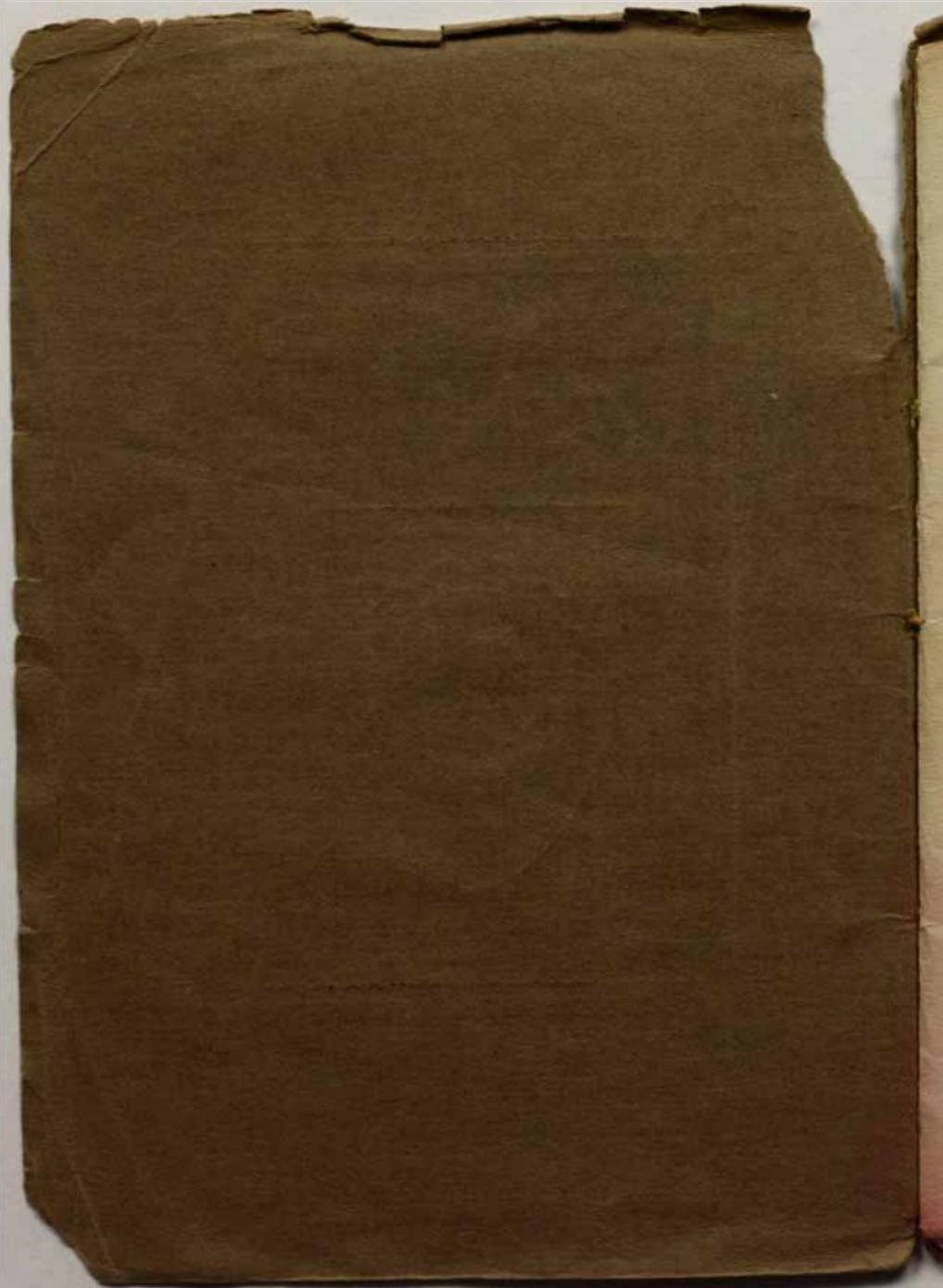
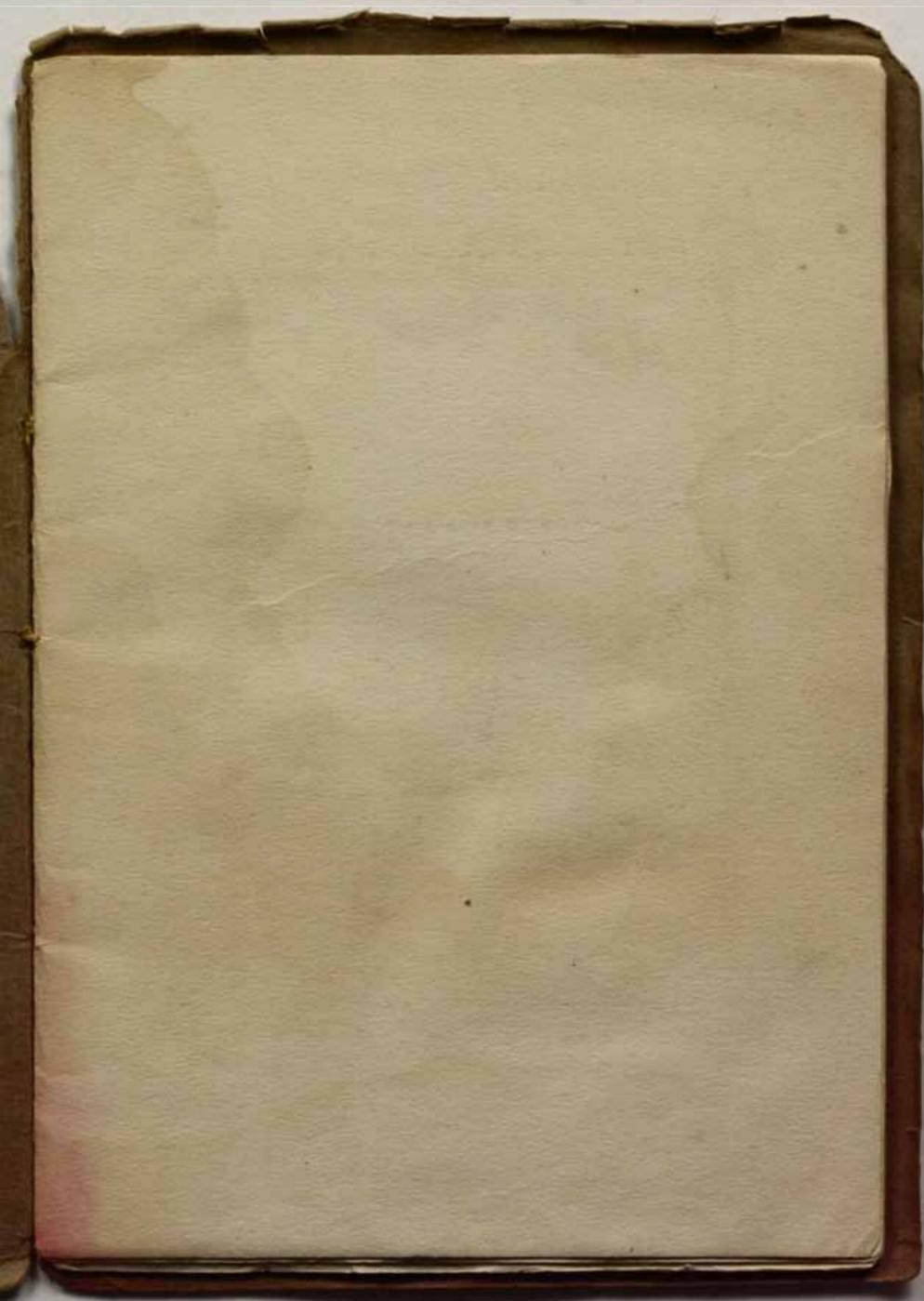


