

THE SIGMA ZETAN



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NUMBER 2

OUR LADY OF THE LAKE COLLEGE

THE SIGMA ZETAN
Official Organ of SIGMA ZETA

NATIONAL OFFICERS

National President.....	D. E. MILLER, <i>Xi Chapter</i>
National Vice President.....	LEONARD A. FORD, <i>Mu Chapter</i>
National Recorder-Treasurer.....	GILBERT W. FAUST, <i>Ueta Chapter</i>
National Historian.....	S. M. MCCLURE, <i>Beta Chapter</i>
National Editor.....	SISTER MARY CLARENCE, <i>Sigma Chapter</i>
Past National President.....	W. E. ELLER, <i>Kappa Chapter</i>

DEDICATION

To the Founders of SIGMA ZETA whose interest in the fraternity has remained unchanged since its inception in 1925, this issue of THE SIGMA ZETAN is dedicated.



R. K. CARLETON



J. E. POWELL



E. E. LIST

SIGMA ZETA SCIENCE SOCIETY

By R. K. CARLETON (Alpha)

As I happened to glance at the reverse side of my SIGMA ZETA key the other day and noted thereon the words "Chapter, October 1, 1925", the thought occurred to me to put down on paper my thoughts about the organization.

Little did the three professors and the group of ten or a dozen students at Shurtleff College in Alton, Illinois, at that time, envision the growth and development of the organization that would take place in little more than twenty years. Despite the long years of war Sigma Zeta not only survived (when some similar organizations did not) but is already active and making plans for future expansion. As one of the three founders, let me say that the condition of the organization pleases me very much. Even though I have been located at Rhode Island State College since 1931, I shall always be vitally interested in Sigma Zeta and my association with it was renewed last year through my teaching at Shurtleff College during the Summer session of 1946.

Sigma Zeta Science Society came into being because of a firm conviction on the part of Professor E. E. List, Professor Ellis Powell, and myself that there is definitely a need for an honor organization which would include in its membership students majoring in Science and Mathematics. Our belief has seemed to be justified. For that reason we are presenting to the Society a Founders' Cup which we hope may serve as evidence both of our faith in the sound objectives of the organization and also of our hope that it may serve as an incentive to each chapter to meet the requirements which will be set up for the Cup. The latter will be presented at the forthcoming National Convention this Spring.

Sigma Zeta is listed in Baird's Manual of Fraternities, which, by the way, should be on the reserve shelf of every college library. I look forward to the time when it will be listed in Banta's Greek Exchange which is published four times a year. It's an effective way for the Society to gain useful publicity. Sigma Zeta is achieving a status which should place it on a par with any other honor society.

There is as yet no chapter in New England. I have every reason to feel that there are several schools in this area which might be receptive to chapters of the Society. The chapters which Sigma Zeta has are quite widely distributed. The northern section and the southern sections of the country can boast chapters. Not so, the East and the West—as yet. I have no doubt that chapters will appear in those areas in the future and Sigma Zeta will then become a truly national Honor Society.

As Sigma Zeta approaches a quarter century of existence, all of us who had anything to do with getting it started are very proud of the organization, and stand ready to help in every possible way to insure its future welfare.

The three founders were:

Professor E. E. List, Chm. Biology Dep't., Shurtleff College—1923 to 1946. Since then at Ottawa University, Ottawa, Kansas.

Professor Ellis Powell, Chm. Math. Dep't., Shurtleff College—1924 to 1926. Since then at Michigan State College, Lansing, Michigan.

Professor R. K. Carleton, Chm. Chem. Dep't., Shurtleff College—1923 to 1931. Since then at Rhode Island State College, Kingston, R. I.

MINUTES OF THE EIGHTEENTH ANNUAL CONCLAVE OF SIGMA ZETA

The eighteenth annual Conclave of Sigma Zeta was called to order by President D. E. Miller at 2:05 P. M. Friday, April 18, 1947, in the Association Building of Otterbein College, Westerville, Ohio. Epsilon Chapter was in charge of the arrangements for the meeting. Greetings were extended to the members present by Dr. L. J. Michael, Head of the Science Department, on behalf of Otterbein College. He commented on the appropriateness of holding a national meeting on Otterbein's campus during their centennial year.

The minutes of the previous annual Conclave were approved as read.

Introduction of the delegates at the meeting revealed that the following chapters were represented: BETA, EPSILON, ZETA, NU, and XI.

The reports of the National Historian and the National Recorder-Treasurer were read, and a letter from the National Editor was read in lieu of a report. Copies of the reports are appended to these minutes. A motion to accept the report of the National Recorder-Treasurer was passed.

The report of the special committee on the Founders' Cup was read. A motion to accept the gift of the Founders' Cup and express our thanks to its donors was passed.

The report of the Alumni Committee was read and a motion for its acceptance was passed. Copies of the report of the Ritual Committee were distributed to the delegates. Copies of the reports are appended to these minutes.

Mr. Eller, Kappa Chapter, chairman of the special committee on the name of the organization and on affiliation with a national organization of honor societies, gave an oral report on these matters. He pointed out that our name as shown on the original articles of incorporation is SIGMA ZETA, without any further description: that the name as defined by the constitution is THE ZIGMA ZETA HONORARY SCIENCE SOCIETY; that various other names have been used from time to time. His recommendation was that the name SIGMA ZETA be re-established. Mr. Hanawalt moved that the report be accepted and that the name, SIGMA ZETA, be the official designation. The motion was passed. Mr. Faust moved a recommendation that the constitution be amended to incorporate this change. The motion carried.

In regard to affiliation, Mr. Eller reported that he had had a great deal of difficulty in getting satisfactory replies from the national association of honor societies, but that he would continue efforts to get more information on affiliation. A motion that the report of the committee on affiliation be accepted and that the committee be continued was passed.

