

# THE SIGMA ZETAN



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OUR LADY OF THE LAKE COLLEGE

THE SIGMA ZETAN

Official Organ of SIGMA ZETA

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IN MEMORIAM

Professor Edwin W. Schreiber, 61, former National President of Sigma Zeta, died suddenly of a cerebral hemorrhage at his home on december 17, 1951. Professor Schreiber had been a member of the Mathematics Department at Western Illinois State College, Macomb, Illinois, since 1929, and had been Acting Head of the Department since 1941. He was instrumental in establishing the Kappa Chapter of Sigma Zeta at Western and actively supported the chapter for many years. He served also as National President and Vice President of Sigma Zeta and attended many national meetings of the organization.

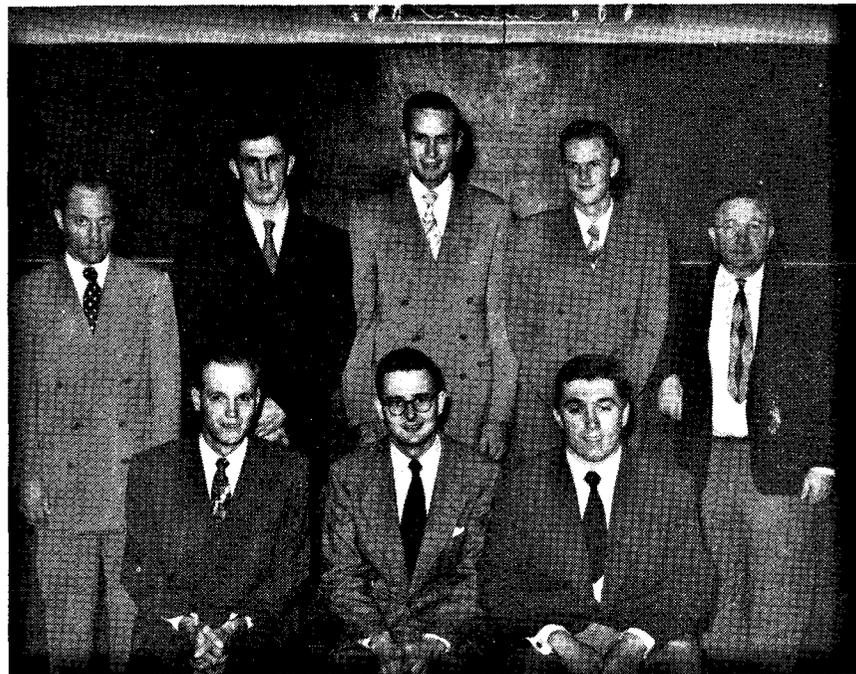
Mr. Schreiber was born in Saginaw, Michigan, and was graduated from the high school of that city. He received the bachelor's degree from the University of Michigan in 1911, and the master's degree from the University of Chicago in 1924. He did graduate work at the University of Michigan during the years of 1927-28 and 1928-29. Before coming to Western, in 1929, Mr. Schreiber taught mathematics in the high schools of Yuma, Arizona, New Castle, Pennsylvania, and Maywood, Illinois. He had always been keenly interested in professional organizations. He was an active member of various national and state associations of mathematics teachers and often served in official capacities in all these organizations.

The passing of Edwin W. Schreiber is a distinct loss to a wide circle of friends and professional associates.

CHI CHAPTER

Our youngest chapter, Chapter Chi at Missouri Valley College was installed on June 1, 1951. The Chapter as installed was composed of

five faculty and eleven student members. The picture shows part of the group.



Seated from left to right are Herbert E. Iles, recorder-treasurer; Fritz D. Schupp, president; and Fred Schweigerdt, vice-president. Those standing from left to right are: Professor Harold E. Affsprung, Gerald R. Kilp, Kenneth E. Waddell, David I. Dautenhahn, and Dr. Ray T. Dufford. Members not in the picture are: Dr. Lawrence C. Thomas, Rosalie C. Kilp, Martha Lamar, Christine Lockridge, George Leuthge and Delmar Fidler.

At the time of this writing the chapter was still in its planning stage. We shall be looking forward to news and activities of the group.