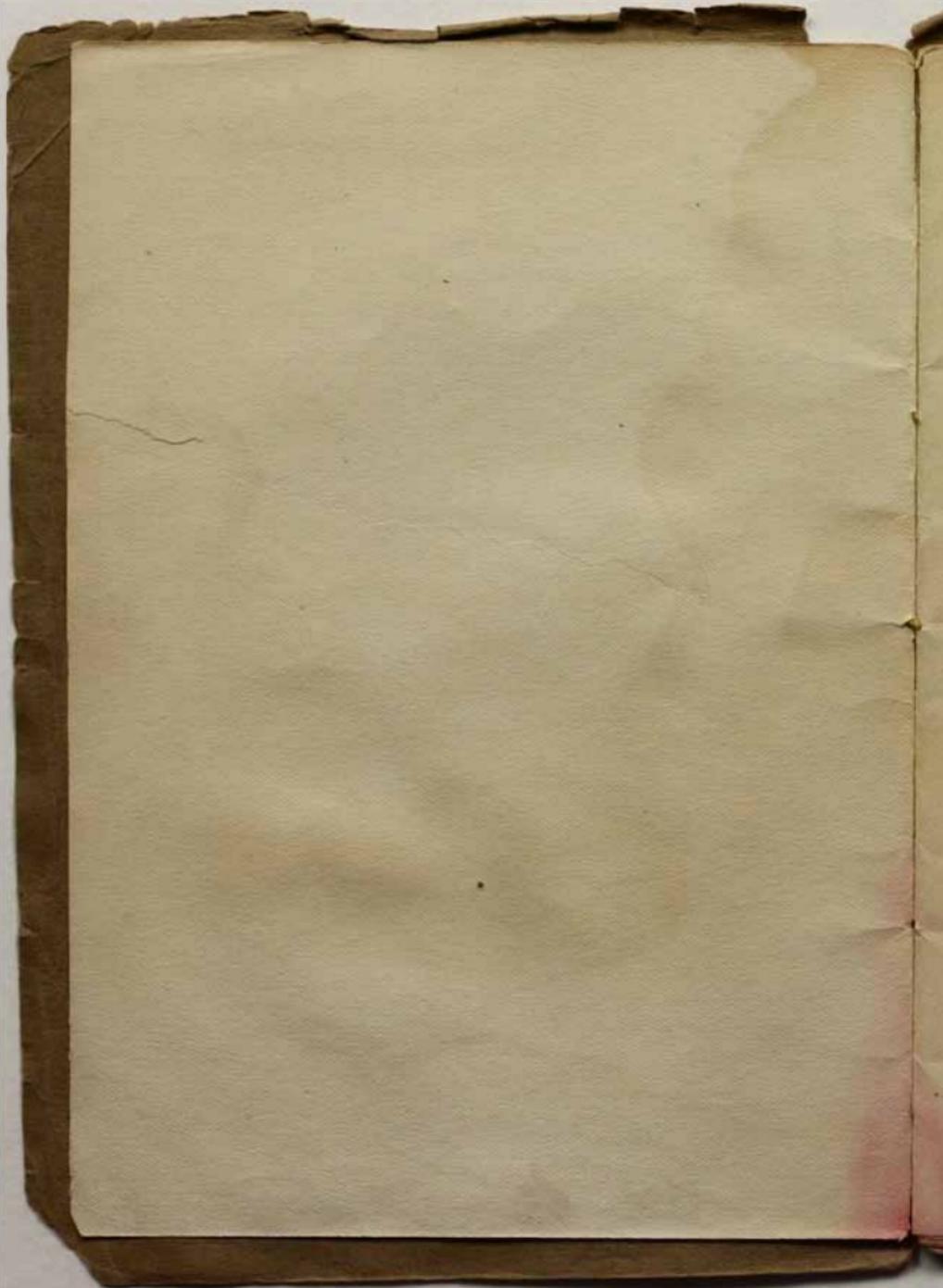
THE GEAR



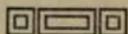
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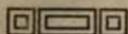