At this point the President announced the personnel of the Auditing, Resolutions, and Nominating Committee.

After a brief recess during which the Founders' Cup was unpacked, there was a brief discussion of the report of the Founders' Cup Committee. Mr. Eller moved that the National President and the National Recorder-Treasurer should constitute a committee, along with one other person to be designated by the President, to award the Founders' Cup at this Conclave. The motion was passed.

The next order of business was a discussion of the report of the Ritual Committee. Mr. Gould moved acceptance to the committee's report and the motion was passed. Since there was no question in regard to the "Plan for the Installation of New Chapters," Mr. Voight moved acceptance of this

part of the ritual. The motion carried. Mr. Voight also moved acceptance of the "Initiation Ritual for Student Members" as a basic ritual. The motion was seconded. During the discussion of the motion a question came up as to what would be the fate of rituals now in use, such as the one which Epsilon Chapter was demonstrating to the Conclave later in the afternoon. A motion was passed to table the motion until the next morning in order to permit observation of the Epsilon ritual and comparison of it with the proposed ritual.

The business meeting was adjourned until Saturday morning.

The remainder of the afternoon was devoted to the presentation of Student papers: "Trichinosis and the Patch Test" by Harold Rothermel, Xi Chapter; "Photo-Micrography" by Otho Easterday, Xi Chapter; "The Four Year Nursing Program" by Dorothy Brown, Xi Chapter; and "Multiple Births with Special Reference to Human Twins" by Mary Lou Schar, Epsilon Chapter. Epsilon Chapter then gave a demonstration of its initial ritual.

The dinner meeting in the evening was featured by an address by Dr. M. L. Poole of Ohio State University on "Atomic Structure and the Atom Bomb."

The business meeting was resumed at 8:45 A. M., Saturday, April 19, 1947.

Resuming the discussion of the ritual, it was pointed out that there was no conflict between such a ritual as the one presented by Epsilon and the one presented by the committee. It was recommended that all rituals be revised to include the interpretations presented in the proposed national ritual. Mr. Voight's motion was then removed from the table and passed without dissent. Mr. Faust moved that the Ritual Committee be dissolved. Mr. McClure seconded the motion and it was passed.

A petition for a chapter at the State Teachers College at East Stroudsburg, Pennsylvania, was presented. The position had previously been approved by the National Council. It was announced that the vote on the petition would be taken after the recess.

An hour's recess was taken, during which Dr. Edward S. Thomas, Curator of Natural History, Ohio State Museum, presented an illustrated lecture on "Outdoor Ohio." After the lecture two more student papers were presented: "The Abacus" by Harold Deige, Kappa Chapter; and "Map Delusions and Propaganda" by Ernest Melvin, Kappa Chapter.

On resumption of the business meeting, Mr. McClure moved that the Recorder-Treasurer prepare copy for, and have printed, a small bulletin on the history, and aims of Sigma Zeta. The motion was carried.

The President briefly reviewed some of the discussions of the National Council regarding simplification of the forms for the application for a charter and for the annual report. He also pointed out that a more specific statement on the duties of the National Officers would be useful. None of these items demanded action.

After some discussion regarding the matter of listings in some of the national fraternity journals, Mr. Wertz moved that subscriptions be bought to "Banta's Greek Exchange" and "The Fraternity Month." The motion passed.

A discussion of the financial condition of the organization brought out the fact that the only sources of revenue for Sigma Zeta are Charter Fees and the National Initiation Fees. There are no national dues. It was pointed

out that increased costs, particularly of printing, have placed quite a strain on the treasury. Mr. Gould moved a recommendation that the National initiation fee be increased from \$1.25 to \$2.00 per member. The motion passed. Mr. Wertz moved the recommendation that the Charter Fee be increased from \$10.00 to 25.00. The motion carried.

Three constitutional amendments were then presented. Since there were no dissenting votes, they were declared approved by the majority of the National Council and by the six chapters represented at the Conclave. The Amendments are:

ARTICLE I is changed to read: The name of this organization shall be SIGMA ZETA.

ARTICLE IX, Section 3, is changed to read: The charter fee shall be twenty-five dollars, ten dollars to accompany the petition and fifteen dollars to be paid upon the granting of the charter.

ARTICLE X is changed to read: The initiation fee for each member shall include two dollars, payable to the National Chapter as a national initiation fee.

(Since there are ten active chapters this year, the amendments will be effective upon the approval of one more chapter).

The Recorder-Treasurer announced that the National Council had approved a plan to make stationery and cuts of the key available to the chapters at cost.

A discussion of the 1948 Conclave revealed that a large majority of the members present preferred a meeting on a college campus to any other type. Xi chapter invited the Conclave to the campus of Ball State Teachers College, Muncie, Indiana, for the 1948 meeting, with the provision that if housing is not available, Xi chapter will entertain the Conclave at a State Park. Mr. Eller moved acceptance of Xi's invitation and the motion passed.

Mr. Easterday reported for the Auditing Committee that the Treasurer's books were in order, and moved that the report be accepted. The motion carried.

The vote on the petition of the East Stroudsburg Teachers College indicated all six chapters present approving the petition. (Approval of one more chapter is necessary.)

Mr. F. A. Hanawalt, general chairman of the Conclave, reported that Epsilon chapter would be willing to assume any additional expense beyond the fifty dollars appropriated by the National Council.

The report of the Resolutions Committee was presented by Mr. Boycks, who moved its adoption. The motion was carried. A copy of the report is appended to these minutes.

President Miller announced that the first winner of the Founders' Cup is Epsilon chapter, for its consistently good relations with the National office; for its excellent record as hosts to the National Conclave in 1930, 1934, 1941, and 1947; for the unusual support of its faculty members; and for its high degree of student participation both in chapter affairs and in the Conclave. Mary Lu Keller, President of Epsilon chapter, accepted the award.