THE POSSIBILITY OF A SULFUR SHORTAGE AND WHAT IS BEING DONE ABOUT IT

By Betty Christopher, Sigma Chapter

(This paper was read at the Collegiate meeting in Austin)

Dec. 7, 1951

Just about a year ago Chemical Industries, that had grown to depend on American Sulfur, were shocked to hear that the life of our large and better known deposits of sulfur was ebbing away, and that a sulfur shortage was imminent. This year prediction has become an

actuality. Quotas to the different industries have been cut and they have been urged to economize in the use of sulfur and to seek other sources of raw material.

Up to 1900 Sicily produced about 90% of the world's supply of sulfur, and America imported many thousands of tons of it each year. About forty-five years ago, the production of Louisiana sulfur by the Frasch process made this country independent of imports; and, with the discovery of Texas sulfur domes a little later, America became a supplier to the rest of the world. Of today's production of 5,000,000 tons or more, Texas ranks first. Besides Italy, outside of the United States, other countries now producing sulfur are Japan, France, Chile, Bolivia, Peru, and several smaller countries.

As far as quantity is concerned, sulfur ranks 15th among the 96-odd elements known to make up the gaseous, liquid, and solid constituents of the earth. But while widely distributed in nature, its tendency to react with other elements is so strong that sulfur is found in the free form only under rather unusual circumstances. Such conditions prevail in volcanic areas and also existed during the formation of certain unique deposits that are now being actively worked in Louisiana and Texas. In addition to these older deposits, a new deposit has been found recently in southern Louisiana in the delta of the Mississippi which, it is estimated, will produce probably over 500,000 tons annually when equipment has been installed, which will probably be late in 1953.

Besides the elemental sulfur occurring in nature there are two main types of sulfur compounds occurring in natural deposits: sulfide ores, such as pyrites, wherein the sulfur is directly combined with one or more metals; and oxidized minerals such as calcium sulfate of gypsum. Immense deposits of these two types of sulfur compounds occur in many parts of the world, but they are by no means fully utilized. Sulfur is so strongly bound in gypsum and other natural sulfates that its recovery requires the expenditure of considerable energy and hence is only economically feasible under special circumstances. On the other hand in roasting metallic sulfides preparatory to smelting, sulfur dioxide is produced, which may be converted into sulfuric acid just as is the case when elemental sulfur is burned. Since sulfide ores constitute our chief sources of copper, lead, and zinc, the vast tonnage of sulfur dioxide which must be driven off in refining these ores represent an immense potential source of sulfuric acid. Elemental sulfur, however, has so many advantages over pyrites and other sulfide ores that the manufacturer prefers to use it even though the price is appreciably higher. Sulfur when burned leaves no ash or residue, and one ton will yield nearly three tons of the acid. On the other hand, a ton of the highest grade of sulfide ore will yield less than one and one-half tons of sulfuric acid and leave a bulky residue equivalent to more than 60% of the weight of the original material. In addition, a sulfuric acid plant designed to burn sulfur is cheaper to construct and operate than one equipped to handle sulfide ores.

Sulfur is also usually present in oil and natural gas as hydrogen sulfide. Until recently much of this hydrogen sulfide was burned or

wasted. Now some of the companies have taken steps to recover this gas and convert it either into elemental sulfur or into sulfuric acid, which they employ in their own refineries. Another concrete example of such recovery will soon be in effect in a 1.3 million dollar plant being constructed by three paper mills in Wyoming. This plant will salvage approximately 100 long tons of sulfur per day from sour gas bought from oil fields in Delaware. The three paper mills will then have the sulfur essential for their paper industry.

Another hope of meeting the sulfur shortage is in using other than sulfuric acid to make superphosphate fertilizers. This problem is tackled seriously both in the United States and in Great Britain. The British Department of Scientific Research has found that a mixture of sulfuric and nitric acids will work. The American Tennessee Valley Authority is exploring possibilities of a mixture of nitric acid with either sulfuric or phosphoric acid. Calcium nitrate is a valuable fertilizer, but it absorbs moisture readily, causing it to cake. Calcium sulfate does not. When a mixture of the two acids is used in a ratio approaching half and half, the sulfate formed seems to protect the nitrate from water absorption. This fact is also borne out by the American Tennessee Valley project. Nitric acid is prepared from the abundant supply of nitrogen in the air by the fixation process converted into the oxide which combines with water forming nitric acid.

All in all the sulfur picture is not too drab, with this new dome discovered recently in Louisiana; and we can reasonably expect that, with the American ingenuity and skill, we will find ways to recover large quantities of this element as a by-product of other industries. It is a pressing problem, however, and it will command the attention of outstanding geologists and chemical engineers.