# THE GEAR



A Chronicle of the  
Fraternity in  
General



Published under the direction of the

**BETA CHAPTER**

HOUGHTON

MICHIGAN



# Hammer and Tongs Fraternity

FOUNDED

AT THE

University of Minnesota

IN

1904

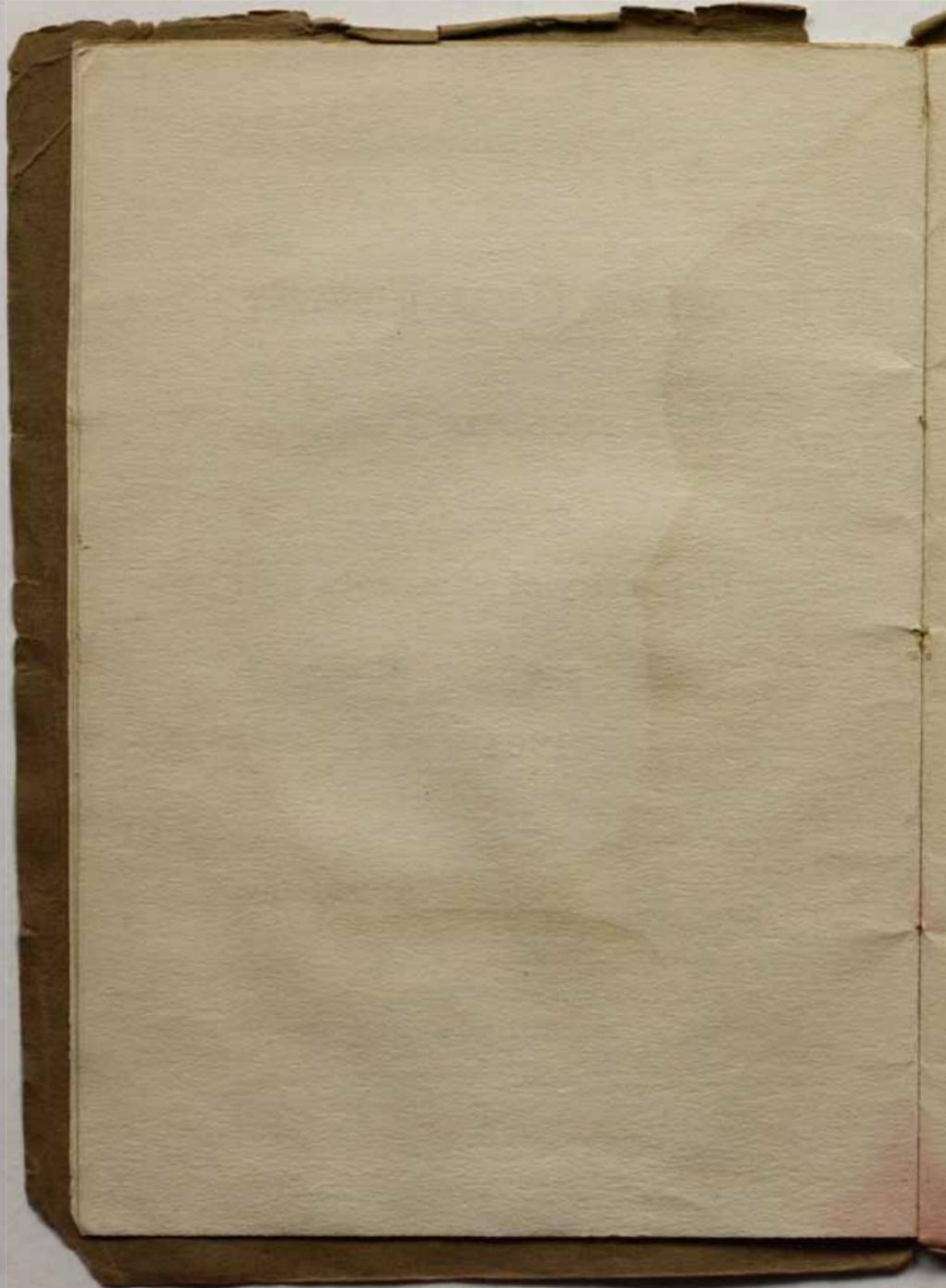
BY

Erick J. Schrader

Edwin L. Vinal

W. Murray Lewis

Isaac B. Hanks



# THE GEAR

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NUMBER 2

1909

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**I**N ISSUING this annual, for such it has been made since the issue of No. 1, we are indebted to the hearty support of Alpha and Gamma.

We have put the annual on a business basis and within its bounds we hope to keep the alumni and the active brothers in touch with each other. Without the support of the alumni it will be impossible to keep the directory up-to-date. Therefore we ask each and every alumni brother to notify Beta Chapter whenever there is a change of address made.

The cover and name of the annual has been adopted by the Fraternity Annual Committee. The date of publication will be March of each year.

The inserting of the chapter pictures, met with the hearty approval of the chapters and we feel sure that the alumni will see the benefit of being able to get a glimpse of the active members.

We also hope that the alumni, as well as the active chapters, will offer any and all suggestions that may come to them for the benefit of "The Gear."



## THE ALPHA CHAPTER

Atkinson	Hauser	Leach	Bush
Brockway	Timperly	Du Toit	Wesbrook
Torrance	Hauser	Cobban	Rood
Jaques	Sheffield	Shepard	Kruschke
		Walling	Starrett
			McGinnis
			Wright

## THE ALPHA CHAPTER

DEAR BROTHERS:

THE splendid success of last year's annual was very gratifying to all of us, and the brothers of Beta are to be commended for the spirit in which they have undertaken this work. We hope that henceforth it will be a yearly feature of the work of the Fraternity of Hammer and Tongs.

All expectations of a successful year for Alpha in 1908 were fully realized. Our custom of holding bi-weekly meetings at the various fraternity houses, followed by a feed and a description of some engineering work by an upper-classman, was carried out very well; and during the past year we have had many interesting and instructive talks.

