Zinc, Beneficiation and Treatment of Metallic and Non-Metallic Ores. Applications, with a certified copy of collegiate record, statement of professional experience, and names and addresses of three references should be addressed to the Director, School of Mines and Metallurgy, University of Missouri, Rolla, Mo.

RECENT PUBLICATIONS

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 Mineral Resources of Missouri, *The South's Development, Manufacturers Record*, Vol. 86.
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 Proceedings of the Twenty-second Annual Meeting of the Cordilleran Section of the Geological Society of America, *Bulletin*, Vol. 35.
 Even-crested Ridges as Evidence of Former Peneplanation, *Geol. Soc. of Amer., Bulletin*, Vol. 35.
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- English, Walter A., Epsilon '10,
 Some Plane Table Methods, *Am. Assoc. of Petroleum Geologists, Bulletin*, Vol. 8.

- Fettker, Chas. R., Nu '14,
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Magnetite Deposits of Eastern Porto Rico, *A. I. M. E., Vol. 70.*
Cannel Coal and Carbonaceous Shale Deposits in Pennsylvania, *A. I. M. E., Vol. 69.*
Oil Resources in Coal and Carbonaceous Shale of Pennsylvania, *Penn. Geol. Survey, 4th Series, 119 pp.*
- Foshag, Wm., Epsilon '19,
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Famous Mineral Localities, Furnace Creek, Death Valley, Calif., *Am. Mineralogist, Vol. 9.*
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The World's Biggest Borax Deposits (California and Nevada), *Engineering and Mining Journal, Vol. 118.*
- Gardner, E. D., Lambda '07,
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- Howe, Henry V., Epsilon '16.
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- Moody, C. L., Epsilon '16 (See Stock, below).
- Morse, Roy R., Epsilon '13,
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- Packard, Earl L., Epsilon '11,
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- Schilling, Karl H., Epsilon '17 and
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- Templin, R. L., Zeta '15,
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- Tickell, F. C., Epsilon '11,
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Unique Garnet Sand Forming Along the Beach at the Mouth of the Sur River, Monterey Co., Calif. *Geol. Soc. America, Bulletin Vol. 35.*
- Uren, L. C., Epsilon '11,
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- Vanderleck, Lawrence, Epsilon '13,
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The GEAR of THETA TAU

OFFICIAL PUBLICATION OF THE FRATERNITY

DONALD D. CURTIS, OMICRON '19

EDITOR AND BUSINESS MANAGER

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VOLUME XVII

FALL, 1927

NUMBER 1

THANKS are due most of the chapters for the cooperation they extended the GEAR editor but it is necessary to say that some have been altogether too lax with their replies and information. If the GEAR is to continue the custom of publishing chapter letters each chapter should send in a letter for each issue of the GEAR. And, the letters should be written with a view to being interesting to the fraternity at large as well as to alumni and actives of the chapter concerned. Pictures are always good in this regard; use of nicknames is just as surely bad.

Chapter editors will do well to furnish all the alumni data they can. The man out on the job is always glad to hear what his friends of college days are doing, and an alumni note with the address may be the source of renewal of acquaintance.

Last year the directory was promised as a part of the GEAR subscription. The expectation was that it would be published in the summer or early fall. The fact that it is not yet ready for the printer, is due to several things. First, the volume of work in connection with the composition of data was such that it was physically impossible to get it finished. Second, it was necessary in one instance to wait executive action of the convention which will be held during the coming holiday recess. Third, information has not been obtained from some of the chapters. Very soon, the editor will be sending out an appeal to those chapters which have not yet furnished him with their alumni addresses and it is urgently requested that these appeals be attended to at once as carefully and completely as is humanly possible.

As a suggestion to chapters who feel that they have not enough information at hand, we wish to say that the college alumni bureau can help out in many cases; if a man from the chapter will take a list of alumni to such office, he will be able to get a very substantial part of the missing addresses.

Attention is directed to a notice elsewhere in the GEAR about the biennial convention which will be held during the approaching holiday. Coming just before the time to return to school for classes and being held in a central location, the convention could be attended conveniently by many of the actives of the midwestern chapters. As many as can do so should make it a point to attend. The inspiration received from meeting our national officers and from attending the sessions of this meeting will more than justify the effort of getting out.

