

THE SIGMA ZETAN



Volume XLII

1973-1974

THE SIGMA ZETAN

OFFICIAL ORGAN OF SIGMA ZETA



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OUR NATIONAL PRESIDENT

Sigma Zeta Members,

So you are a member of Sigma Zeta National Honorary Science Society. What does that mean to you? Is it another monthly meeting to attend, another check to write for dues, another committee to serve on, another money-raising project to work at; or does it mean another honor attained, a chance to meet with people sharing common interests in your school, a spur to encourage you to do research, a chance to attend a national meeting, a chance to publish your research? I suggest that many of us in the world today have become so goal oriented that we miss many opportunities that arise on our way. If we can't glean some personal, tangible advantage from every deed we do, job we perform, or organization we belong to, we are not interested. Let's not have that happen to Sigma Zeta.

I believe that progress or success of an organization is extremely difficult to measure. We all have different measuring and evaluating criteria we apply in specified situations. Whether measurable or not, it is assuredly dependent upon the strengths and ambitions of its members.

In the past two years I have issued a challenge of communication. I believe that with the inception of the regional concept our communication efficiency will increase.

I encourage each one of you, whether faculty or student, to keep up with the organization by carefully reading the following pages in this and all future Sigma Zetans.

I would like to express my appreciation to all officers and to all students and faculty who have helped to make the past year successful. Special thanks are in order to the Alpha Gamma Chapter for their efforts at the national meeting.

I look forward to seeing you at the National Meeting in Charleston.

Sincerely,



Roger C. Splinter

PROCEEDINGS OF THE NATIONAL COUNCIL OF SIGMA ZETA

April 5, 1973

The National Council of Sigma Zeta was called to order by National President Roger C. Splinter at 8:05 p.m., in Timken Science Hall, Malone College, Canton, Ohio.

The minutes of the 43rd annual convention were accepted. The interim financial report for the period 1 July 1972 to 31 March 1973 was also accepted. A copy of the annual financial report is appended as an official portion of these minutes.

The Development Fund was again discussed. Professor Dautenhahn suggested that it be used to increase travel funds, with the size of the delegation being a factor in computing the amount. Professor Stephens suggested that the allowance (currently \$100) for convention expenses to the host chapter should be increased. Professor Paschall suggested that an active phone contact might help keep chapters active. Professor Lipely stated that a regional meeting every other year might increase chapter contact. Professor Splinter re-proposed a regional division.

In summary, these possibilities have been proposed:

1. A quarterly news letter
2. A scholarship or research grant
3. Convention travel allowance
4. Financial aid for the convention
5. Promotion of more direct contact between chapters
6. Implementation of a regional concept

It was decided to go ahead with the design of an enamelled key which could be included with a \$6.00 initiation fee.

The 1974 convention was set for Alpha Omicron Chapter, Baptist College at Charleston, Charleston, South Carolina. The 1975 convention (fiftieth anniversary of the founding of Sigma Zeta) will be at Psi Chapter, Central Missouri State University, Warrensburg, Missouri.

It was announced that Nu Chapter had become inactive and had sent in a check for their treasury balance, \$187.72. A motion passed to hold

these funds in escrow for a year to see whether the chapter might be reactivated.

It was announced that the National Council had approved the charter application of Annhurst College, Woodstock, Connecticut.

Eight honor award nominees and two honorary memberships were approved. The names are listed in the convention minutes.

Convention committees were named. The names of the student and faculty delegates appointed are listed in the convention minutes.

A resolution was passed to wish Professor Jim Drenan, National Editor, a full and speedy recovery from his recent illness.

Professor Paschall noted that two former national officers were recently deceased: P. D. Edwards and Floy Hurlburt, both from Xi Chapter.

It was moved to appoint Professor Marvin Stephens associate editor to collect materials for the **Sigma Zetan**, and to help the National Editor in any way possible.

The meeting adjourned at 10:18 p.m.

Present at the meeting:

Clarence Chesnutt (Alpha Omicron)

Kenneth Cook (Upsilon—National Recorder-Treasurer)

Van Daniel (Alpha Xi)

David Dautenhahn (Chi—National Historian)

Duane Deal (Xi)

Wayne Edwards (Alpha Xi)

Wayne Ehler (Anne Arundel Associate)

Tom Jeffries (Alpha Beta)

Glenn Lipely (Alpha Gamma—National Vice President)

Marie Mayo (Upsilon)

Homer Paschall (Xi—Past National President)

Jack Seager (Anne Arundel Associate)

Joe Snoble (Psi)

Roger Splinter (Psi—National President)

Marvin Stephens (Alpha Gamma)

MINUTES OF THE FORTY-FOURTH ANNUAL CONVENTION OF SIGMA ZETA — 5, 6, 7 APRIL 1973

The forty-fourth annual convention of Sigma Zeta Honorary Science Society was called to order by National President Roger C. Splinter at 8:35 a.m. in the Performing Arts Hall, Malone College, Canton, Ohio. Alpha Gamma Chapter President Eric Zurcher welcomed the delegates and introduced Dr. Dale S. Thomson, chairman of the division of science and mathematics. Dr. Thomson gave a brief review of the history of Malone College and officially welcomed the convention. President Splinter responded for Sigma Zeta.