On February 13th, 1908, Bro. Furber played the host at the Sigma Alpha Epsilon house. The evening was spent at cards and other forms of amusement, after which refreshments were served, followed by a description of "Shaft Driving in Mines" by Bro. Strong. The meeting was fittingly closed by several verses from the famous Senior Engineer Song. The second rushing party of the year was held on February 26th at the Phi Kappa Psi house, at which the following were pledged: Brothers Hinckley, Dollimore, Wright, McGinnis, Sheffield and Curtiss. On March 25th, the above men were duly initiated into Hammer and Tongs. Of these initiates Brother Hinckley was at that time instructor in Sanitary Engineering in the

Civil Department and made an honorary member. On May 13, Bro. Palmer extended the hospitality of the Beta Theta Pi house. At this meeting the custom of having an annual H. & T. banquet each spring, in honor of the departing seniors, to be given by the under-classmen, was decided upon. Following a generous repast Brother Furber introduced us into the mysteries of "The Design of a Two Hinge Arch Bridge." On May 27th the first annual banquet was held at Crombies in honor of Brothers Furber, Dollimore, Strong, Kennedy, Knowlton, Woodrich and Mowery, who were soon to leave their Alma Mater. The six course dinner was followed by talks upon "Sanitary Engineering" by Brother Hinckley, and upon "United States Geological Survey Work" by Bro. Dollimore. A series of informal toasts, responded to by each senior followed, and at a late hour the party broke up.

After spending the vacation engaged in various kinds of engineering work sixteen strong men returned last fall to carry on the work of the present year. It is very much to be regretted that Bro. Hinckley, who engaged in engineering practise during the summer did not choose to return this fall; and that Bro. Miner was prevented by illness from doing so.

The first meeting of the year was held at Crombies on September 24th. After the customary "big steaks" had disappeared, plans for the ensuing year were discussed and the meeting broke up at an early hour. The rushing party for new men was held at the Phi Kappa Psi house on October

14, at which the following were pledged: Brothers Timperly, Du Toit, Wesbrook. Leach, R. Hauser, K. Hauser, Kesner, Atkinson and Bush. Bro. Kesner, a University of Colorado graduate and an instructor in the Structural Department at Minnesota was to be initiated as an honorary member of H. & T. The initiation was held November 18 at the Beta Theta Pi house. After the ceremonies "The Northwestern States Portland Cement Plant" was described by Bro. Shepard. The remainder of the evening was spent in song and such amusements as good fellowship tends to promote. On December 9th Brother Rood entertained us at the Delta Upsilon house. The features of the evening were talks on "Western Experiences of a Junior Miner" by Bro. Rood and "The Financial Difficulties of a Contracting Company" by Bro. Torrance.

So much for the routine part of our life. Outside of this, Alpha has not neglected social, college or athletic activities. Socially H. & T. is to make its debut on February 17th, when an informal dancing party will be given at Wilson's Hall. The hall will be tastily decorated and it is needless to say that "it will be done right." In University circles our standard has been well upheld. Bro. Buck was President of the '08 Rooters Club, Bro. Torrance is Engineering Representative on the '08 Athletic Board of Control, Bro. Leach is Secretary of the '09 Athletic Board, Bro. Shepard is Editor in Chief of the Minnesota Engineer, Bro. Cobban is Business Manager of the Minnesota Engineer, Bro. McGinnis is treasurer of the '10 Junior Ball Association, Bro. Timperly is Engin-

earing Representative on the '10 Gopher Board and Brothers Walling and Brockway are respectively Vice-President and Treasurer of the senior class. In athletics Bro. Kruschke is a guard on the '09 Basket Ball Team, Bro. Atkinson was substitute quarter-back on the Minnesota '08 football team, and Bro. Bush is a half miler on the track team. The others, although not in the lime-light, have starred more or less in interclass sports.

In the recent establishment of a South-West Hammer and Tongs Alumni Chapter at the alumni reunion at Douglas a forward step has been taken. This step should be very gratifying to the Fraternity at large, since an alumni chapter, composed of alumni from the different active chapters can do a great deal toward unifying the policy of H. & T. At its meetings the views of each chapter will be presented and its opinions should be of great value in guiding the present and shaping the future policies of Hammer and Tongs.

With twenty-four strong men in the chapter Alpha is enjoying a very prosperous year and extends her heartiest greetings to Beta and Gamma.

GEO. M. SHEPARD.



#### *Alumni News*

**B**RO. Schrader is with the San Miguel Gold Mining Company at Sonora, Mexico. Bro. Fox ex-'10, received an appointment to West Point last spring and is now a cadet at that place.

Bro. Dallimore, C. E. '08, is engaged in railroad work near Livingston, Montana.

Bro. Knowlton, C.E. '08, is in Costa Rica on railroad construction work.

Bro. Woodrich, C. E. '08, recently entered the employ of a Chicago Construction Company.

Bro. Kesner, instructor in Civil Engineering, resigned in December to accept a position with the U. S. Geological Survey at Pittsburg.

Brothers Furber and Mowery, C. E. '08, are in the designing department of the Minneapolis Steel and Machinery Company of this city.

Brother Hinckley was about the campus several days in February.

Brother Spring, M. E. '07, is in the employ of the Roberts Ventilating and Heating Company of Minneapolis.

Bro. Strong, Mining '08, is mining engineer with the Oliver Iron Mining Co.

Bro. Kennedy is at the Shenango Mines at Chisholm, Minn.



## THE BETA CHAPTER

Top row, left to right: Simpson, Haug, Cameron, Hellberg, Wagner, Randolph, Hicks, Synder, Peacock, Armitage  
 Welcker Sheldon Wenk Potter Hopkins Staples Longan Wood  
 Luce Brown Barr Varney Carroll Shedwick Crabb

## THE BETA CHAPTER

DEAR BROTHERS:

**I**N this the second annual letter to the general fraternity, Beta wishes to thank the brothers at large for the interest and very hearty support which was accorded the previous annual.