## HISTORY OF SIGMA CHAPTER OF SIGMA ZETA

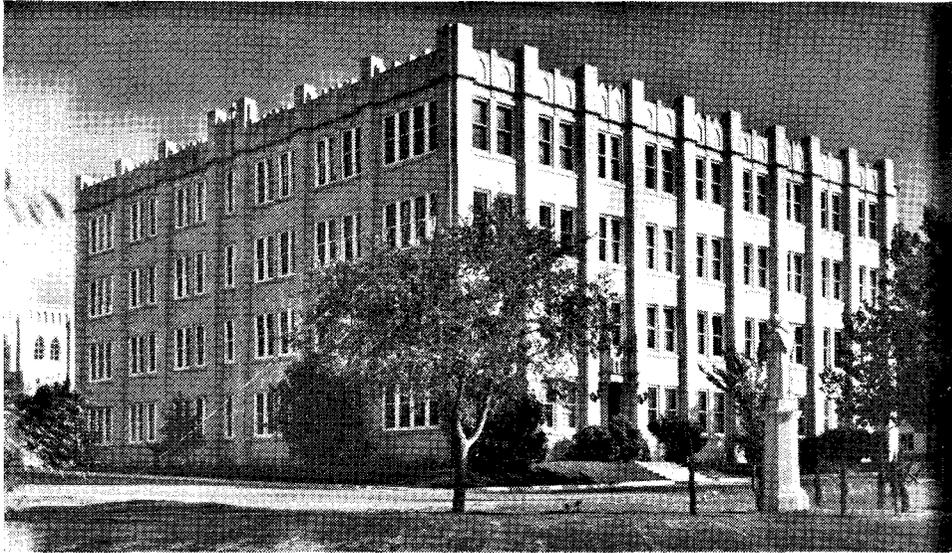
Our Lady of the Lake College, San Antonio, Texas

Sigma Chapter was organized on the campus of Our Lady of the Lake College, San Antonio, Texas, in 1943. Formal installation of the chapter took place on October 23, 1944. Dr. John L. McMahon, President of the college, presided at the installation ceremony as chairman, representing the National Council, and Miss Marguerite Higgins, an alumnae of the college and at present a teacher of civics in one of the local Public High Schools of the city, acted as Recorder. Ten student members and four faculty members composed the charter members. Sigma Zeta was the outgrowth of the Curie Science Club installed on the campus in 1937. It was one of the thirteen charter members of the Collegiate Academy of the Texas Academy of Science organized in 1938.

Our Lady of the Lake College, the home of Sigma Chapter, is a liberal arts college for women with an enrollment of about five hundred students. It is both a resident and day school. Although a college for women, Our Lady of the Lake, has accepted men students in recent years in several

departments such as: Music, Library Science, Social Service and in Graduate Education.

The first unit of the present group of buildings comprising Our Lady of the Lake College was erected in 1896. There are now fifteen buildings



on the campus among them a four story Science Hall, completed in 1937, the Home Management House erected in 1938, which is a practice home for majors in the Home Economics Department. A library and Fine Arts were completed in 1947.

Growth in the material side of the college was paralleled by an equal educational expansion. Our Lady of the Lake College began its career with an eight grade grammar school and a high school department. As early as 1904 a State Normal School was held on its campus during the summer months and this practice was continued until 1911. The courses given in these Normal Schools were of college level and were so recognized by the Catholic University of America in Washington, D.C. as well as by the State Department in Texas. In 1911, Our Lady of the Lake was chartered as a college and empowered to confer degrees.

Our Lady of the Lake College secured membership in the Texas Association of Colleges in 1919, became a member of the Southern Association of Colleges in 1923, and of the Southern Association of Women's Colleges in 1924.

The first president of Our Lady of the Lake College was the Very Rev. H. A. Constantineau, O.M.I. a native of Lowell, Mass. who held this position until his death in 1940, Dr. John L. McMahon was named to succeed him in 1941.

The Library Science Department was approved by the American

Library Association in 1950 and now offers graduate work leading to a Master's degree. The first courses leading to a Certificate in Social Welfare were offered in 1942, and in 1945 the school was granted membership in the American Association of Schools of Social Work. In 1950 the school began offering a two year course leading to a Master's Degree.

To meet the changes in the Educational requirements for teachers in Texas the Department of Education was also established as a Graduate School in 1950 granting Masters Degrees in Education.