President Splinter opened the business meeting by introducing the national officers present. His brief presidential message centered on the importance of communication and interaction—perennial problems among the scattered chapters of Sigma Zeta. The minutes of the forty-third convention were approved. The interim financial report was approved.

The six ideas for use of the Development Fund were placed before the convention:

1. A quarterly news letter
2. A scholarship or research grant
3. Convention travel allowance
4. Financial aid for the convention
5. Promotion of more direct contact between chapters
6. Implementation of a regional concept

The possibility of obtaining an enamelled key to include with a \$6.00 membership fee was introduced. A motion was made and passed to this effect.

It was announced that Nu and Alpha Alpha Chapters were inactive. The national banner was on display, and it was noted that chapters could order these.

Professor Splinter announced the following committee members:

Founders Cup Committee—Roger C. Splinter (Psi), Kenneth E. Cook (Upsilon), Nancy Barrow (Psi), Betsy Brown (Alpha Omicron), and Tim Bricker (Alpha Gamma).

Auditing Committee—Wayne Ehler (Anne Arundel Associate) Fred Fleming (Beta), Bill Davis (Chi), Chris Evans (Alpha Xi), and Curtis Garrett (Xi).

Resolutions Committee—Clarence Chesnutt (Alpha Omicron), Tom Jeffries (Alpha Beta), Karen Brungard (Lambda), Cherrie Smith (Anne Arundel Associate), and Gary Stanko (Kappa).

Nominating Committee—Marie Mayo (Upsilon), Homer Paschall (Xi), Don Hughes (Alpha Omicron), Pat Walter (Chi), and Mike Wooldridge (Pi).

The 1974 meeting site at Charleston and the 1975 meeting site at Warrensburg were announced, along with a tentative 1977 site at Anne Arundel Community College, Arnold, Maryland.

Chapters were urged to send in reports to the Editor. Professor Dautenhahn announced that he had a scrapbook of previous conventions on display.

The business meeting adjourned at 9:30.

The following papers were introduced by Eric Zurcher:

Karen R. Brungard (Lambda)—The Influence of Protamine Zinc Insulin on the Saline Intake of Adrenalectomized and Intact Rats

Gary Jesses and Milton A. Ellison (Alpha Xi)—The City Metric

Christian Madsen (Alpha Gamma)—A Beginning Study of the Kinetics and Mechanism of the Reaction Between Triphenylphosphine and Tetrathionate

Laura Stuetzer (Psi)—The Effect of Sample Collection on Lactate Measurements in Whole Blood

Frank P. Lyngar (Chi)—D(Dog)/D(Rabbit) (The Pursuit Curve)

Jim Vascik (Pi)—Background Mannich Condensations of Four-Substituted Resorcinols, I

Bob Sindelar (Pi)—Mannich Condensations of Four-Substituted Resorcinols, II

Dennis Mammana (Epsilon)—Planetarium Show

During the afternoon, there were field trips to Babcock and Wilcox Research Center and to Stark Wilderness Center.

The Friday evening banquet opened with Charles Ropp, vice president of Alpha Gamma Chapter, presenting an honorary membership in Sigma Zeta to Congressman Ralph S. Regula. Congressman Regula had another engagement and could not stay for dinner, but he expressed appreciation to Sigma Zeta.

Professor Dale Ritter gave the invocation, and then a bountiful buffet dinner was thoroughly enjoyed.

Professor Lipely presented Honor Awards to:

Nancy Barrow (Psi)

Frank Lyngar (Chi)

Dennis Mammana (Epsilon)

Deborah Nixon (Alpha Pi)

Patricia J. Rice (Lambda)

D. Glen Squires (Alpha Beta)

Sr. Susan Welsby (Alpha Delta)

Michael Wooldridge (Pi)

Charles Ropp presented an honorary membership to Dr. H. Vasken Aposhian, Professor of Cell Biology and Pharmacology, University of Maryland. Professor Aposhian then addressed the convention on the subject of Gene Therapy.

The second session of the convention was called to order by National President Splinter at 8:30 a.m. Saturday morning. The following papers were introduced by Eric Zurcher and Charles Robinson, presiding in parallel sessions:

J. Timothy Bricker (Alpha Gamma)—A Structural Analysis of Porcine Hemoglobin Following Chronic Ingestion of Sr90

William M. Davis II (Chi)—Information Retrieval System for a Small College Through a Time Sharing System Using the ETB (Extended Basic) Language

Rodney S. Ford (Chi)—Camfollower: A Reciprocating Engine Simulator

Kay Dibble (Xi)—Search for Macromolecular Contaminants in Penicillin

Douglas R. Kenney (Psi)—Determination of Stalling Speeds of *Passer domesticus*, *Colinus virginianus*, and *Columba livia* Due to Their Body Loading Characteristics

Jan Marie Hardwick (Kappa) — Bacterial Insecticides

Tom D. Salyer (Alpha Xi)—Host Nutrition and the Induction of Leaf Tumors by *Agrobacterium Tumefaciens*

Steve Fermi (Xi)—An Analysis of Secchi Disk Readings in Relation to Temperature at Selected Sites on Lake Michigan

Douglas Jack White (Alpha Gamma)—Determination of Rat Lung Pathology Following Long Term Exposure to Low Levels of Nitrogen Dioxide

Nancy Barrow and Cathy White (Psi)—Effects of Ovariectomy and Estradiol Administration on the Estrus Cycle of a Rat

Elizabeth Anne Brown (Alpha Omicron)—Some Marine Bacteria

The business meeting was called to order by Professor Splinter at 10:45 a.m. Professor Seager, who retired from teaching this year, challenged the group to keep the Society strong by keeping the chapters alive. He urged members to maintain high standards.