Since issuing the last annual Beta has been up and doing. Not only have individuals distinguished themselves, but the Chapter as a whole has made an enviable reputation. At the beginning of the year, fourteen of last year's active members returned, together with Bros. Barr, Randolph, Varney and Hellberg. All immediately turned their attention to the advancement of the Chapter. Some strong rushing was done. A most enjoyable lunch was served in the rooms of Bros. Brown and Shedwick, after which a smoker was held at the house. This was the first night of the school year, which fact will indicate the spirit which has characterized the entire year. Something was stirring nearly every night and during all the theater parties, lunches and smokers, a spirit of fellowship and good humor seldom equalled and never excelled, was prevalent.

W. R. Cook, a pledge from the summer term, was initiated on October 6th. On the 31st of that month, T. J. Welcker, E. H. Synder, R. B. Wagner, E. J. Haug, C. G. Sheldon and J. F. Simpson were initiated into the sacred rites. After the initiation, a banquet was tendered the initiates at the Scott Hotel, Bro. Hopkins presiding as toastmaster. The following toasts were responded to:

Welcome - Bro. Longan  
Expansion - Bro. Wenk  
Alumni - Bro. Randolph

The entire evening was unanimously voted a huge success.

In the social line we have been far from slow, Bro. Cameron, who has been honored by membership in the Tau Beta Pi Fraternity, was a member of the Annual Prom. Committee for 1908. The Prom. was held on June 8th at the college gym and Beta Chapter was very well represented. Bro. Brown is chairman of the College Dance Committee and has received the hearty support of the Chapter, a goodly number attending these parties. During the Christmas holidays several parties were held, and although Beta was greatly decreased in numbers at this time, those remaining in town put forth an extra effort in behalf of the absent ones.

Bro. Carroll is on the smoker committee at the gym. We have some fine times attending these smokers which occur quite frequently on Saturday nights.

Bro. Wood has been made a member of the Senior executive committee.

Bro. Luce represents us on the athletic committee and although we have very little time for athletics, the school has one of the fastest basket ball teams ever seen in this locality. So far this year the team has not been defeated. Neither was it defeated last year. A very good schedule was arranged for this year including several trips. There are still a number of outside games to be played before the close of the season. We are

very proud to have upon such a team two of our brothers, namely Bros. Wood and Luce, who have been with the team for the past two years. Bro. Brown has also done very well in this line as he is manager and captain of the "Migets."

The annual foot-ball game last fall ended in a tie. The final score being 0-0. Bro. Cook played a very good game at half for the Sophomores. Bros. Welcker, Synder and Sheldon represented us on the Freshman team.

A little excitement was caused early last spring, by a fire breaking out in the room of Bros. Wenk and Cameron. Fire started in the waste paper basket one noon after most of the brothers had gone to school. If it had not been for Bros. Carroll and Longan a serious fire might have resulted. They were still in the house when the warning came. They rushed into the room and threw a blanket over the table, which was in flames, thus smothering the fire. It was all out before the fire department arrived. A few books and decorations were all that were damaged besides the table and window casing.

All the mine surveying on the Iron Country trip last spring was done at Quinnesec. Eight "H. & T." men reported for the trip. After the usual two weeks of underground work the boys started on the sketching part of the course which included most of the towns in the Iron Country.

At the beginning of the summer term just one squad of "H. & T." men reported for work in surveying. They were very much pleased to find that Bro. Hicks was to be one of the instructors

in the course. Those taking shops found Bro. Peacock in overalls ready to teach them the quickest way to get dirty.

A number of men took the geology field trip the last six weeks of the summer term after which we all went home for a short rest of four weeks.

So much for the happenings since the last Annual.

Beta has not been slow in other matters. It has been decided that we build a home of our own as soon as we are able. In view of this fact a stock company is being organized and stock issued to the extent of \$25,000. We have the option on several lots in the new East Houghton Addition just east of the college. As soon as we decide upon the location the lot will be purchased and the stock sent out. The present plan is to issue the stock to the brothers to be paid for within one year. It is hoped that in this way it will be made easier for the brothers to take care of it, each one of whom is to take what he is able. Of course we hope that a large number will take the stock and pay in the whole amount due at once. The active men have already pledged themselves to the extent of nearly a thousand dollars. It will not be possible for us to start to built at once but we hope to procure the lot this year and to start to build by 1911. This is to be the year of the first M. C. M. reunion. We hope all our brothers will be back for this and be here to see us break ground for a new home. We realize that the largest part of the expense will fall on the alumni but we who are starting the project

have not gone at it blindly. We will belong to the alumni by that time, the present Freshman class graduating that year, so that we will all be out and able to help. No project ever taken up by an "H. & T." man has fallen through. So, brothers, we do not want to fail now. The house fund has been started but the house will not be built until a sufficient amount of money has been obtained.

Another matter taken up by Beta is the publishing, on the first of every other month, a circular letter. It was thought that in this way the brothers could be kept in touch with one another. We hope that they will each and every one write a letter to us, at least as often as they receive ours. We will be very glad to receive any suggestions whereby we might be able to improve these letters that we will send out.

Now that the establishment of alumni chapters in different parts of the country is assured, a great benefit has been done the Fraternity at large. It is our alumni out in the engineering world who are better able to see where the policy of "H. & T." might be improved. With the forming of these chapters new ideas may be better discussed and brought to the attention of the active chapters.

We have at the present time two new pledges, E. H. Stilwill '11 and W. T. McNabb '11. They will be initiated on the evening of the fourth annual banquet which will be held some time in April. All brothers are urged to make a special effort to attend. Not only our alumni are invited,

but the alumni and active members of the other Chapters, as many as can attend, are urged to be present.

In closing, Beta extends to her sister chapters and the alumni the best wishes for a very prosperous year.

C. B. CAMERON.



### *Alumni Notes*

N the eleventh of March, 1908, Bro. Wilkenson, an old Rhombohedron, was initiated by Bros. Schrader and Pickard at Douglas, Arizona.

During the Christmas holidays Bro. Parkhurst, another old Rhombohedron, was initiated at Chicago. Six of the brothers were able to attend the initiation and tender Bro. Parkhurst a banquet and theater party. Those present were Bros. Varney, Peacock, Hopkins, Wood, Cameron and Simpson. The new M. C. M. Library is just about completed. They expect to move into it the first of May.