DEPARTMENT OF THE EXECUTIVE COUNCIL

To All Chapter Officers:

On behalf of the members of the Executive Council I am sending you a most cordial greeting and our best wishes for the coming year.

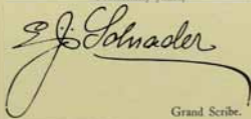
This message is not only for you but for all active members for without their hearty cooperation you can not function properly.

Last spring we received the annual reports from the chapters and while much improvement is noted I wish to comment on the financial statements presented.

Several of the chapters submitted statements which ostensibly showed a profit but which a business analysis would change to loss. My reference is to the unpaid bills which with almost every chapter are too large. Every chapter should establish some system which will limit their accounts receivable. "Pay as you go" should be the policy enforced by every chapter officer. No man should be allowed to run behind and no member should leave the chapter without having made some arrangement to settle all of his bills. Initiation fees must be paid in advance as required by our laws.

A large number of the chapters were prompt in answering all communications from the national officers and our hope is that this year we can say that ALL the chapters have been so prompt.

Fraternally yours,



Grand Scribe.

EIGHTH BIENNIAL CONVENTION

The Convention will be held at the Windermere Hotel, Chicago, Illinois, December 29th to 31st, inclusive. All arrangements are in the hands of the Chicago Alumni Association. If you are planning to attend, communicate immediately with BROTHER T. L. HERRICK, 1543 FARGO AVENUE, CHICAGO, ILLINOIS. Convention bulletins will then be mailed to you from time to time. All members are urged to be present at the Convention if at all possible.

ERICH J. SCHRADER

To All Members of Theta Tau

Fraternal Greeting:

You are hereby officially informed that
MR. HOY STEVENS, Case '22.
(Delta chapter Roll No. 59)

is no longer a member of this Fraternity

Take due notice of this and govern yourselves accordingly.

Fraternally yours,

ERICH J. SCHRADER.

Grand Scribe

October 8, 1927.

ALUMNI NOTES

ALPHA CHAPTER

- VERNE F. CURTIS, '22, is now with the White Company, as Sales Engineer. His new address is 2052 Cornell Road, Cleveland, Ohio.
- WM. HILGEDICK, '26, is touring the world as a radio operator. He was in Hawaii last spring.
- ARTHUR KROL, '25, is with the Illinois Central Railroad Company with headquarters at Chicago.
- GEORGE MORK, '26, is with the Universal Portland Cement Company at Duluth, Minn.
- EDWARD YOUNG, '26, is with the United States Engineers, at Detroit, Minn.

BETA CHAPTER

Where and what some of our H and T men are doing.

- WALTER E. DEWALD, '26, is chief engineer for the Wakefield Iron Works, Wakefield, Mich. He is doing open-pit work.
- ROY DRIER, '21, is working on his Masters degree at Michigan Tech and also doing some research work.
- CORBIN EDDY, '25, is instructing at Michigan Tech.
- CHARLES HARRY, '21, is chief engineer for the Montreal Mining Company, Montreal, Wis.
- FRANK V. HICKS, '15, has been promoted by the Union Pacific Coal Company to the position of Director of Mechanical Loading, having charge of all the mechanical loading in all the mines that have been mechanized. He is living with his family in Wardell Court, Rock Springs, Wyoming.
- RALPH MOON, '20, is working for the Ingersoll Rand Company and is located in Calcutta, India. He visited Beta Chapter this summer.
- CHARLES F. MOORE, '27, is working as engineer for the Montreal Mining Company, Montreal, Wis.
- A. F. MULLINS, '23, is doing general engineering for the Grand Rapids Gas Company, Grand Rapids, Mich.
- NILS NILSEN, is in Ramsay, Michigan.
- THEODORE NILSEN, '27, is with the Ingersoll Rand Company in New York.
- S. P. REES, '23, is working for the Montreal Mining Company in Montreal, Wis.
- RAYMOND D. SATTERLEY, '25, is working for the Ogleby Norton Company.
- J. SCHEMMEL, '17, is chief engineer for the P. & M., Mesaba Range.
- L. SEESTEDT, '27, is construction engineer at Michigan Tech's new athletic field.
- E. M. VIER BUNKER, '25, is now working for the Montreal Mining Company in Montreal, Wis.
- C. E. WESTIN, '27, is an engineer for the Inspiration Copper Mfg. Company.