A motion was passed which set up three regions, with the make-up to be determined by the National President with the approval of the National Council. The division selected was: West—Illinois, Kansas, Minnesota, Missouri, South Dakota, Texas, and Wisconsin; Central—Indiana, Kentucky, Michigan, and Ohio; East—Connecticut, Georgia, Maryland, Massachusetts, Pennsylvania, South Carolina, Tennessee, and Virginia. A motion was passed to elect one student delegate and one faculty delegate from each region to one-year terms as coordinators. It was recommended that the faculty members be national officers if they were in the regions.

A motion to use $\frac{3}{4}$ of the Development Fund interest to fund the regions and $\frac{1}{4}$ to fund a national newsletter was defeated.

A motion passed to use $\frac{3}{4}$ of the Development Fund interest to fund the regions and to reinvest $\frac{1}{4}$. This was the entire interest from the Development Fund and the general fund in the savings account. This total is currently running just over \$50 a quarter.

A motion passed to elect the regional coordinators at the National Convention and to invite the student delegates to the National Council meetings to improve communication.

Lambda Chapter extended a tentative invitation for the 1976 convention. The roll call of chapters showed 15 chapters and 108 delegates registered.

Nancy Barrow presented the Founders Cup to winning chapters Chi and Alpha Xi—a tie for the first time in Sigma Zeta history.

Bill Davis presented the Auditing Committee's report that the books were in order. A motion passed to accept their report.

Cherrie Smith presented the following report from the Resolutions Committee. The report was approved.

The Resolutions Committee, on behalf of all the visiting chapters, wishes to thank our host chapter for their fine hospitality and care in arranging the 44th convention of the Sigma Zeta National Chapter and to express our gratitude to President Roger Splinter for being a fine entertainer and go-between. We hereby express our deep regrets on the passing of P. D. Edwards (39-40) and Floy Hurlburt (53-54) who contributed much to Sigma Zeta. We especially express our concern and sympathy for Jim Drenan who is now severely ill and we wish to extend our well wishes. We would now like to resolve that this National Chapter of Sigma Zeta keep Jim Drenan informed of all Sigma Zeta activities in the future, also.

The report of the nominating committee was presented by Mike Woolbridge:

Past President: Roger C. Splinter

President: Glenn E. Lipely

Vice President: Clarence Chesnutt

Recorder-Treasurer: Kenneth E. Cook

Historian: David I. Dautenhahn

Editor: James W. Drenan

From the floor, Roger C. Splinter was nominated for President and Homer D. Paschall was nominated for Past President. The vote was 7-6 in favor of Roger C. Splinter for President and Homer D. Paschall for Past President, with the other nominees elected.

The meeting was adjourned at 12:20 p.m.

Regional coordinators elected for 1973-74 were:

West — Tim Morgan (Psi) and David Dautenhahn (Chi)

Central — Eric Zurcher (Alpha Gamma) and Homer Paschall (Xi)

East — Don Hughes (Alpha Omicron) and Clarence Chesnutt (Alpha Omicron)

Respectfully submitted,

Kenneth E. Cook
National Recorder-Treasurer

REGISTRANTS

Beta

Carol Bopp
Fred A. Fleming
Hal Gray
Danett Utz

Epsilon

Dennis Mammana
Patrice Perry

Kappa

Jan Marie Hardwick
Gary Stanko

Lambda

Karen Brungard
Michael Grabko
Charles Shades
Roger Stager
Phil Swartz

Xi

Duane E. Deal
Kay Dibble
Steve Fermi
Curtis W. Garrett
Homer D. Paschall

Pi

John M. Bailey
Neil M. Baird
Robert D. Sindelar
James Vascik
Michael Wooldridge

Upsilon

Kenneth Cook
Tim Hobbs
Marie Mayo
Paul Steinberg

Chi

David Dautenhahn
Bill Davis
Alice Johnson
Terry Kendrick
Frank Lyngar
William Thompson
Patrick Walter

Psi

Elaine Aholt
Nancy Barrow
Belinda Dickinson
Jim Jenkins
Doug Kenney
Tim Morgan
Tom Salyer
Mary K. Serrone
Joseph J. Snoble
Roger Splinter
Kathie Ward

Alpha Beta

Marcus Christerson
Thomas Jeffries
Patricia Miller
Ronnie Morrison
Ricky Rowe
David Squires
Nancy Wise

Alpha Gamma

Bev Battles
Tim Bricker
Mary Colestock
George Darr
A. W. Fritz
Clark Hoopes
Dave Hykes
R. G. Johnson
Glenn Lipely
Christian Madsen
Becky Masten
Ignatius Meimaris
Phyllis Meshel
Jean A. Nisbet
Robert A. Nisbet
Millard B. Niver
Joyce Oney
Frank Raymond
Dale Ritter
Charles Robinson
Charles Ropp, Jr.
W. Scharsu
John Sionakides

Marvin W. Stevens
Phillip Teague
D. S. Thomson
Marty Vaughan
Wayne Waggoner
Jack White
Merv Yoder
Eric Zurcher