Bro. Potter has again come out of the frozen north to be with us for at least a year.

Bro. Andrews, now President and General Manager of a prosperous mining company, was here recently on a business visit and donated a block of stock which will be a substantial help in meeting the expenses of the new house.

Bro. Hasselbring, more commonly known as "Hazy" spent a few days with us and a few dollars on us about Christmas time. Keno!

Bro. Graham was with us a few days last fall with a stomach ache. Thanks for the Christmas present "Rube."

Bro. Houston was here for a few days during the past year. He is still as fat as ever.

Bros. Staples and Hopkins have recently joined the alumni ranks.



## THE GAMMA CHAPTER

Wasley	Curtis	Jones	Kerchman	Rupert	Russell
Brown	Carpenter	Schafer	Benjousky	Dittus	Lewis
	Kruger				

## THE GAMMA CHAPTER

DEAR BROTHERS:

**W**E extend our heartiest greetings for a successful year.

Since the last annual, many things have happened to Gamma. Our members from the '08 class have graduated and drifted apart, our new men, all fine fellows, have joined us and now wear the badge of "H. & T."

The new members were initiated the night of October 20th, '08. Each member was required to give a talk on some subject previously assigned to him, and they all turned out to be very successful.

The initiation was ended with a good old "Dutch Lunch" and from all appearances looked enjoyable.

At the next business meeting it was decided to meet twice a month, on the first and third Wednesday, to be divided as follows: The first Wednesday to be given up to social functions and the third Wednesday to be devoted to talks on scientific subjects. Already we have had some very enjoyable talks on "Dry Placer Machines," "The Use of Crude Oil for Automobiles," and "The Geology of the Montezuma County, Colorado."

The Fraternity house is the same one as was used last year and belongs to two of our members.

Gamma is enjoying a healthy and prosperous life, and is making great steps towards prominence among the fraternities of the Colorado School of Mines.

Our Alumni members now hold prominent positions in the mining world and are showing themselves worthy of the recognition of "H. & T." All we can say now is that we hope to become even stronger next year and more closely bound to the Alpha and Beta Chapters of "H. & T."

D. O. RUSSELL.

*The South-Western Alumni  
Association*

 ON December 24th and 25th at the Hotel Gadsden in Douglass, Arizona, a meeting of Hammer and Tongs Alumni took place.

Those present were:

Schrader, E. J., Alpha '05  
Kunke, C. A., Beta '06  
Pickard, B. O., Beta '07  
Koontz, K. K., Beta '08  
DeCamp, W. V., Gamma '08  
Wilkinson, P. H., Beta '05

Letters and wires were read from Bros. Wing, Wanvig, Phillips, Bryan, Wheeler and Thoms who at the last moment were prevented from coming.

Bro. Schrader was elected President and Bro. Pickard, Secretary for the year 1909.

The object of this meeting was to organize an alumni chapter. Accordingly it was decided to petition the active chapters for a charter. In this way it was decided the success and desired goal of "H. & T." could be better reached. By actually and practically helping our brothers in the active engineering world we strengthen the fraternal bond and help keep alive those feelings and principles which we pledged ourselves to keep, and which too often are soon forgotten and neglected.

Many of us hear of opportunities that would be just the thing for an "H. & T." brother but we cannot, at the necessary moment, remember one that is in hard luck, or what is more frequent,

about to graduate from college and no position in sight. By having an alumni chapter, the secretary of which is known to the fraternity in general, we give all members a chance to express their wants and the secretary in turn can notify the members of his alumni chapter about these.

Moreover, we do not desire that any "H. & T." man come into the south without knowing that there are members of our fraternity located there to whom he can turn in time of trouble or sickness and feel sure that he is among friends who will relieve his many worries and aid him in any possible manner.

Many times our members are offered positions by companies in our districts of whose standing they know little and about whom they can get true information with difficulty and we believe that in many such cases we can be of material assistance, and give good advice, and often prevent them from having disagreeable experiences and losses through crooks and swindlers who especially seem to make mining their chosen field.

Such are the objects we have in view. We urge the other alumni to follow our lead and by so doing accomplish an object, carry out a principle of "H. & T." and bring about that high standing and true fraternal bond which we all so earnestly desire and have individually pledged ourselves to carry out.

## THE ALPHA CHAPTER

### UNIVERSITY OF MINNESOTA

- Atkinson, Wm. B., '10, Bamesville, Minn.  
Brockway, Alvah E., '10, Luverne, Minn.  
Buck, Frederick Wm., '09, Duluth, Minn.  
Bush, John C. Jr., '10, Duluth, Minn.  
Cobban, Rollo, '10, Luverne, Minn.  
Curtis, L. B., '09, Medford, Minn.  
Du Toit, Geo. N. Jr., '10, Chaska, Minn.  
Hauser, Rupert V., '10, St. Paul, Minn.  
Hauser, Kenneth D., '11, St. Paul, Minn.  
Jacques, Robert A., '09, Duluth, Minn.  
Kruschke, Geo. A., '09, Duluth, Minn.  
Leach, Edward W., '10, Winona, Minn.  
McGinnis, W. N., '10, Staples, Minn.  
Palmer, Porteus B., '10, St. Paul, Minn.  
Rood, Lynn, '09, St. Paul, Minn.  
Sheffield, Fred W., '09, Crookston, Minn.  
Shepard, Geo. M., '09, Kenyon, Minn.  
Starrett, Howard M., '09, Minneapolis, Minn.  
Torrance, Eliakim, '09, Minneapolis, Minn.  
Timperley, Wm. P., '10, Minneapolis, Minn.  
Walling, Benj. B., '09, Chicago, Ill.  
Warren, Alvah H., '09, St. Paul, Minn.  
Westbrook, Donald M., '10, Minneapolis, Minn.  
Wright, H. H., '09, Luverne, Minn.