Mr. McClure moved that the National President and the National Recorder-Treasurer constitute a permanent committee, along with another member to be selected by them, to make the annual award of the Founders' Cup. The motion was passed.

Mr. Eller presented the following slate of officers as the report of the Nominating Committee:

National President—Donald E. Miller, Xi Chapter

National Vice-President—Chester W. Bennett, Kappa Chapter

National Recorder-Treasurer—Gilbert W. Faust, Zeta Chapter

National Editor—Sister Mary Clarence, Sigma Chapter

National Historian—Standleigh M. McClure, Beta Chapter

Past National President—Walter H. Eller, Kappa Chapter.

The report of the nominating committee was adopted by unanimous vote.

The eighteenth Annual Conclave of Sigma Zeta was adjourned at 12:02 P. M., Saturday, April 19, 1947.

ANNUAL REPORT OF THE NATIONAL RECORDER-TREASURER

The past year in Sigma Zeta has been largely a year of readjustment. Many chapters have found themselves with sufficient numbers to carry a successful program for the first time since 1941. Contact has been established during the year with all chapters except Eta, Theta, Omicron and Rho. The first three of these have been inactive for several years and hope of reviving them is very slight, indeed. Therefore, a recommendation is being made that the charters for these chapters be revoked. The case of Rho chapter needs further investigation. Rho was chartered in 1943 and was active only two years. If it could be *established* during the war years, it can probably be *revived* now. Lambda and Alpha are inactive, but have maintained contact with the National Council.

No innovations have occurred in the office of the National Recorder-Treasurer. Work of the office has been largely routine. A considerable backlog of printing has accumulated, but such jobs were held until after the Conclave to that any changes made this year could be reflected in our printed materials.

The most difficult feature of the National Recorder-Treasurer's job is the matter of keeping contact with the chapters.

The Recorder-Treasurer has given no specific thought to matters of promotion and expansion. Thus far most expansion has resulted from the personal evangelism of a faculty member who has moved to another school and established a new chapter there. In several cases, such chapters have not continued when that person moved again. In other cases such chapters have flourished. Such a method of expansion is not enough. But beyond such rudimentary thoughts no specific approach has been developed.

Permit a personal word, please. It is indeed a pleasure to resume my participation in national conclaves after a five year interval, and particularly after a strange Navy interlude. Uncle Sam accepted my offer of service, but for what useful purposes I have never been able to determine. My grateful appreciation goes to Dr. A. S. Lyness, former National Editor, who acted as National Recorder-Treasurer during my leave. Because of the suddenness of my departure and the unexpected death of T. A. Rogers, former National Recorder-Treasurer, (both events occurred within a two-week period) Dr. Lyness had to assume the burdens of the job without warning. He did Sigma Zeta an admirable service during his stewardship, and deserves a word of thanks from the organization.

Respectfully submitted,
Gilbert W. Faust,
National Recorder-Treasurer.

FINANCIAL REPORT 1946-47

March 29 to July 26, 1946:

RECEIPTS:

Balance on hand, March 29, 1946	\$323.44
Receipts No. 136 to 140 inclusive	81.29

\$404.73

EXPENDITURES:

A. S. Lyness—Conclave expense	30.83
Worzalla Publishing Co.—Sigma Zetans	42.00

72.83

BALANCE ON HAND, July 26, 1946	331.90
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404.75

At this time it was noted that various discrepancies were present in the financial records. A statement on the situation appears in the Cash Book. On July 26, 1946, our bank statement showed an actual balance of \$348.76. July 26, 1946, to April 11, 1947:

RECEIPTS:

Balance on hand, July 26, 1946	348.76
Receipts No. 141 to 162 inclusive	557.15

905.91

EXPENDITURES:

College Shop—for keys	550.00
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Alamo Printing Co.—Sigma Zetans	60.00
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Darlene Morren—Stenographic help	4.80
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Ed. J. Barrett—Corporate report	1.00
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Central State Teachers College,	
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postage and supplies	3.00
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G. W. Faust	5.90
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624.70

BALANCE ON HAND, April 1, 1947	281.21
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905.91**REPORT OF THE NATIONAL EDITOR TO THE ANNUAL CONCLAVE OF SIGMA ZETA, APRIL 1947**

A letter addressed to Dr. D. E. Miller, National President of Sigma Zeta:
Dear Dr. Miller:

I am very sorry to have to inform you that I shall not be able to attend the National Conclave of Sigma Zeta this year, much as I would like to.

Mr. Faust has offered to get the minutes of the meeting and other important business transaction to me for publication in the spring issue of THE SIGMA ZETAN. I am very grateful to him for this service.

We are writing to all the Chapters asking for Chapter news. Would you please remind them at the meeting, if they haven't done so already, to mail their news items right away so that we can go to press around the first of May.

Mr. Carleton has written an article on the organization of Sigma Zeta in 1925. He is still very much interested in Sigma Zeta Society. We have also secured pictures of the three founders to be used in connection with the article.

With best wishes for a very successful meeting, I am,

Sincerely yours, Sister Mary Clarence National Editor

REPORT OF THE NATIONAL HISTORIAN TO THE ANNUAL CONCLAVE OF SIGMA ZETA, APRIL, 1947

Plans for a somewhat comprehensive history of the society of Sigma Zeta were first formulated in the early conclaves of the fraternity. Difficulties in obtaining even approximately correct data, particularly on the early developments of the society, were experienced at the beginning of your present historian's term of office: later some essential records were lost in the Shurtleff College fire, when a good portion of the Alpha chapter files were destroyed.

However, by the time of the 1942 conclave (held at Turkey Run), a considerable amount of material had been assembled and your historian announced plans to present a rough draft of the history the following year if sufficient additional data to adjust conflicting statements on fundamental information could be obtained.