Alpha Epsilon

Donald Chilgreen
Raymon Elliott
Dan Mosher
Steven A. Smith
Peggy Stanley

Anne Arundel Associate

Marge Blunk
C. W. Ehler
Eric A. Fountain, Jr.
Harlan Ray III
Cdr. Jack Seager
Cherrie Smith

Alpha Xi

Annette Branham
James S. Cox
Van Daniel
Charles Denny
Wayne Edwards
Milton Ellison
Chris Evans
Gary F. Jessee
Royce Mullins
Laverne Stallard

Alpha Omicron

Betsy Brown
Clarence Chesnutt
Donald Hughes
Beth Linder

Guests at Dinner

H. Vasken Aposhian
Cathy Lipely
Ralph Regula
Janet Sell

SIGMA ZETA HONORARY SCIENCE SOCIETY

Financial Report — July 1, 1972 - June 30, 1973

Membership fees: Active (+Faculty)

Gamma 11	\$ 55.00
Delta 31	156.00
Epsilon 43	240.00
Kappa 26	130.00
Lambda 21 (7)	105.00
Xi 71 (2)	355.00
Pi 18	94.00
Rho 7	35.00
Sigma 7	35.00
Tau 14	70.00
Upsilon 27 (1)	140.00
Phi 4 (4)	20.00
Chi 10	52.00
Psi 23	115.00
Alpha Beta 8	40.00
Alpha Gamma 10 (3)	50.00
Alpha Delta 7 (1)	35.00
Alpha Epsilon 11 (1)	55.00
Alpha Zeta 36	180.00
Anne Arundel 13 (6)	65.00
Alpha Theta 13	60.00
Alpha Iota 30	150.00
Alpha Kappa 27	135.00
Alpha Lambda 13 (3)	65.00
Alpha Mu 15	75.00
Alpha Xi 19 (1)	95.00
Alpha Omicron 3	15.00
Alpha Pi 4 (1)	20.00
Alpha Rho 11 (1)	60.00
Alpha Sigma 7	35.00
Totals 540 (31)	\$2737.00

Jewelry Sales:

Gamma	\$ 68.64
Kappa	22.31
Lambda	68.52
Xi	79.75
Alpha Zeta	12.29
Anne Arundel	58.48
Alpha Omicron	15.00
Alpha Sigma	154.39
	<hr/>
	\$ 479.38

Stationery Sales:

Lambda	\$ 1.06
Xi	5.50
	<hr/>
	\$ 6.56

Miscellaneous:

Annhurst College (Alpha Tau) charter fee	\$ 35.00
To close Nu chapter account	187.72
Check No. 307 voided	67.00
	<hr/>

Total Receipts

\$3512.66

Disbursements

Jewelry	\$1493.35
Convention Travel	728.00
Sigma Zetan	615.77
Officer Travel	317.14
Office Expenses	286.89
Convention Expense	200.00
Charters	132.84
Banner	99.95
Regional Expenses	36.70
Refunds	10.00
	<hr/>
	\$3920.64

SUMMARY

Balance on hand, July 1, 1972	\$3645.23
Receipts as above	\$3512.66
Total cash	\$7157.89
Disbursements as above	\$3920.64
Balance on hand, June 30, 1973	\$3237.25
Balance in checking account	\$1237.25
Balance in savings account	\$2000.00
Balance on hand, June 30, 1973	\$3237.25

SIGMA ZETA DEVELOPMENT FUND

Balance on hand, July 1, 1972	\$1809.88
Interest, September 30, 1972	52.43
Interest, December 31, 1972	53.15
Interest, March 30, 1973	53.88
Gift, April 7, 1973	2.00
Interest, June 30, 1973	54.64
Balance on hand, June 30, 1973	\$2025.98

ABSTRACTS OF STUDENT PAPERS

INFLUENCE OF PROTAMINE ZINC INSULIN ON THE SALINE INTAKE OF ADRENALECTOMIZED AND INTACT RATS

By Karen R. Brungard, Lambda

Compensatory salt (sodium chloride) intake resulting from adrenalectomy or adrenal dysfunction is a well-documented phenomenon. Although this "specific hunger for salt" has been described in many species of animals, including man, the receptor mechanism which triggers the sodium appetite is still unknown. Most explanations proposed assume that the receptors involved are excited by extracellular sodium loss. Evidence for a receptor differentially sensitive to extracellular sodium loss is equivocal. Instead of a sodium-sensitive receptor, the authors propose a receptor excited by intracellular potassium loss which is secondary to extracellular sodium depletion. The hypothesis was tested by observing the effect of insulin on salt-water (saline) consumption by sodium-replete and sodium-deplete rats. The technique took advantage of the action of insulin which is to promote movement of potassium ions (along with glucose and water) from the extracellular to the intracellular fluid compartment.

Administration of protamine zinc insulin created a significant difference in 1.5% saline solution intake between adrenalectomized and intact male Wistar rats. NaCl solution intake in adrenalectomized rats given insulin injections was consistently reduced from pretreatment levels to levels resembling saline intake in non-adrenalectomized, untreated rats. Injections of insulin in intact rats raised the NaCl intake slightly, and significantly raised total fluid intake.

Relative suppression of saline intake by sodium depleted rats by insulin supports the notion that the "specific hunger for salt" is triggered by action of receptors sensitive to intracellular potassium loss. This conclusion must remain tentative until further research is completed.