## *THE BETA CHAPTER*

MICHIGAN COLLEGE OF MINES

- Armitage, John B., '10, Three Rivers, Mich.  
Brown, Percy D., '09, Philadelphia, Pa.  
Cameron, C. Burch, '10, Milwaukee, Wis.  
Carroll, William F., '09, Chicago, Ill.  
Cook, Wallace R., '10, Marinette, Wis.  
Crabb, James M., '09, Detroit, Mich.  
Haug, Edward J., '10, Houghton, Mich.  
Hellberg, Edward A., '10, Norway, Mich.  
Hicks, Bert R., '09, Oshkosh, Wis.  
Longan, Walker B., '08, Kansas City, Mo.  
Luce, Earle P., '10, Grand Rapids, Mich.  
Peacock, Ceth D., '08, Chicago, Ill.  
Potter, Ocha, '05, Houghton, Mich.  
Shedwick, William J. Jr., '09, Philadelphia, Pa.  
Sheldon, Churchill G., '10, Grand Rapids, Mich.  
Simpson, James F., '09, Chicago, Ill.  
Snyder, Edward H., '11, Salt Lake City, Utah.  
Varney, Fred W., '08, Salt Lake City, Utah.  
Wagner, Ralph B., '10, Grand Rapids, Mich.  
Welcker, Theodore J., '11, Salt Lake City, Utah.  
Wenk, Ralph W., '10, Marinette, Wis.  
Wood, Ely C., '09, Peoria, Ill.

## THE GAMMA CHAPTER

COLORADO SCHOOL OF MINES

- Beryousky, T. D., '09, Del Morte, Colo.  
Brown, Walter Reginald, '10, Evanston, Ill.  
Carpenter, Paul H., '10, Sharon, Pa.  
Curtis, Leroy Percy, '08, Littleton, Colo.  
Dittus, Edward J., '11, Golden, Colo.  
Jones, Ernest F., '10, Las Esperanzas, Coahuila, Mex.  
Kirchman, Robert I., '08, Golden, Colo.  
Kruger, Herman A., '09, Denver, Colo.  
Lewis, William M., '09, St. Paul, Minn.  
Lowell, James B., '08, Worcester, Mass.  
Neer, Paul, '09, San Juancito, Honduras.  
Rupert, Allen M., '11, Geneva, N. Y.  
Russell, Donald O., '09, London, England.  
Schafer, Lewis, '09, Lake, Colo.  
Wasley, William A., '09, Greeley, Colo.

### HAMMER AND TONGS ALUMNI

- |   |           |
|---|-----------|
| Alsip, Albert Arthur<br>Helen Mine, Ontario, Canada.                    | Beta '08  |
| Aderson, George Andrew<br>Mt. View Mine, Butte, Mont.                   | Beta '06  |
| Andrews, Worth Briggs<br>Ora Belle Mines Company, Hart, Cal.            | Beta '06  |
| Barr, James Allen<br>Dept. of Metallurgy, M.C.M., Houghton, Mich.       | Beta '07  |
| Bartlett, Hiram Lawrence<br>Washwank, Minn.                             | Beta '04  |
| Batson, Charles Drewry<br>Waterworks Dept., St. Paul, Minn.             | Alpha '07 |
| Benson, Anthony Frederick<br>Republic Iron & Steel Co., Virginia, Minn. | Beta '03  |
| Bishop, Gabriel Chambelayne<br>Deceased.                                | Rhom. '05 |
| Burke, Gilbert Michael<br>Bullfrog Mining Co., Joplin, Mo.              | Beta '06  |
| Chandler, M. D.<br>Sand-Lime Brick Co., New Brighton, Minn.             | Alpha '08 |
| Clapp, Lewis P.<br>Golden, Colo.  | Gamma '08 |
| Cossar, Geo. Carter<br>East Craig, Corstorphine, Scotland.              | Rhom. '06 |
| Cowin, James<br>Haciend Loreto Pachuca Hid, Mex.                        | Alpha '07 |

- |  |           |
|--|-----------|
| Crocker, Bertram Erwin   | Beta '09  |
| Iron Mountain, Mich.   |           |
| Callimore, A. H.   | Alpha '08 |
| Eng. Dept., C. M. & St. P. R. R.                               |           |
| DeCamp, W. V.  | Gamma '08 |
| Sonora, Mexico.  |           |
| Downing, Robert Lee  | Beta '06  |
| Shenango Furnace Co., Chisholm, Mich.                          |           |
| Douglas, Thos. J. Jr.  | Rhom. '04 |
| 900 New Hampshire Ave., Los Angeles, Cal.                      |           |
| Earling, Roy Brown   | Beta '08  |
| Superior & Boston Copper Co.,<br>Globe, Ariz.                  |           |
| Everheart, Ernest  | Beta '08  |
| Cubo Mining & Milling Co.,<br>Apartado 49, Guanajuato, Mexico. |           |
| Edgerton, Ralph E.   | Alpha '07 |
| Sand Point, Idaho.   |           |
| Ellis, Bruce B.  | Alpha '08 |
| Drake & Stratton, Hibbing, Minn.                               |           |
| Fox, Milo P.   | Alpha '09 |
| West Point Military Academy.                                   |           |
| Frich, Frederick F.  | Gamma '08 |
| Anaconda Smelting Co., Anaconda, Mont.                         |           |
| Furber, Pierce Powers  | Alpha '08 |
| Minneapolis Steel & Mach. Co.,<br>Minneapolis, Minn.           |           |
| Graham, Ernest R.  | Beta '07  |
| Pluma, South Dakota.   |           |