### NEWS FROM THE CHAPTERS

**Mu Chapter**  
State Teachers College  
Mankato, Minnesota

Dear Editor:

Mu Chapter is very busy preparing for the National Conclave which is being here this year. Committees have been chosen, plans have been made, and everyone is striving hard to make this year's conclave as successful as those in the past.

This year Mankato State Teachers College inaugurated a "Science Day". The College was host to visiting students from many high schools in southern Minnesota, and had on display many of the facilities, equipment, and apparatus of the various departments in science. Sigma Zeta members helped to demonstrate this equipment and performed many interesting experiments for the students.

In our annual election the officers elected for next year are;  
Master Scientist.....Dan Eustice  
Vice-Master Scientist...Bob Heyer  
Secretary-Treasurer...Dave Sanger  
Editor-Historian

—Leonard Anderson  
Sincerely,  
Joe Kieninger  
Editor-Historian

**Nu Chapter**  
Northern Illinois State Teachers College  
DeKalb, Illinois

Dear Editor:

As this year draws to a close we find that this year we in Nu Chapter have accomplished something. In February we sponsored a dance here and last week we had our annual Jenks Memorial Lecture. Dr. Donald J. Hughes, the speaker, spoke on "Atomic Energy and your Future".

On the 19th of April we are having the Northern District of the Junior Academy of Science here with several high school students exhibiting their projects. Our display committee has kept the display case pretty well filled. We have had chemistry and photography exhibits, and a biology exhibit is in the case at present and will soon be followed by a Home Economics exhibit.

Sincerely,  
Gertrude Hinsch  
Secretary

Beta Chapter  
McKendree College  
Lebanon, Ill.

Dear Editor:

Our Chapter was joined by Barney Barnes at the beginning of the spring semester. He will graduate with a Chemistry major and a Mathematics minor this spring.

The Beta Chapter will enlarge its membership this fall. Dr. Meiser (Math), formerly of Vanderbilt U., and Professor Carter (Physics), a graduate of Washington U., are some of the prospective members who will bring progress and enlightenment to our cherished organization.

Dr. Stowell (Math), Professor Gutekunst (Chemistry), and Professor Fleming (Biology) are the present McKendree faculty members who belong to Sigma Zeta.

Sincerely,  
Fred O. Widicus, Jr.  
Secretary

Chi Chapter  
Missouri Valley College  
Marshall, Missouri

Dear Editor:

This is Chi Chapter's first year. We have had regular meetings, at which several of the members have presented a program. There have been interesting discussions in the fields of geology, physics, and astronomy.

In conjunction with the Science Club, Chi Chapter sponsored an assembly program concerning the effects of liquid air.

On April 18, we are planning to make a tour of the Aluminum Ore Company plant and of the St. Louis University laboratories

in St. Louis. On the following day the members will attend the annual meeting of the College Section of the Missouri Academy of Science at Fontbonne College. At this meeting three of our members will present papers.

The active membership has dropped due to graduation of our original members. We have not initiated any new members this year; however, we hope to add three or more new members next fall.

Sincerely yours,  
Herbert E. Iles  
Recorder-Treasurer

Sigma Chapter  
Our Lady of the Lake College  
San Antonio 7, Texas

Dear Editor:

December 7 and 8 will long be remembered by the twelve members who attended the Annual Meeting of the Collegiate Academy in Austin, Texas. Papers were given by: Betty Behles, whose subject was "A Chemical Calendar for Archeology"; Jane Deason in her paper summed up the history of "Seventy-Five Years of The American Chemical Society"; and Betty Christopher's paper dealt with the much talked of and written about "Sulfur Shortage and What is Being Done about It". All came back very enthusiastic about what they had seen and heard at the meeting.

Miss Onice Feille, first president of Sigma Chapter after its installation on the campus, and now a Laboratory Technician at the Stout-Todd Clinical Laboratory here, gave a very interesting talk at one of our meetings, on the Preparation and Responsibilities

of a Medical Laboratory Technician.

At our January meeting Mary Sullivan a former member who is

at present working in the Aviation Medicine Research Laboratory at Randolph Field, Texas, and who also worked six weeks last summer



Left to right, Mary Agnes Puhalek, Bobbie Estes and Bernadette Spawn. Jeannine Taylor, one of the assistants in the library receives the gift.

at Oakridge Radiation Laboratory spoke to the members about her experience at both places stressing particularly radiation effects.