GAMMA CHAPTER

- ARNOLD BUNTE, '26, was married last spring to Miss Opal Oma Lawrence, at Enid, Oklahoma. Bunte is a cousin of Arthur and Ernest Bunte, also Gamma men. Bunte is with the Roxana Petroleum Company, Box 407, Wichita, Kansas.

- JAY J. BURNS, '16, is now Mill Superintendent for the El Tigre Mining Company, at El Tigre, Sonora, Mexico.
- GEORGE W. CRAWFORD, '23, was married March 23rd, 1927, at St. Petersburg, Florida.
- ERNEST R. CRUTCHER, '14, has been appointed zinc plant metallurgist for the Sullivan Mining Company, Kellogg, Idaho.
- JACK H. EAST, JR., '10, is now superintendent of strippings Locust Mountain Coal Company, Shenandoah, Pa.
- HARRY FISKE, '21, is with the Ingersoll Rand Company. His home address is, 210 Euclid Avenue, Long Beach, Calif.
- THOMAS G. FOULKES, '22, gives his address as 37 West Church Street, Bethlehem, Pa. He is still in the employ of the Bethlehem Steel Company.
- S. A. GARNETT, '20, is with the Empire Zinc Company at Hannover, New Mexico. His permanent address is 306 West 22nd Street, Pueblo, Colo.
- DEAN LESTER S. GRANT, HONORARY GAMMA '99, has been granted a year's leave of absence from the Colorado School of Mines. He is now at the McElroy Ranch, Odessa, Texas, in charge of the Franco-Wyoming properties.
- PARKE HUNTINGTON, '26, is geologist for the Midwest Oil Company.
- HOMER L. JOHNSON, '25, is now Superintendent of the B. and B. Quicksilver Co., Ardenmont, Esmeralda County, Nevada.
- C. FRANK JORDAN, '23, was recently appointed superintendent of the American Smelting and Refining Company property at Santa Barbara, Chihuahua, Mexico.
- WILLIAM LEONARD JUDE, '25, and Miss Alberta Van Der Vreer, of Denver, were married on May 14th, in Denver. Jude came to the Colorado School of Mines from Meriden, Conn. and was engaged in engineering with the H. L. Immich Company for a year before returning to the mining game in Colorado. He is on the engineering staff of the Empire Zinc Company at Gilman, Colo. He is also a member of Kappa Sigma. His bride is prominent in Denver society circles and formerly attended Colorado University. The couple will make their home in Gilman.
- ALLEN KISSOCK, '12, has an office at 61 Broadway, New York.
- A. L. LADNER, '27, is assistant engineer of a mine in Fierre, New Mexico.
- RUPERT B. LOWE, '22, is in Newark, New Jersey.
- EDWARD S. McGLONE, '23, usually considered the greatest fullback in the Rocky Mountain region, is in the employ of Anaconda at Butte, where he is assistant division foreman.
- ROBERT J. McGLONE, '27, is mining and factory inspector for the Thomas J. Daly Insurance Company at Denver. He has the Rocky Mountain territory.
- HAROLD E. MUNN, '17, coal supervisor for the Jackling interests, headed the mine safety team of the Utah Copper company which will represent Utah in the international first aid and mine rescue meet held in Pittsburgh, August 30, 31, and September 1, 1927, under the auspices of the United States bureau of mines. Mr. Munn was formerly in charge of mine safety and rescue work for the United States bureau of mines in the Colorado and Wyoming districts.

- J. F. MYERS, '13, is superintendent of Mills, Tennessee Copper Company, Ducktown, Tenn.
- D. D. RIDGLE, '18, has changed his address to Claridon Road, Chardon, Ohio.
- FITCH ROBERTSON, '20, is at 120 Broadway, New York City.
- T. N. SLAUGHTER, '24, is chemical supervisor for Proctor and Gamble Mfg. Company, 1226 Loomis St., Dallas, Texas.
- MICHAEL SOTOCK, '27, has accepted a position in the sales department of the Diester Concentrator Company, Fort Wayne, Ind.
- CHARLES H. STEWART, '25, was married on April 2nd, 1927, to Miss Gertrude Jordan, of Wilmington, Ohio. The couple will reside at Houston, Texas, where Stewart has a position with the Humble Oil Company.
- FRANK H. STOKAIS, '24, is with the expert department of Ingersoll Rand Company. He is sales and service representative for the company at Hotel Regina, Bogeta, Columbia, S. A.
- GEORGE D. THOMAS, '21, is with the Roxana Petroleum Company at Shreveport, Louisiana.
- C. A. WEINTZ, '27, is geologist for the Midwest Oil Company.
- JOHN M. WELLER, '26, was married last February to Miss Eunice Mattson, at Charleston, W. Va. Brother Weller is also a member of Sigma Alpha Epsilon and Tau Beta Pi. He won the Wolf Medal in 1926 for pre-eminence in scholarship. His bride is well known to recent Golden students. She attended the University of Denver in 1925.
- T. L. WELLS, '28, outstanding backguard, was named captain of the cage squad for the coming season at a meeting of the letter men. He is the best man in the Miner lineup and has enough fight to keep his team going at top speed. He is also a football and baseball man.
- LEE K. WORTH, '17, is in Midwest, Wyoming—address Box No. 432.