During the war period it proved impossible to obtain enough of this essential information to complete the manuscript in the form contemplated. The illness of your historian during a part of this time also hindered progress on the work. More recently it was suggested that the writing of the history be reorganized and a less detailed account attempted.

Accordingly, the organization of the history has been somewhat altered and work is now under way to prepare an account of the society, based largely but not entirely on the records of the conclaves. Copy of the history on this new basis is now in preparation: last autumn it was planned to finish the rough draft during winter and to present the manuscript for consideration at this (1947) conclave. A series of unfortunate circumstances prevented the completion of the preliminary copy by this time. It is hoped that this material will be finished during the coming year.

The cooperation of the national officers, as well as individuals in the various chapters, has been appreciated and your historian takes this opportunity to thank all who have added in any way in the furthering of the history.

S. M. McClure
National Historian.

REPORT OF THE COMMITTEE ON THE FOUNDER'S CUP TO THE ANNUAL CONCLAVE OF THE SIGMA ZETA, APRIL 1947

The founders of Sigma Zeta, Professors R. K. Carleton, Ellis R. Powell, and E. E. List, agree to furnish a cup to be known as the Founders' Cup to be awarded annually. The founders do not wish to impose unnecessary restrictions on the award, but rather prefer that details be left to the National Council. The following conditions were mentioned in my final letters to Professors Carleton and List, which, if they approve, should be a guide in the formulation of working rules:

1. The award shall be made for one year periods.
2. A chapter may not hold the cup for two successive years.
3. The award shall be made at the annual meeting of the chapter which during the previous year shows greatest progress.
4. The actual scale of points for measuring progress shall be set up by the delegates to the annual meeting. The following are suggested items for this measurement: student participation in the national meeting; student papers published in the SIGMA ZETAN; out-

standing achievements of the chapter on its own campus; number and quality of programs presented at the local meetings, etc.

It is expected that the cup will be ready to be awarded at the 1947 annual meeting.

Respectfully submitted,
P. D. Edwards, Chairman
Committee on the Founders' Cup

REPORT OF THE ALUMNI COMMITTEE TO THE ANNUAL CONCLAVE OF SIGMA ZETA, APRIL 1947

The underlying idea threading this report is that each chapter, rather than the National office, is primarily responsible for its alumni records. Unless the chapter is willing to keep track of its own alumni, and unless desired information is sent in to the National office, the latter is powerless to compile any directory worthy of the name. In this light, the committee offers the following recommendations:

In order to keep its alumni records as complete and up-to-date as possible, each chapter should maintain an alumni committee, containing one faculty member, whose sole duty it is to compile and keep a list of alumni with addresses and occupations as up-to-date as possible.

This alumni committee in doing this should make use of other sources of alumni records in the college, such as:

1. The alumni or publicity office. (The college may maintain a resident permanent secretary to serve the alumni groups in existence.)
2. The placement bureau. (This is a fruitful source, since former students keep a contact with this office as long as they wish help in getting better jobs.)
3. Other offices in the college which maintain contacts with students and clientele.

This alumni committee may circulate a local news letter at least fairly regular intervals to the alumni whose addresses are known. At least once a year, this news letter should contain a list or directory of all contacted alumni with their addresses, occupations, and facts of interest. Reactions to this list should elicit corrections and additions.

SIGMA ZETANS and other communications from the National office may be distributed by this committee to the recently graduated alumni.

The cost, including mailing, of the news letter and the ZIGMA ZETANS may be supported by a nominal alumni fee as well as by a fund maintained by the chapter.

This committee and the chapter as a whole may maintain alumni contacts by any devices at hand. The following are suggested as typical:

1. Annual homecoming and anniversary celebrations of the college may be the occasion for a reception or tea for Sigma Zeta alumni. The chapter may collaborate or combine with other groups or clubs in this.
2. Meetings of scientific societies of State or National scope which are held on the campus are frequently aided or sponsored by the local chapter. Such meetings should be the occasions for inviting all alumni who can come.
3. Science open houses, special meetings, annual picnics, or other special occasions may be attended by visiting alumni.

This alumni committee should, as a matter of course, send in an up-to-date alumni list to the National office once a year.

In order to safeguard and prevent the loss of chapter records, including

alumni records, there should be an agreed upon and permanent place to leave all books and records of all officers and committee chairmen at the end of each school year. This may be in charge of the faculty sponsor of the chapter or of a permanently residing person or committee designated by him.

H. W. Gould (Nu), Chairman
S. J. Stowell (Beta)

REPORT OF THE RITUAL COMMITTEE TO THE ANNUAL CONCLAVE OF SIGMA ZETA, APRIL 1947

Your committee on Ritual presents herewith its report for your consideration. This report is offered in two sections; duplicate copies have been sent by the National President to all active chapters and to each member of the National Council.

The first section of the report presents a plan for the organization of new chapters and includes procedures for the installation of faculty sponsors, the initiation of student charter members, and for the recognition of the petitioning group as an active chapter in the Society of Sigma Zeta.

The second section is an initiation ritual for the student candidates. It was presented in much the same form at the 1942 Conclave and has been modified in accordance with suggestions received from the chapters and National Council members.

Both sections are offered as the unanimous report of your committee.

Respectfully submitted,
Robert L. Shelley
S. M. McClure, Chairman.

REPORT OF THE RESOLUTION COMMITTEE TO THE ANNUAL CONCLAVE OF SIGMA ZETA, APRIL 1947

We, the resolution committee, wish to submit the following resolutions for adoption by this conclave:

Be it hereby resolved that we, the delegates of the 1947 National Conclave of Sigma Zeta, do sincerely thank Epsilon Chapter for inviting us to hold this Conclave on their campus and are deeply appreciative of their efforts in making it a successful one.