THE CITY METRIC

By Gary Jessee and Milton Ellison, Alpha Xi

We are examining the application of distance measure to a restrictive travel space. In the country, a nonrestrictive travel space (i.e. R2), there are no obstacles to travel. However, the city is a space in which we have restrictions to travel (i.e. R2 — the city blocks).

We examine various geometric concepts in relation to this restrictive travel space. Through illustrations and examples, we show that our usual geometry yields unusual results. In following city streets, the shortest distance between two points, a straight line, may lose its uniqueness and can take on unfamiliar shapes. This result is used by taxi drivers in planning their shortest routes.

A circle is the set of all points equidistant from a given point. This definition can be used in the city in assigning beats to policemen, locating fire houses, and in establishing police precincts. The unusual thing about these city circles is that they take a shape usually associated with a square.

Locating all the points equidistant from a point and a line might be used in a city in deciding which houses' water lines will be connected to a water main and which houses will be served by a pumping station. This is an application of the locus definition of a parabola. However, in the city a parabola does not take the usual curvature, but instead is wedge-shaped.

As our society becomes more urbanized, in planning and servicing a city these unfamiliar geometric forms must be taken into consideration.

THE EFFECT OF SAMPLE COLLECTION ON LACTATE MEASUREMENTS IN WHOLE BLOOD

By Laura Stuetzer, Psi

In the clinical laboratory, the measurement of lactic acid is valuable in cases of metabolic acidosis. Enzymatic procedures for this factor require the preparation of a protein-free filtrate using perchloric acid at the bedside. This procedure is necessary since otherwise lactate continues to be formed in a blood sample after its removal from the

body. Filtrate preparation at the bedside is an awkward procedure for normal hospital routine. Lactic acid determinations would be more common if it were possible to collect the same with anticoagulant and delay the filtrate preparations until returning to the laboratory. The purpose of this study was to determine the effect of anticoagulants and delay in filtrate preparations on lactate levels.

Two different anticoagulants were used. Three different filtrate delay times were used. The lactate levels were determined enzymatically using the Boehringer-Mannheim kit for lactates.

The results showed that time delays of 15 minutes and 1 hour gave no significant change in lactate levels over immediate determination. The two anticoagulants did not interfere with lactate measurements.

D(DOG)/D(RABBIT) (THE PURSUIT CURVE)

By Frank P. Lyngar, Chi

It is the purpose of this paper to present a brief development of the pursuit curve and illustrate the idea with a rather ridiculous example (namely that of a dog chasing a rabbit).

In nonsensical terms, a terse description of the problem follows. Let it be assumed there exists a typical Missouri rabbit which moves with a constant speed always keeping its nose pointed towards the rabbit. In a more mathematical sense, the tangent to the curve the dog follows will always intercept the position of the rabbit as it travels along the x-axis. The curved path the hound follows under these conditions is referred to as a pursuit curve.

After a rather lengthy development the pursuit equation is:

$$X = \frac{C_1 \gamma^{G+1}}{2(G+1)} - \frac{\gamma^{1-G}}{2 C_1 (1-G)} + C_2$$

C1, C2, and G are defined according to initial conditions.

Using United Computing System's time-sharing operation, the pursuit

curve was described, plotted, and simulated for two examples: 1) a dog chasing a rabbit and 2) an instantly heat-seeking interceptor missile pursuing an ICBM.

Much can be done with the pursuit curve. Rather than having the ICBM follow a horizontal path (along the x-axis), an oblique trajectory which simulates real-life situations could be considered. Another possibility concerns the pursuit in a Gemini rendezvous and docking procedure. The command module, with radar, tracks and intercepts the Agena docking vehicle as it travels an elliptical orbit about the earth. Both these examples merit further study and consideration.

MANNICH CONDENSATIONS OF 4-SUBSTITUTED RESORCINOLS

By Robert D. Sindelar, Pi

Mannich Condensations of 4-substituted resorcinols with formaldehyde and secondary amines were carried out with the hope of obtaining 6-dialkylaminomethyl-4-substituted resorcinols. Reaction conditions were varied including the order of reactant addition, temperature, pH, and mole ratios.

Only 2-substituted products, except 2,6-dialkylaminomethyl-4-chlororesorcinols, were secured. IR and NMR data were used to serve as proof of structure.

The unpredicted substitution pattern was believed to be due to the effect of hydrogen bonding in establishing the predominate resonance forms. In the case of strongly intramolecular H-bonded substances, the predominant resonance form had one of the aromatic double bonds between the carbon atoms attached to the H-bonded atoms. If this were so, only 2-substitution would be possible. This agreed with experimental results. However, with non-intramolecular H-bonding in 4-chlororesorcinol, this resonance form did not predominate, and thus bis compounds were obtained.

These compounds are important in that some have shown anticancer activity in small animals and are currently being further investigated.

A STRUCTURAL ANALYSIS OF PORCINE HEMOGLOBIN AFTER CHRONIC INGESTION OF STRONTIUM 90

By Timothy Bricker, Alpha Gamma

Hemoglobin solutions were prepared from erythrocytes of Henford miniature swine which had ingested 125 or 250 micro Ci or 90Sr since

birth. The hemolysates were compared with those of control swine with respect to visible and UV spectra, mylar electrophoresis, alkali denaturation, and fingerprint analysis.