DELTA CHAPTER

- GRAHAM BING, '27, is a state highway expert and has been working in and around Cleveland.
- EDMUND B. BOSSART, '27, is taking the Bailey Meter Company's cadet course and is now situated in Cleveland.
- JOHN M. BYRNS, '27, is taking graduate work at Carnegie Institute of Technology on a fellowship from the U. S. Bureau of Mines.
- DENTON T. DOLL, '27, is with the Aluminum Company of America at New Kensington, Pa.
- HAROLD DOUDA, '26, is working with the Bishop-Babcock Company of Cleveland.
- E. L. EDDY, Honorary Delta (Ill. 1900), spoke on "Location of Railroads" at a recent meeting of Delta Chapter. He related many of his experiences and also showed slides in connection with them.
- MILTON C. FRUEHAUF, '27, is happily married and doing engineering work with the Dow Chemical Company, Midland, Mich.
- JOHN N. GLIDDEN, '27, is now a full-bellied instructor in the manly art of swimming at his old Alma Mater. He is also assistant football coach and is doing a mighty fine job of both.
- DOCTOR ZAY JEFFRIES, Honorary (So. Dak. Mines '10), who was recently awarded the Douglas Medal for his work in Metallurgy, spoke on "The

Economic Problem in Business and Its Relations to Engineering" at a recent professional meeting of Delta Chapter.

DOCTOR FRANK R. VAN HORN, Honorary (Rutgers '92), spoke at a recent professional meeting of Delta Chapter on his trip through Yellowstone National Park. Slides were shown in connection with the talk.

EPSILON CHAPTER

J. LEE BENNETT, '20, was married to Miss Margaret Dunbar of Dodge City, Kansas, on June 24th, 1927, at Placerville, Calif.

JOHN P. BUWALDA, Epsilon '12—The Cordilleran Section of the Geological Society of America met at the University of California, in Los Angeles, January 28th and 29th, 1927. John P. Buwalda, Epsilon '12, Secretary of the section, in reporting the meeting for *Science* (Vol. LXV, No. 1687, April 29, 1927) mentioned a very unusual coincidence. We quote from his report: "As an incident probably without precedent in geological meetings in this country, a slight but very distinct earthquake disturbed somewhat the presentation of a paper concerning active faulting. The shock occurred in the midst of a discussion by James P. Fox, of the University of California, of the active Haywards Rift and other recent faults of Central California. It seemed that Nature was protesting, by peculiarly appropriate means, against the investigation and discussion by Inquisitive Man, of one of her normal processes."

GEORGE B. DILLINGHAM, '17, is Superintendent of the Cerro de Pasco Copper Company at Morococha, Peru, South America.

ELLSWORTH Y. DOUGHERTY, '15, has gone to Newfoundland on a new mining enterprise for the American Smelting and Refining Company. His address is Bucans, Via Millertown Junction, Newfoundland.

CARLTON D. HULIN, '20, has returned to his duties as assistant professor of geology at the University of California after a year's study of the geology of the Pachuca district, Mexico, and of the Sunnyside mine, Colorado.

RICHARD JOEL RUSSELL, '19, and Mrs. Russell announce the birth of Benjamin James Russell on July 13th, 1927.

F. G. TICKELL, '12, is Professor of Petroleum Engineering at Stanford University, Palo Alto, California.

THETA CHAPTER

JOHN W. BALET, '27, is with the E. P. Phillips Company of New York.