Be it hereby resolved that we, the delegates of the 1947 National Conclave of Sigma Zeta, wish to commend Dr. A. S. Lyness for having served as acting National Recorder-Treasurer during the period of military service of National Recorder-Treasurer Gilbert W. Faust, in addition to his service as National Editor; and that we express our appreciation of this service to the society.

Be it hereby resolved that we, the delegates of the 1947 National Conclave of Sigma Zeta, do accept the offers of the founders, Professors E. E. List, E. R. Powell, and R. K. Carleton, of a Founders' Cup to be presented from year to year to an outstanding chapter of our society; and that we hereby convey our gratitude.

The 1947 National Conclave of Sigma Zeta wishes to express its thanks and appreciation of the fine food and service rendered by the ladies of the Evangelical United Brethren Church.

Roberta Gilmore, Kappa
Ed Boycks, Zeta
Robert L. Shelley, Xi

STUDENT PAPERS PRESENTED AT THE NATIONAL CONCLAVE OF SIGMA ZETA APRIL 1947

PHOTO-MICROGRAPHY

By Otho D. Easterday, Xi Chapter, Muncie, Indiana

Photo-micrography, that process of photographing micro-organisms through a microscope, does not require expensive, special, or elaborate equipment. The negatives which are obtained can be made into slides and used for a variety of purposes, such as, projecting pictures of bacteria or chemical compound structures or the negatives may be printed and used as reference in teaching or clarification of special reports.

The equipment necessary and its set-up is rather simple as can be seen in Figure. 1.

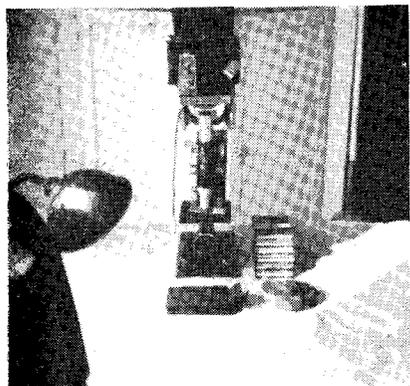


Figure 1

The general theory of the system is photographing what is seen in the microscope. This is accomplished by the correct exposure of the negative. This exposure depends upon the type and intensity of the light emitted by the microscope.

It is desirable to know the film speed of the particular type of film which is being used and the color mean temperature of the light source, particularly, if one is using color film. This will determine if it is necessary to use any filters for conversion.

Once the apparatus is set up and the general theory of the system understood the operation is relatively simple. It is

not necessary to have a special lens or to remove the lens of the camera. The lens of the camera can be focused at some predetermined distance or at infinity, the latter appears to give the best results. After the slide has been placed under the objective lens, the microscope is then focused in either high or low power whichever is desired.

The camera is then placed directly over the microscope at a point just above the eye point which is also known as the Ramsden Disk. When the lens are focused at infinity and the lens aperture is just large enough so as not to cut out any of the field, the system is ready for exposure.

The Ramsden Disk or eye is that point at which the light rays are at the smallest diameter and the intensity is at the greatest. This point is about $\frac{1}{4}$ inches from the eye piece of paper it is very easy to determine the point where the circle is the smallest.

Once the eye point is determined the lens of the camera should be placed at exactly this point or slightly above it. When the camera lens is between the eye point and the microscope, there is created a small amount of distortion. If the camera has a ground glass, it is then easy to sight through the ground glass and center the object in the camera field.

By using a light meter, it is possible to determine the correct exposure immediately. By placing a small cardboard with a small hole over the back of the meter the light meter can be adjusted so that the Ramsden Disk will coincide with the photo-electric cell of the meter. When this is done, the

meter will give the reading of the light being emitted. Then by the usual manipulation of the meter the exposure can be determined. The other way of determining the exposure is by the trial and error method where one tries various exposures and then determine the best one from these.

The following data should be recorded: subject, film, distance setting on the camera, f stop, negative number, film speed, camera speed, type of lamp used, microscope iris, power, and results. From the results it can be determined what future corrections and values should be used in the succeeding photographs.

CALCULATION ON THE ABACUS

By Harold Elwyn Deege, Kappa Chapter, Macomb, Ill.

The abacus is a device used for arithmetical calculations. The first abacus was just a board covered with dust on which numerals were traced. The abacus has been developed much from this first abacus. The dust was replaced by wax and later lines were placed on a board and loose counters were placed on the lines. The counters were later fastened in by means of grooves or rods. The abacus is still used in China, Japan and other far eastern countries. The type used in Japan is called the soroban. The abacus which I have in my possession is a soroban from Sapporo city, Hokkaido island in Japan. The price of this abacus is six and three-fourths yen. At the rate of exchange used by the United States Armed Forces of Japanese and American money it would cost a little over forty-five cents in United States currency.

The abacus which I have is made of wood. There are five counters on the lower division and one in the upper division on each rod. The five counters below are equal to one digit each and one above is equal to five digits. The counters are means of setting down the numbers and doing calculations on them. To add on the abacus the first number is placed on the abacus and the second number is placed on top of this. The next number is then placed on top of the first result. This is continued with calculation in the unit, ten, and other rows as they become full. The process of subtraction just reverse the addition. The multiplication process is performed like we multiply. The simple multiplication is performed mentally and the results added. The division process is merely continued subtraction and keeping count of how many times subtraction is performed. If the operator knows many number combinations the process can be performed much quicker.

Last November in Japan a contest was held between an operator of an American mechanical calculating machine and an operator of a Japanese abacus. The American operator had had four years experience on his machine and the Japanese operator had had seven years special training of the abacus. In the results of the contest the abacus operator won in addition, subtraction and division and also had less mistakes. In multiplication the machine operator won by a small amount. The abacus operator won the nickname of "hands" because of the lightning dexterity in manipulation of the abacus. The abacus operator won not only because he could work his fingers with lightning speed but because he had much training in arithmetic. The simple operations were done mentally by the operator. This does not mean an abacus is a quicker way to do calculations. The average person could not learn to be very efficient on the abacus while with little training on the mechanical machine he might do fair calculations. Business houses in Japan use the abacus but the mechanical machine is replacing it in many places.