INFORMATION RETRIEVAL SYSTEM FOR A SMALL COLLEGE TIME SHARING SYSTEM USING ETB (EXTENDED BASIC) LANGUAGE

By William Davis II, Chi

Our purpose is to develop a system of computer programs enabling a small college to computerize its files, so that in a few minutes it could print out the transcript of any student or group of students. The problems involved included security (student grades are highly confidential), updating each semester, and storage. There is a maximum length to an ETB program, so a system of programs is necessary.

DETERMINATION OF RAT LUNG PATHOLOGY FOLLOWING LONG-TERM EXPOSURE TO LOW LEVELS OF NO2

By Douglas Jack White, Alpha Gamma

The caustic effects of NO2 on rat lung tissue were determined at 1 and at 17 parts/million. The major results in each case were large lesions and hemorrhaging at the bronchi and the large bronchioles. The proposed mechanism involves reaction of NO2 with H2O to give HNO3 and HNO2. The lowered PH may cause protein degradation and membrane breakdown. This gives bacteria a foothold and large lesions result.

ESTIMATION OF STALLING SPEEDS OF PASSER DOMESTICUS, COLINUS VIRGINIANUS, AND COLUMBIA LIVIA

By Douglas R. Kenney, Psi

The stalling speeds of birds can be theoretically determined by use of the body and wing loading characteristics of each species. Body and wing loadings are determined in weight per unit area. A plani-

meter was used to find areas of the bird's wings and body. Slot and flap characteristics were also considered.

A general aeronautics formula was then used to calculate stalling speeds with *Passer domesticus* being the lowest. This means that sparrows do not have to beat their wings as often to maintain speed as do pigeons or quail. Two stalling speeds were calculated for each species, one based on body areas and one on wing areas only. The bird's body, excluding the wings, is thought to aid the bird in lifting capacity. Values obtained were relative.

HOST NUTRITION AND THE INDUCTION OF LEAF TUMORS

BY *AGROBACTERIUM TUMEFACIENS*

By Tom D. Salyer, Alpha Xi

A bioassay relating infectivity to primary leaves of *Phaseolus vulgaris* L. ("pinto") by *Agrobacterium tumefaciens* to physiological variables of the host plant is described. The assay is rapid and practical. The assay was used to study the effects of nitrogen, calcium, phosphorus, and potassium deprivation upon the tendency of the leaves to form tumors.

EFFECTS OF OVARIECTOMY AND OF ESTRADIOL ADMINISTRATION ON THE ESTRUS CYCLE OF A RAT

By Nancy Barrow and Cathy White, Psi

The female rat goes through a 5 day estrus cycle. The purpose of this experiment was to determine what effect ovariectomy and treatment with estradiol would have on the stage of the estrus cycle exhibited.

Vaginal smears were used to determine the stage of the estrus cycle daily for one week before ovariectomy. After ovariectomy the rats received no hormone treatment and the vaginal smears were continued. Two days before termination one rat received daily injections of .1 mg estradiol. Upon sacrifice the weight of the uterus and other organs were noted.

Since the ovary is the source of the female sex hormone which produces

variations in the vagina and uterus, ovariectomy caused the vagina to remain in the stage of the estrus cycle that it was in during the operation. If this stage happened to be estrus, which is characterized by maximum growth in the vagina, it could not be maintained. The uterus of the untreated ovariectomized rat weighed less than that of a normal rat. The rat treated with estradiol went into the estrus stage and maintained it. The uterus of this rat weighed much more than normal due to the accumulation of water and electrolytes. The estradiol produced no significant change in the weight of the other organs.

SOME MARINE BACTERIA

By Elizabeth Anne Brown, Alpha Omicron

The bacterial population of a ten gallon sample of sea water was studied over a six month period. The salinity, B.O.D., pH, and temperature were found to be factors which restricted and stabilized the population.

Direct microscopic observation showed only rod-shaped, gram-negative bacteria, occurring either singly or in chains. Colonial growths observed on all media varied in size, shape, and color. Specific colonies were tested and identified as *Thiobacillus neopolitanus*, *Pseudomonas marinoglutinosa*, *Pseudomonas calcis*, and *Achromobacter aquamarinus*.

BACTERIAL INSECTICIDES

By Jan Marie Hardwick, Kappa

Bacillus sphaericus has been found to be effective in killing mosquito larvae, *Culex pipiens* var. *Quinquefasciatus*. It is a Gram negative, rod-shaped, spore-forming bacteria, and has vitamin and amino acid requirements (biotin, thiamin, methionine, lysine, isoleucine, and valine).

In order to accumulate a large enough quantity of bacteria to inoculate several hundred larvae for testing purposes, an inoculant build-up is necessary. A roller tube containing 5 ml. of Brain-Heart Infusion broth plus vitamins is inoculated from a slant which is 48 hours old (30°C, rolled 6-8 hours). From this culture a 2% solution is prepared. The flask is placed in a shaker at 30°C for approximately 15 hours. This final culture is used to inoculate the mosquito larvae at dilutions of 1/100,

1/1000, 1/10,000, 1/100,000, 1/1 million, 1/10 million. That dilution which was found to be lethal to 90% of the larvae present is 1/400,000.