GILBERT T. BOEKER, '27, is with the Power Specialty Company at Danville, N. Y.

OLNEY B. COOK, '27, is with the Bell Telephone Laboratories, New York.

MAX M. DIXON, '17, formerly geologist for the Mexican Corporation at Fresnillo, has opened an office as consulting geologist in London, England.

DEXTER HINCKLEY, '27, is teaching Engineering in the University of Santa Clara, Calif.

JOHN KELLY JOHNSON, '27, is Instructor in Electrical Engineering at Columbia University.

LELAND LEE, '14, is contracting in Tampico and can be addressed c/o Colonial Club Tampico, Mexico, State of Tamaulipas.

MARTIN H. OLSTAD, '27, is Assistant Works Manager of the Splittorf Electrical Company, in Newark, N. J.

HENRY A. SHERMAN, '27, was married on May 28th, 1927 and is with the American Tin Plate Company at Pittsburgh, Pa.

CARL D. THEOBALD, '27, is with the Power Specialty Company in New York.

JOSEPH H. TRISKA, '27, is with the Texas Company in Port Arthur, Texas.

E. E. WORMISER, '16, has been one of the men substituting for R. W. Raymond in lectures on mining engineering at the Columbia School of Mines.

LAMBDA CHAPTER

T. C. ADAMS, '22, who spent last winter at Cornell, completing his work for a Ph. D., has received an appointment as Assistant Drainage Engineer with the U. S. Division of Agricultural Engineering. His first assignment is in Oregon.

GUY A. HART, '13, has returned to Salt Lake City to make his home, after spending several years in the southeast, during a portion of which time he was connected with the great program of development in Florida.

Wm. F. HEYMAN, '25, who was with the Bureau of Public Roads for a number of years, has accepted a position of assistant engineer in the Supervising Architect's Office in Washington, D. C. and will be engaged on the Public Building construction program now under way. He was recently married to Miss Ruby Denkers of Ogden and they are now making their home in the capital city.

SUMNER G. MARGETTS, '17—Margetts and Kleinschmidt are engineers for the Jordan Fur and Reclamation company which is planning some construction of new dykes and other improvements on its property west of Salt Lake City.

A. Z. RICHARDS, '05—Caldwell and Richards, who are engineers for the Artillery board having in charge the improvements to be made at Jordan Narrows for the National Guard, announce that the plans are completed, and that as soon as approved by the War Department, bids will be asked for, which should be early in April. The improvements consist of sewer and water systems, garbage incinerator, mess and bath houses. H. G. HALL, '18, is also a member of this firm.

NEIL S. SMITH, '23, is with the Nevada Motors Company, South Virginia Street, Reno, Nevada.

THOMAS VARLEY, '07, after serving the United States Bureau of Mines since November, 1918, as superintendent of the experiment station at Salt Lake City, has resigned to practice as consulting engineer in ore dressing and metallurgy, and has established a laboratory at Salt Lake City. Prior to his government service, Mr. Varley had charge of the ore testing department for the Federal Lead Company, Flat River, Missouri. He developed the flotation process in the Southeast Missouri district in 1913 and put in some of the first commercial flotation plants using this process in the United States. Aside from his technical and research experience, he is an experienced mill operator, having been, in his earlier life, connected with various operating mills in Utah, Idaho, and Nevada.

PI CHAPTER

IVY CARTER is working for the Standard Oil Company in its Lynchburg office. We understand that he has a very good job and is making good at it. His address is 505 Clay Street, Lynchburg, Va.

DUVAL LEE is working for the city of Lynchburg, Virginia. We do not see much of him but then he is awfully close to Sweet Briar.

HERBERT W. MATHIASON, '26, is working in New York City.

JAKE PARKER is working for Fuller, McClintock in New York City.

OMICRON CHAPTER

C. B. ANDERSON, '27, is working for the Iowa Highway Commission at Ames, Iowa.

ERNEST G. BEATTY, '27, is located at Milwaukee, Wis., and is working for the Wisconsin Highway Commission.

JACK BOYLES, '27, is working for the Iowa State Highway Commission at Iowa City, Iowa.

ALBERT CARLSON, '27, is situated at Des Moines, Iowa, and has a position with the Iowa Light and Power Company of that city.

KENNETH C. DEWALT, '27, has accepted a position with the General Electric Company and is now located at Schenectady, N. Y.