TRICHINOSIS AND THE PATCH TEST

By Harold Rothermel, Xi Chapter, Muncie, Indiana

Trichinosis is a disease brought about by eating meat, not well cooked, which is infected with cysts of the parasitic round worm, *Trichinella spiralis* Owen.

When infected meat is ingested, the cyst wall is digested leaving the worms free to mate. Each female produces approximately 10,000 larvae which leave the intestinal mucosa and migrate to various parts of the body. Because the migration of the larvae does not result in specific symptoms, this disease is very difficult to diagnose.

A patch test was first used in 1928 for determining the presence of *Trichinella* by injecting intradermally an antigen prepared from the cysts. Various solutions have been used in extracting the antigen, but all can be classified under two main types:

1. The antigens containing chemicals which were added to act as a preservative or as an aid in extraction of the antigen.
2. The antigens containing a solution of .85% physiological saline used as an extracting fluid.

The purpose of our experiment is to determine the variations, if any, in the results obtained by antigens from these two groups. The first antigen that we used was of the first type commercially prepared. The second antigen is one that we are preparing from infected white rats and is of the second type.

Rats are being used as experimental animals as results obtained from them correlate well with results from human beings.

Two groups of rats are being used: one for test, infected with *Trichinella*, and a second uninfected group, for a control.

After testing both groups with the commercial preparation, the tests were then validated by killing the rats and examining the muscles. The infected rat is now being used to prepare antigen which is to be used on newly infected rats, and also is to be used on a control group in order to verify a negative test.

Although the experiment is not completed, we who have worked with this problem have already been impressed with one idea, which, although not related directly to the experiment, is born out by it. It is: Although the branches of science are studied as though they were independent of one another, one cannot separate them in actual work. The biologist and physiologist have known the habits of *Trichinella spiralis* for about 100 years. However, it wasn't until 1928 that the biologist and physiologist, acting as chemists, made the first large practical steps in diagnosis.

There is no cure for Trichinosis, even though over 2.4% of all people in the United States are going to continue having clinical cases. What scientist, using his knowledge of the other branches of science, is going to find a cure for this dangerous parasite?

The paper entitled MAP DELUSION AND PROPAGANDA by Ernest E. Melvin, Kappa Chapter, was received too late for publication in this issue.—(The Editor).

THE FOUR YEAR NURSING PROGRAM

By Dorothy Brown, Xi Chapter, Muncie, Indiana

Ball State Teachers College and Ball Memorial Hospital, Muncie, Indiana, in 1944 formulated and offered a four year curriculum in Nursing Education. On this course of studies and experience the student is enrolled as a regular student at Ball State Teachers' College for a year of general college subjects. The student then takes three years of nurse's training at Ball Memorial Hospital School of Nursing.

Upon the completion of this entire program requiring approximately forty-three months, the student receives the degree of Bachelor of Science in Nursing Education from Ball State Teachers College. She is a graduate of Ball Memorial Hospital School of Nursing and is eligible to take state board examinations for registration in the State of Indiana.

Ball State Teachers College and Ball Memorial Hospital are on the same campus. They have two separate administrative systems. The fact that this college and its local hospital school of nursing education, leading to a degree, should be of importance to other colleges and schools of nursing in the same city.

The object of the year at Ball State Teachers College is to develop a broad cultural background. The student takes a general course, and not subjects pertaining to nursing. In addition to this, a year of college work gives the student more maturity and enables her to adjust herself to new situations more readily.

Nurses training at Ball Memorial Hospital School of Nursing is comprised of two parts. These are: (1) Class-room instruction and demonstration, and (2) Clinical experience and ward teaching. This school of nursing is accredited by the National League of Nursing Education.

Class room instruction includes one thousand and five hours of class work. Some of these classes are taken at Ball State Teachers College. For these sciences the student nurse receives thirty hours of college credits. All students have Public Health Nursing and Pediatric affiliations. Formerly a Psychiatric affiliation was available to those students who wanted to take it.

In addition to the regular nursing school curriculum, the four year student nurse takes additional classes during her last six months in training. Each student's program is planned in an interview. She is prepared to do what she chooses. Two alternatives are offered: (1) Teaching in a school of nursing, or (2) Supervision or ward management. These last eighteen hours of college work, given by the school of nursing, are what comprises the nursing education courses.

Nursing offers a challenging field to any young woman who is interested in people and science.

Florence Nightingale who founded the first modern school of nursing, said of nursing: "Nursing is an art; and if it is to be made an art requires as exclusive a devotion, as hard a preparation, as any painter's or sculptor's work; for what is the having to do with dead canvas, or cold marble, compared to having to do with the living body—the temple of God's Spirit. It is one of the finest arts; I had almost said, the finest of the Fine Arts."

NEWS FROM THE CHAPTERS

Shurtleff College
Alton, Illinois
April 14, 1947

Sister Mary Clarence
National Editor—Sigma Zeta
Our Lady of the Lake College
San Antonio 7, Texas

Dear Sister Mary:
Many thanks for your letter of the 9th.

I am sorry to say, but there is little of interest that has happened to the Alpha Chapter during the past year.

As you probably know, the Alpha Chapter became inactive during the war, when the college enrollment was so very low; but now, since the enrollment is higher, and since the reorganization of the college, we have hopes of getting started again. I had expected to accomplish this this Spring, but the press of affairs and the teaching loads have precluded this possibility.

However, in the Fall, we definitely plan to get the Alpha Chapter reactivated—so that next year at this time, I will have real news for you.