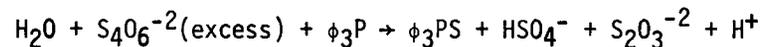
A mixture of *B. sphaericus* and *B. alveoli* was also prepared. The toxin produced by *B. sphaericus* is believed to be a protein found within the cell or perhaps part of the cell wall structure. The toxin produced by *B. alveoli* is known to be soluble. It diffuses out of the cell and is found in the supernatant. The supernatant of both bacteria can pass through the filter. It is a combination of *B. sphaericus* cells and *B. alveoli* supernatant which significantly increased the toxicity of the bacterial culture.

Bacterial insecticides are very specific and easily degradable. This particular bacterial insecticides is still several years away from the market, but it will definitely be an aid in fighting the pollution of chemical insecticides.

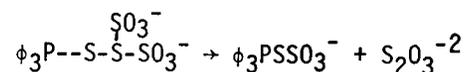
A BEGINNING STUDY OF THE KINETICS AND MECHANISM OF THE REACTION BETWEEN TRIPHENYLPHOSPHINE AND TETRATHIONATE

By Christian Madsen, Alpha Gamma

The reaction between potassium tetrathionate and triphenylphosphine was found to be first order in both reactants. The still tentative reaction is:



The tentative mechanism for the nucleophilic attack of triphenylphosphine on tetrathionate is:



The rate equation for this reaction is $R=k(\text{S}_4\text{O}_6^{-2})(\phi_3\text{P})$ with k approximately 44 liters/mole second at 20.4°C and an ionic strength of 0.075 molal. More work is needed to better establish this value.

SEARCH FOR MACROMOLECULAR CONTAMINANTS IN PENICILLIN

By Kay Dibble, Xi

An allergy creates an antibody-antigen response in the body. A common allergy is penicillin allergy. Penicillin by itself does not act as an antigen due to its low molecular weight. If penicillin were to combine with itself and have a large molecular weight, it would cause an allergic response. Penicillin was dialyzed by passing a penicillin solution through a hollow fiber device. The device let any molecule less than 5,000 molecular weight diffuse into the fiber section. Any molecule over 5,000 molecular weight stayed in the beaker. All solutions (from the beaker and the fibers) were lyophilized. Analyses were run on the recovered material to check for the presence of penicillin and for a penicillin polymer over 5,000 molecular weight.

A SEARCH FOR SOME RELATIONSHIP BETWEEN SECCHI DISC TRANSPARENCY AND WATER TEMPERATURE

By Steve Fermi, Xi

Data collected from 1970-1973 at Lake Michigan by graduate students from Ball State University were analyzed to determine whether any relationship existed between temperature and secchi disc transparency.

The first analysis undertaken was to correlate mean temperature for each station and sampling date with the secchi disc transparency (water clarity) for that temperature. The secchi disc readings for all instances where the temperature was the same were then averaged, thus giving one average secchi disc reading for each temperature from 14° to 22°C. This was done in order to determine if any direct relationship between temperature and secchi disc existed. No relationship was found.

Next, due to literature findings that zooplankton aggregate at temperature interfaces, the data for 1971 were analyzed to see whether the existence of a thermocline affected the clarity of the water. No major relationship was found. However, indications were found that temperature change is related to secchi disc change for the 1970 data.

Work is being continued to elaborate on the one relationship found, and to see whether or not any additional relationships exist.

FOUNDERS CUP AWARDS

Each year a committee of the National Convention selects the chapter whose activities during the year have been most outstanding. This is often a difficult task for the committee, and this year it was especially so. Committee members must consider the relative sizes of the chapters, their previous histories, and the tendencies of some correspondents to exaggerate slightly because of pride in their chapters. The committee this year found two chapters so outstanding that it was unable to decide between them, so for the first time in its history Sigma Zeta has two Founders Cup winners for the year. One is an older chapter (Chi) with a long record of activity, which this year was even better than usual. The other was a new chapter (Alpha Xi) which in just two years has become one of our busiest and most productive chapters. The activities of the two chapters are summarized in their respective chapter reports. Our congratulations to Chi and to Alpha Xi.



Alpha Xi members introduce area high school students to the computer at their second annual Math-Science Competition.



Chi chapter members on their trip to Houston where they visited the Space Center and the Astrodome.

EPSILON (1929) — Otterbein College, Westerville, Ohio 43081

Dr. Rexford Ogle and Professor Roger Wiley, Advisors

	1972-73	1973-74
President	Patrice Perry	Robert W. Timson
Vice President	Mary Ann Ricard	Robert Hutson, III
Secretary	Susan Schuster	Sharon L. Kauffman
Treasurer	Jane Leiby	John F. Vickers

Epsilon assisted with the Central Ohio Regional Science Fair; student members served as judges and hosts. An extensive public relations program with local high school and campus groups was accomplished through a series of planetarium shows developed by Douglas Mammana. He also presented one at the National Convention. 43 new members were elected.

ZETA (1929) — Wisconsin State University, Stevens Point, Wisconsin 54481

Professor Harry Smith, Advisor

No report was received from this chapter.

KAPPA (1936) — Western Illinois University, Macomb, Illinois 61455

Professors Gerald White and G. L. Barrett, Advisors

	1972-73	1973-74
President	Jan Marie Hardwick	Alice Scott
Vice President	Michael Doherty	Walter Dawkins
Secretary	Rosemary Reip	Dennis Lubbs
Treasurer	Gary Stanko	Robert Johnston

Twenty-six new members were activated by the chapter. Two members attended the National Convention. Jan Hardwick presented a paper to the convention.