On January 22, at 8:00 P.M. members of Sigma Chapter were host to the San Antonio Section of the American Chemical Society who held their monthly meeting in the Science Hall of Our Lady of the Lake College. Speaker for the evening was Dr. Alfred Burger, Associate Professor of Chemistry at the University of Virginia. "Medicinal Chemistry Today and Tomorrow" was the subject of his very interesting talk.

On February 11, the Science faculty and students had the opportunity of hearing Dr. Ralph Dorfman, assistant director of the Worcester Foundation, Worcester, Mass., speak on the "Steroid Hormones". The lecture was given at the Santa Rosa Hospital for the benefit of doctors, nurses and students.

Every year members of Sigma Zeta subscribe to a number of Science magazines, such as the Science Digest, Chemistry, Bulletin of the Atomic Scientists and Banta's Greek Exchange. These along with Science Books of current interest are periodically presented to the library. The accompanying picture shows a group in the library with their contribution.

On February 7 the members of the Science Clubs enjoyed a Bunco Party followed by the usual refreshments. At the March meeting, April 26 was decided on for the annual picnic in New Braunfels which terminates the activities for the year.

Sincerely,  
Jane Deason  
Historian

Phi Chapter  
Eureka College  
Eureka, Illinois

Phi chapter has enjoyed a good year in spite of a steady decrease in active membership. At the opening of the autumn term, four active and four associate members returned to the campus. During the year, two of the active members completed graduation requirements; Ralph Frye, a delegate to the Alton conclave and a pre-med student, and Erwin "Red" Dittrich, Phi chairman last year, are both working in the metallurgical laboratory of the Peoria Caterpillar Corporation. Margaret Kepple, a chemistry major, has transferred to Texas Christian University.

John W. Skaggs, student assistant in geology, was chosen chapter chairman for the current year with Professor McClure again serving as recorder-treasurer. During the latter's absence during the first semester, Lloyd Emmert, instructor in psychology and former chapter chairman, served as secretary.

At the autumn initiation, George W. Tressenriter, a physic-math major, was initiated into active membership. At the end of the first semester, Nancy Margaret Wang, a pre-med student from Malang, Java, and Lee Reeseman, of Eureka, qualified for associate membership. This brings to five the number of associate members

and assures the local group of a strong active chapter during the next two years.

Under Skaggs efficient leadership, the chapter functioned smoothly during the school year. Meetings were held on the first and second Tuesday evenings of each month with the latter date reserved for open program sessions. The first program of the year was provided by the faculty sponsors; subsequent programs included student papers and demonstrations as well as the showing of science films.

John Skaggs, whose paper on Indiana and Illinois geodes at the Anderson conclave may be recalled by the delegates, later aided Professor McClure in the preparation of a more extensive report on the Illinois geode area; this report was published as a joint paper in the October, 1951, issue of the Mineralogist magazine. John Clark, an associate member, has been busy with the electrolytic preparation of lithium for a lecture demonstration in chemistry.

The sponsors of Phi have also been busy with professional activities during the year. During the past summer, Professor J. A. Rinker drove to California and Oregon and returned with a large collection of rocks and minerals from the Northwest. This coming summer, he plans to offer a field course and will take a small party of stu-

dents to the volcanic mountains near Mexico City with the return trip being made through the Big Bend region of Texas, a section not too well known geologically.

Mr. Oran C. Myers, mathematics instructor and a Phi sponsor, is on leave for the present semester for work on his doctorate at the university of Illinois. Associate Professor Robert C. Pugh received his Ph.D. last June and has taken Mr. Myers' place on the Phi academic committee.

Dr. L. W. H. Charnock associate professor of biology and another Phi sponsor, is a member of the biological research committee sponsored by the University of Michigan; he gave a comprehensive paper on the progress of amoeba research at the biological regional convention last summer in Minneapolis. He was chairman of the antivivisection legislation of the National Council on Medical Research and also spoke at the annual meeting of the Botanic Drug Club in Chicago.

Professor S. M. McClure, chemistry, has been on leave during the first semester and will again be away from the campus during the fourth term. President Burriss Dickinson, who has been deeply interested in the work of the local chapter, was a member of the trustees' curriculum committee whose recent recommendations provide for expansion in the science curriculum.

Sincerely,  
Ray Harris  
Recorder-Treasurer