Very truly yours,

Norman O. Long
Head of the Division of
Natural Science.

Beta Chapter
McKendree College
Lebanon, Illinois

Dear Editor:

The report of the Beta Chapter at McKendree College is very much like our report of last year. We have carried on with a small membership, due to the fact that in spite of increased freshman and sophomore enrollment the number of upper-class majors in science and mathematics is still small. We do not have associate members. In the course of a couple of years the situation should change.

If you will please send us twelve copies of the spring issue of The Sigma Zetan, we will have enough

for our members and for a few alumni who are within easy reach.

Sincerely,
C. J. Sowell,
Recorder-Treasurer

Epsilon Chapter
Otterbein College
Westerville, Ohio

Dear Editor:

The Epsilon Chapter of Sigma Zeta was very happy to have been able to entertain the National Conclave on Otterbein campus April 17-18-19. We had a nice group of delegates from other chapters including members from Kappa, Xi, Zeta, Beta, Nu, and Epsilon chapters.

The Epsilon Chapter is very proud to have received the founders' cup.

We have initiated sixteen new members. We will need about fifty copies of The Sigma Zetan.

Sincerely yours,
Dick Rich,
Recorder-Treasurer

The cup is a large hammer handled trophy inscribed in this way:

Founders' Cup
Presented by
Professors
E. E. List, J. E. Powell and
R. K. Carleton
Who Formed
Sigma Zeta Science Society
at
Shurtleff College
October, 1925

Zeta Chapter of Sigma Zeta
Central State Teachers College
Stevens Point, Wisconsin

Dear Editor:

Zeta Chapter started this year's work with four active members, seven associate members, and five active faculty members. We now have twenty-two active members, five associate members, and five active faculty members. Officers for

the year have been: President, Edmund Kowalski; Vice-president, Patricia Thorpe; Historian, Kathryn Peterson; and Recorder-Treasurer, Robert Burkman.

Zeta Chapter of Sigma Zeta was host to the Wisconsin Junior Academy of Science on March 29, 1947. Edmund Kowalski, president of Zeta Chapter, president, introducing the students who took part. Attending the program were Dr. John Thomson, Madison, president of the Wisconsin Junior Academy of Science, and Prof. L. E. Noland, Madison, president of the Wisconsin Academy of Science, Arts and Letters. Four young scientists from Wisconsin High Schools were selected at the close of demonstrations and talks as winners at this northern district meeting. They qualified to take part in competition with winners in a similar southern district event at a state-wide meeting to be held at Marquette University, Milwaukee, Wisconsin. Subjects used by the winners were: (1) Semi-micro Chemical Methods for the Home Chemist, (2) Radio and Radio Tubes, (3) Anesthetics, (4) The Optiphone in Action. The judges were Dr. A. S. Lyness, Dr. Roland Trytten and Gilbert Faust, all members of Zeta Chapter. Club delegates coming to Central State Teachers College had an opportunity to visit places of scientific interest on the campus with members of Zeta Chapter conducting the tour.

Please send Zeta Chapter thirty-five copies of The Sigma Zetan.

Sincerely yours,
Robert Burkman,
Recorder-Treasurer

Xi Chapter
Ball State Teachers College
Muncie, Indiana

Xi Chapter is pleased to report a membership of seventy-two persons, including faculty, associate and active

members. We also wish to report a year of varied and interesting activities. Mr. Phillip Thomas of the Westinghouse Research Laboratories was on the campus for our November meeting. Dr. H. B. Hass, Head of the Department of Chemistry at Purdue University, was at Ball State for an all school convocation on January 8 and a banquet with Sigma Zeta members that evening. Dr. Hass spoke on the various aspects of atomic fission.

Dr. Robert Featherstone, Ball State Alumnus and former president of Xi Chapter, discussed the subject of Bio-Chemical Research with members of Xi Chapter at a meeting on March 20. Dr. Featherstone is now teaching Pharmacology in the College of Medicine at Iowa State University.

Mr. Frank Wallace, Head of the Division of Entomology of the Indiana Department of Conservation, lectured and showed slides of scenes from Indiana State Parks and countryside to a combined meeting of Xi Chapter and Biology Club on February 27. Mr. Wallace is quite an enthusiastic student of nature and a colorful speaker.

Other activities of Xi Chapter included a field trip to the Delco Remy battery plant here in Muncie and an initiation meeting where sixteen active and five associate members were welcomed. Delco Remy is a division of General Motors and has a very interesting chemical laboratory.

We will be hearing reports on the national meeting from seven student delegates April 24. Election of officers for the year 1947-1948 will also be held at this meeting.

Please send us one hundred copies of The Sigma Zetan.

Yours Truly,
Betty Luenberger,
Secretary.

Kappa Chapter
Western Illinois
State Teachers College
Macomb, Illinois

Dear Editor:

The increased enrollment on our campus this year brought the list of students and faculty eligible for membership to the grand total of twenty-three. Faculty personnel installed were: John S. McVickar, head of the Agriculture Department, Olga Anderson, and Bernard Young, both instructors in the Geography Department. Students taken into the membership of Kappa Chapter are: Herschel Hodges, Virgil Couch, Helen Warmker, Virginia Bradford, Joan Bogren, Dorothy Tipton, Dale Whitman, Arthur Miller, Luan Bown, Betty Stephens, Max Tessier, Dan Fullmer, Elizabeth Turney, Mary Maberry, Elizabeth Wood, Roberta Walters, Harold Deege, Ernest Melvin, Maurice Cameron, and Clarke Griswold.