- |  |           |
|--|-----------|
| Grygla, Eugene E.<br>Moapa, Nevada.  | Alpha '08 |
| Hanks, Isaac Baker<br>46 Chamber of Commerce Bldg.,<br>Minneapolis, Minn.        | Alpha '07 |
| Hasselbring, Albrecht<br>Wilbur Iron Ore Co., Wilbur, Ont.                       | Beta '06  |
| Haynes, Jack Ellis<br>Dept. of Mineralogy, U. of M.<br>Minneapolis, Minn.        | Alpha '08 |
| Herman, Chas. Frederick<br>Inland Steel Co., Hibbing, Minn.                      | Beta '06  |
| Hopkins, Herman H. Jr.<br>50 Dearborn St., Chicago, Ill.                         | Beta '08  |
| Houston, Fred Kennedy<br>Beaver, Pa.   | Beta '05  |
| Johnson, John Saias<br>Commonwealth Mine, Pearce, Ariz.                          | Rhom. '04 |
| Kennedy, John J.<br>Shenango Mines, Chrisholm, Minn.                             | Alpha '08 |
| Kilgom, Martin N.<br>Canadian Bank of Commerce,<br>New York City, N. Y.          | Gamma '08 |
| Kingston, Carl John<br>Cerro De Pasco Mining Co.,<br>Cerro De Pasco, Peru, S. A. | Beta '06  |
| Kirkpatrick, Marsena R.<br>713 8th Ave., Seattle, Wash.                          | Beta '07  |

- |  |           |
|--|-----------|
| Knowlton, Herbert H.<br>Pacific Ry Extension,<br>San Jose, Costa Rico.   | Alpha '08 |
| Koontz, Kinter Kenneth<br>Shannon Copper Co., Metcalf, Ariz.             | Beta '08  |
| Kratz, Arthur<br>Knights Deep Gold Mine,<br>Germiston, Transvaal.        | Beta '05  |
| Kumke, Charles A.<br>Arizona Commercial Copper Co.,<br>Globe, Arizona.   | Beta '06  |
| Larkin, Arthur Edward<br>Twin City Rapid Transit Co.,<br>St. Paul, Minn. | Alpha '08 |
| Lewis, Wm. Murray<br>Student Colorado School of Mines,<br>Golden, Col.   | Alpha '07 |
| MacKillican, James A.<br>Mich. & Mont. Develop. Co.,<br>Wickes, Mont.    | Beta '06  |
| Marshall, Leo Bowen<br>Guanajuato, Mexico.                               | Beta '07  |
| McRae, Randolph<br>Columbia River Lumber Co., Millside, B. C.            | Alpha '06 |
| Merry, Henry Monroe<br>205 Hawthorne Road, Baltimore, Md.                | Rhom. '07 |
| Menche, Alfred H.<br>Mich. Gen'l. Survey, Houghton, Mich.                | Beta '05  |

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| Miner, Robert I.<br>Minneapolis Paper Co., Minneapolis, Minn.              | Alpha '10 |
| Morgan, George Herbert<br>Youngstown, Ohio.                                | Beta '08  |
| Morwery, Clarence W.<br>Minn. Steel & Mach. Co., Minneapolis, Minn.        | Alpha '07 |
| Morrison, Geo. Adelbert<br>117 Batavia St., Boston, Mass.                  | Rhom. '04 |
| Parkhurst, Frederick S.<br>322 1st St., Niagara Falls, New York            | Beta '04  |
| Perkins, William James<br>Leetonia Mining Co., Leetonia, Minn.             | Beta '07  |
| Phillips, Robert Bailey<br>214 Durango St., El Paso, Tex.                  | Beta '06  |
| Pickard, Byron Oscar<br>Shannon Copper Co., Metcalf, Ariz.                 | Beta '07  |
| Randolph, Geo. Oscar<br>Dept. of Min. & Geol. M. C. M.,<br>Houghton, Mich. | Beta '07  |
| Riggs, Fred<br>323 Co. State St., Princeton, Ind.                          | Beta '10  |
| Riker, Eugene A.<br>Flint, Michigan.                                       | Beta '10  |
| Rose, William A.<br>Oliver Mining Co., Hibbing, Minn.                      | Alpha '06 |
| Schrader, Erick J.<br>Minneapolis Copper Co., Sonora, Mexico.              | Alpha '05 |
| Smith, Alfred Leggart<br>Brotherton Iron Mine Co., Wakefield, Mich.        | Beta '06  |

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| Smith, Clinton B.   | Alpha '05 |
| Capital City Imp. Co., Helena, Mont.                      |           |
| Spring, Willis Ware                                       | Alpha '07 |
| Roberts Heating Co., Minneapolis, Minn.                   |           |
| Staples, Chevalier Bayard                                 | Beta '08  |
| Cranbrook, B. C.  |           |
| Steinback, Harry Phillips                                 | Beta '06  |
| Republic Iron & Steel Co., Virginia, Minn.                |           |
| Strong, John Lawrence                                     | Alpha '08 |
| Oliver Mining Co., Duluth, Minn.                          |           |
| Sweeney, Wilfred Gray                                     | Beta '06  |
| Baxter Spring, Kansas and Lincolnville, Okla.             |           |
| Thoms, James Ezra   | Beta '08  |
| Globe, Ariz.  |           |
| Torbert, James B.   | Beta '07  |
| Cerro De Pasco Mining Co.,<br>Cerro De Pasco, Peru, S. A. |           |
| Trembath, James   | Beta '08  |
| 223 South Lincoln St., Spokane, Wash.                     |           |
| Vinal, Edwin L.   | Alpha '06 |
| U. S. G. S., New Bedford, Mass.                           |           |
| Wagner, John Ezra   | Beta '08  |
| Bodie, Cal.   |           |
| Wanvig, John D., Jr.                                      | Beta '08  |
| Superior & Boston Copper Co.,<br>Globe, Ariz.             |           |
| Weisel, George F.   | Alpha '07 |
| Mann Lumber Co., Henderson, Mont.                         |           |

Wheeler, Walter H.	Alpha '06
Ernst & Crammer Bldg., Denver, Colo.	
Wilkinson, P. H.	Beta '04
Shannon Copper Co., Clifton, Ariz.	
Wing, Homer William	Beta '08
Santa Anna, Cal.	
Woodrich, Oscar F.	Alpha '08
Fuller Construction Co., Chicago, Ill.	
Young, John Winfred	Rhom. '05
Scott Lumber Co., Ashville, N. C.	

#### HONORARY MEMBERS

T. L. Hinckley	Minneapolis, Minn.
H. J. Kesner	Pittsburg, Pa.