JAY N. EDMONDSON, '27, is instructor in Drawing and Descriptive Geometry at the University of Iowa. From graduation last February to this fall he was radio operator on the *S. S. Leviathan*, flagship of the United States Lines. On Nov. 12, 1927, Brother Edmondson was married, at Chicago, to Miss Helen Kitch of Mt. Pleasant, Iowa. Mrs. Edmondson was a student of Iowa Wesleyan, where she was a member of Pi Beta Phi.

ERNEST P. FARRELL, '27, is taking the student course at the school of the Commonwealth Edison Company at Chicago, Ill.

EARL J. FLANNIGAN, ex '28, is located at Waterloo, Iowa, making a survey of the lighting distribution of the city for the Iowa Public Service Company.

JOHN S. HOLBROOK, '24, has gone to Green Bay, Wisconsin, to learn the production end of his business with the Automatic File & Index Company. He was formerly working on sales in Chicago.

HERBERT E. HOWE, '26, is at Rock Island, Illinois, with the Rock Island Iron Works.

JOSEPH W. HOWE, '25, who formerly located at Keokuk, Iowa, as Hydraulic Engineer for the Mississippi River Power Company, is at present an instructor in the Department of Mechanics at the University of Illinois.

THOMAS McLANE, ex '29, is working for the Iowa State Highway Commission.

EDWIN G. NEILSON, '26, has been working since June 1, 1927, for the Mississippi River Power Company of Keokuk, Iowa. He was married Sept. 14th to Miss Mary Schaffroth of Corning, Iowa.

HAROLD PHELPS, '25, is working for the American Blower Company and is located at Davenport, Iowa, as Sales Manager for the territory of Iowa.

EDMUND GAINES RICH, '23, and Mrs. Rich announce the birth of a son at their new home in Hollywood, Calif. Mr. Rich, former gridiron star of Iowa and the U. S. Navy, who graduated from the college of applied science here, has been coaching for some time on the coast. His wife is a daughter of A. A. Hurst of Maquoketa, Iowa, president of the Eastern Iowa Power Company.

- EMIL P. SCHULEEN, '26, is working for the Mississippi Power Company and is located at Keokuk, Iowa.
- ERNEST SCHULEEN, '26, is located at Pittsburgh, Penn., and is associated with the West Virginia Light and Power Company.
- ELMER SLAGLE, ex '26, is in Springfield, Illinois, where he is building roads for the Illinois Highway Commission. He and his wife attended Homecoming at Iowa.
- FRED B. SMITH, '25 (M. S. '27), is instructor in Mechanics and Hydraulics at the University of Iowa. He was married June 30, 1927, to Zola E. Bucher.
- MAX STANLEY, '26, has returned to the University of Iowa for graduate work in Hydraulics. He spent the past year with the Billesby Engineering Co. of Chicago, working chiefly on the design of the Government Dam on the Ohio River at Louisville. He was recently married.
- CARL TODSON, '26, is with the American Blower Company in San Francisco, Calif., as representative of the branch office there. The Editor recently had a very interesting write-up of his visit to Yosemite National Park.
- FRANK L. WOODWARD, '25, is now working for the Division of Sanitation, Minnesota State Board of Health, Minneapolis.

SIGMA CHAPTER

- HENRY A. BREVOORT, '25, is working on the new Union Station at Cleveland. He is near enough to the chapter to be of value to the newly organized alumni association.
- MAURICE D. COVERT, '25, is with the Goodrich Rubber Company at Akron. Maurice was married during the summer.
- MERVIN F. DEVINE, '23, is with the Ohio Paint and Varnish Company. He visits the chapter house occasionally, usually for the football games.
- GEORGE H. HARDING, '26, is a member of Coulson and Harding, Civil and Municipal Engineers, at Cincinnati, Ohio. George seems to have started at the top.
- ROBERT C. HICKMAN, '24, is at Goyllarisquisga, Peru, South America. The good breezy letter received from him was quite a surprise. He says that he is surveying an hacienda of only 2400 square miles area. Just a small one. Brother Hickman says that there is room for more H and T men in Peru.
- GARRET J. KANE, '24, is Grade Separation Supervisor for the Ohio State Highway Department, at Columbus. He is making good with a vengeance.
- ARTHUR V. McNAMER, '25, is now Chief Electrical Engineer at the Los Angeles Plant of the Goodyear Rubber Company. Another Sigma man is climbing fast.
- WILLIAM A. MEISTER, '27, is working for the Worthington Pump Company at the New Jersey plant.
- FRANK J. MURRAY, '24, is with the Pure Oil Company and is stationed at Mexia, Texas.
- JAMES D. O'ROURKE, '26, is employed with the Westinghouse Electric Company, at Wilkinsburg, Pa. He gets back to Columbus about twice a year.
- ROSCOE E. ROBINS, '26, is in Chicago, and is actively interested in the work of the Alumni Association there.