Our monthly meetings are in charge of students of the various departments. Elizabeth Turney talked on Ions and Homer Sims showed us the different color of Ions when the Chemistry Department presented the program in November. The December program was in charge of the Mathematics Department. Clyde Hubbard worked some fallacious problems, and Luan Brown preceded Harold Deege's demonstration of the abacus with a report on its history. In January, talks by Virgil Couch on map projection, Dan Fullmer on mercator projections, and Ernest Melvin on map delusions and geo-politics, composed the geography department's program. Elizabeth Wood, Mary Jackson, and Betty Ballou presented the February program for the Home Economics department. They talked on research in home economics, housing and nutritional research. Heredity was

the theme of the program given by the biology department in March.

A committee composed of Dorothy Sorrill, Homer Sims, Dr. Tillman and Dr. Ayre studied the local constitution and presented suggestions for revision to our group. After discussion, a review of the accepted constitution was presented and given the group's seal of approval by the regular voting process. Dorothy Millen and Elizabeth Wood are now investigating the matter of printing our revised constitution.

Our Chapter sent two faculty delegates and eight student delegates to the national conclave. A report on this meeting will be made in full to the group at our May meeting. Our Chapter believes that we will need thirty copies of the Sigma Zetan if you can send that many.

Sincerely,

Barbara Sweney,

Secretary-Treasurer,

Mu Chapter
State Teachers College
Mankato, Minnesota

Dear Editor:

After the war years of dormancy, Mu Chapter has again become active. We organized our Chapter early this winter. Our membership now totals twenty. Six faculty members, eleven active members, and three associate student members.

Members of Mu Chapter are to act as ushers for the State Academy of Science meeting to be held at Mankato State on the twenty-sixth of April.

Mu Chapter plans to give the Sigma Zeta Commencement Award again this year.

Sincerely yours,

Ruth Evert,

Editor-Historian

Nu Chapter
DeKalb, Ill.

Dear Editor:

Our Chapter of Sigma Zeta has had interesting meetings this year. One of our students gave an illustrated talk on the country of India. The slides he showed us were taken by him when he was in India during the war. A faculty member also presented interesting material on the climate and scenery of Cuba. As an organization we are sponsoring a campaign to keep our new Science Building and grounds in better condition. This program is being carried on with the cooperation of faculty members. We shall conclude our year's meetings with a picnic and initiation of new members to be held the last day of May.

This last quarter our President Leatrice Banks graduated. As a result our Vice-president, Shirley Samuelson, has taken over her duties. Also upon the resignation of Ursula Mendrys Phelps as secretary, Lorraine Petrie was elected to fill the vacancy. Our Chapter has a membership of about thirty. We are taking into membership this month eighteen associate members and eight active members.

We should appreciate it if you would send us about sixty copies of the Sigma Zetan. I hope this will reach you in time to be placed in the Sigma Zetan. Due to the change of officers your request for this material did not reach me until several days ago.

Sincerely,

Lorraine Petrie,

Secretary.

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

Dear Editor:

Since the fall issue of The Sigma Zetan, members of Sigma Chapter have had a variety of activities. The Yuletide season was opened on Dec-

ember 9, with the annual Christmas Party. The Pledges entertained the members with a musical contest and prizes were awarded to the winners. Christmas carols were sung while awaiting the arrival of Santa Claus, impersonated by one of the active members. After the distribution of gifts, refreshments were enjoyed by all.

All Sigma Zetans and science students attended the second Texas State-wide Chemurgic Conference held in San Antonio on February 13-14. Some topics of discussion were: Ramie; Wool and Mohair; Quickfreezing and Chemurgic By-products; Vitamins from Alfalfa and other Crops; Nuts and Nut Waste Utilization; and the Processing of Sheep Pelts. The latter, a new industry, aroused a great deal of interest. Sheep pelts are tanned, chemically treated to remove all kinks in the wool, dyed and then made into fur coats so real looking that even experts can't tell the difference. Best of all, these furs are within reach of the average person's pocketbook. Displays of the products discussed added greatly to the interest of the listeners.

In an assembly program on March 11, Sigma Chapter presented the McCalls with their five Siberian Samoyedes and one Siberian Husky in an unusual dog show. Included in the show was "Spangle", the world's most versatile trained pony, with a thrilling repertoire of tricks, talking, posing, and pick-outs. Mr. and Mrs. McCall have one of the most outstanding trained animal shows ever brought to the South and Southwest.

During Army Week, Fort Sam Houston held open house. Students as well as the general public were invited. Members of Sigma Zeta and science groups attended. Guides conducted the visitors, in small groups,

thru the various departments. The Dental Department, with its elaborate equipment, was seen first. Here all the work is done on a strictly departmental basis. Other departments visited were: Surgery; Physio Therapy; Rehabilitation; X-Ray; and the Technological Laboratories. In each of these the personnel in charge explained and demonstrated their work.

Saturday noon, April 19, members of Sigma Zeta in conjunction with the Press Club toured to New Braunfels for the annual picnic at the City Park. After the usual outdoor lunch, the party spent the rest of the afternoon swimming, boating, skating, bicycling, and strolling around enjoying the beautiful natural scenery of the park.

A number of science books were presented to the library on May 2 by the Chapter. These books deal with some of the latest developments in science and include the following titles: "*Trace Elements in*

Plants and Animals, Atomic Energy and the Atomic Bomb, Experimental plastics and Synthetic Resins, Scientific Societies in the United States and Atomic Energy in War and Peace.

Being intrigued by a very vivid description of the beauty and stateliness of the Stillingia Tree as given by a member of the Chapter, Helen Hoyo, at one of our monthly meetings, members of the chapter obtained six small trees and planted them on the campus as their last activity of the year. The Stillingia Tree has for many years grown wild along the Gulf Coast. Recent research has brought to light its economic value. The tree produces nuts which contain a valuable drying oil. It is also planted as an ornamental tree which decks itself out in the fall in gorgeous green, yellow, crimson and scarlet tints.

Sincerely yours,
Mary Lou Smith,
Reporter.