- CHAS. R. ROSS, '26, is Resident Engineer for the Ohio State Highway Department, at Columbus.
- RAYMOND SPERR, '25, is also a Resident Engineer for the Ohio State Highway Department, at Columbus.
- ELLSWORTH G. WILLIAMS, '26, is with the Goodrich Rubber Company at Akron.

TAU CHAPTER

- SAMUEL W. CLARKE, '27, is employed by the Clarke Construction Company Pleasantville, N. J.
- CHARLES F. FOELL, '26, is now working for the Worthington Pump Company in Harrison, N. J.
- JAMES C. FRINK, '27, is with the Westinghouse Electric Company in Pittsburgh, Pa.
- GORDON E. GARNHART, '27, is working for the Westinghouse Electric and is located at Pittsburgh, Pa.
- KENNETH E. GRAY, '27, gives his address with the Bell Telephone Company, Syracuse, N. Y.
- JOHN V. GROVE, '27, is employed by the American Telephone and Telegraph Company and gives his address as 40 Rector Street, New York City.
- THEODORE P. HALL, '27, is doing graduate work at the Massachusetts Institute of Technology, Cambridge, Mass.
- ROBERT H. HUGHES, '25, is now working for the Atmospheric Nitrogen Company, Solvay, N. Y.
- HARRY L. JENTER, '26, is with the Newburgh Wire Works, Cleveland, Ohio.
- FRANCIS W. KIRKPATRICK, '27, is working for the Worthington Pump Company in Harrison, N. J.
- WILLIAM M. MACALPINE, '26, is employed by the Atmospheric Nitrogen Company and is located at Solvay, N. Y.
- EVERETT W. NOBLE, '27, is in Cleveland, Ohio working for the American Steel & Wire Works.
- RICHARD RICKARDS, '27, is working for the Worthington Pump Company in Harrison, N. J.
- NORMAN W. SEITER, '27, is with the New York Telephone Company in Syracuse, N. Y.
- HENRY S. STEARNS, '27, is employed by Stearnes and Sons, Syracuse, N. Y.
- CARL F. WOESE, '25, is Heating and Ventilating Engineer and his address is 802 N. McBride, Syracuse, N. Y.

MISCELLANEOUS

- E. A. HOLBROOK, Hon. Kappa (MIT, B. S. '04), who has been Dean of Mining at Penn State College, became Dean of Mining at the University of Pittsburgh, on September 1, 1927.
- ARTHUR HYDE, Kappa '24, was married on June 25th and is with the Metal Disintegrating Company, Elizabeth, N. J.
- WINFIELD S. MORRIS, Rho '24, was married at Tulsa, Okla., to Miss Mary Louise Holmes of Tulsa, on June 1, 1927. Mr. and Mrs. Morris are now living in Shawnee, Oklahoma.

THETA TAU PROFESSIONAL CARDS

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 Consulting Mining Engineer
 24 Avenue 18
 Venice, California

V. A. BRUSSOLO

Epsilon '20
 Engineer, Moctezuma Copper Co.
 Pilares de Nacozari
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FRED COFFMAN

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 W. H. Booker, Consulting Engineer
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W. V. DeCAMP, E. M.

Gamma '08
 General Superintendent
 United Verde Copper Co.
 Jerome, Arizona

IRVING D. JAKOBSON

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PHIL J. LAURENCE

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THOS. VARLEY

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 Industrial Properties
 1046 McKnight Building
 Minneapolis, Minnesota

WALTER H. WHEELER, E. M.

Alpha '06
 Designing and Consulting Engineer
 Investigations, Reports, Plans, Specifications, Supervision of Construction, Valuations for Structures, Bridges, Buildings, Dams, Manufacturing Plants, Etc.
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