LAMBDA (1938) — Mansfield State College, Mansfield, Pa. 16933

Drs. George Mullen and Manley Powell, Advisors

	1972-73	1973-74
President	Karen Brungard	Roger Stager
Vice President	Patricia Rice	Phil Swartz
Secretary	Vicki Booth, Pat Rice	Tom Taylor, John Swanson
Treasurer	Susan Willow	Charles Shades

Members acted as tour guides for Grant Science Center during the year. Twice each month films were presented for the campus community. Lambda established recycling centers for paper and glass at various places on the campus. Members took part in a water sampling project for the county. The chapter is affiliated with the Environmental Alert Newswork established by the Smithsonian Institution.

Monthly seminars were held, led by faculty or students. Twenty-one students and seven faculty joined the chapter. Five members attended the National Convention. There, Karen Brungard was one of the speakers.

MU (1937) — Mankato State College, Mankato, Minnesota 56001

This chapter is apparently still temporarily inactive.

XI (1938) — Ball State University, Muncie, Indiana 47306

Drs. Homer Paschall and Duane Deal, Advisors

	1972-73	1973-74
President	Steve Fermi	Vickie L. Renforth
Vice President	Curtis Garrett	Gerald Levin
Secretary	Carole Parker	Donna Amick
Treasurer	Anita Scott	Sally Cain

Xi opened the year with a picnic. At succeeding meetings Dr. Larry Ganion talked about oceanography, Dr. Wagner about Vitamin C, Dr. Avila about mathematics teaching, and Dr. Branam about chemotherapy and leukemia. Duane Deal showed slides taken while on leave in Australia and New Zealand. At the March meeting four students—David Stout, Bill Groves, Steve Fermi and Kay Dibble—presented paper summarizing their research.

Chapter members assisted at the regional science fair. They also mailed 600 letters to alumni requesting funds for their Sigma Zeta Undergraduate Research Fund. Funds collected last year were used to make grants to Mr. Fermi and Mr. Stout.

Xi inducted 42 new members. Five members attended the National Convention, where Kay Dibble and Steve Fermi presented papers.

PI (1943) — Millikin University, Decatur, Illinois 62522

Drs. Neil Baird and Jim Drenan, Advisors

	1972-73	1973-74
President	Mike Wooldridge	Steve Korbet
Vice President	Warren Jeseck	Steve Vanstrom
Secretary	Janet Rodeffer	Debbie Keller
Treasurer	Richard Felshaw	Warren Jeseck

The first meeting of the year was held to make plans for the year. Dr. Drenan outlined the history and potentials of Pi Chapter and introduced the officers to potential members present.

Succeeding monthly meetings featured speakers including Mr. Nelson Lovelace, a local expert on insecticides and their application in pest control, Dr. Carl Weatherbee, who discussed the synthesis and testing for carcinogenic properties of the Weatherbee nitrogen mustards, and Dean Malcolm Forbes, who recounted his impressions and experiences on a recent trip to India.

December featured a drive to get blood donors for Sharon Gerdt, a chapter member seriously injured in an auto accident. Members also collected money to help pay her expenses.

At the spring initiation, fourteen new members were welcomed into the chapter. Four members attended the National Convention at Malone College. Bob Sindelar and Jim Vasick presented papers dealing with Mannich condensations of 4-substituted resorcinols. Another member, Mike Wooldridge, was presented with a Sigma Zeta Honor Award.

Further meetings included a report on the convention and a picnic at the home of Advisor Neil Baird. At this meeting, officers for next year were chosen. Also elected were program chairman Janet Rodeffer and regional coordinator Nancy Ebbert.

RHO (1943) — Indiana Central College, Indianapolis, Indiana 46227

Dr. Edward Vondrak, Advisor

	1972-73	1973-74
President	Norman Beets	Greg Dietz
Vice President	Dean Felker	Bryan Chamberlain
Sec. Treasurer	Sue Dumm	Rita Huffman

Rho Chapter held monthly meetings with the Science Club which it

sponsors, with speakers and movies. Chapter members assisted with the Central Indiana Regional Science Fair. Seven new members were initiated into the Chapter.

SIGMA (1944) — Our Lady of the Lake College, San Antonio, Texas 78207

The chapter inducted seven initiates.

TAU (1944) — East Stroudsburg State College, East Stroudsburg, Pa. 18360

Professor David Kern, Advisor

	1972-73	1973-74
President	Dennis Erb	Frank Romano
Vice President	Diane Bofinger	Robert Curtolo
Sec. Treasurer	Maureen Hofsaes	Deborah Clappison

The chapter's efforts to increase their membership culminated in the initiation of 14 members at a May banquet.

UPSILON (1948) — Anderson College, Anderson, Indiana 46011

Dr. Charles Miller, Advisor

27 members were initiated into Upsilon Chapter during the year. Four members attended the National Convention.

PHI (1948) — Eureka College, Eureka, Illinois 61530

Professor George Vlahos, Advisor

Four students and four faculty joined Phi Chapter this year.

CHI (1951) — Missouri Valley College, Marshall, Missouri 65340

Professors David Dautenhahn and C. E. Leslie, Advisor

	1972-73	1973-74
President	William David	Gail O'Neill
Vice President	Rodney Ford	Pat Walter
Sec. Treasurer	Diana Elliott	Alice Johnson

Chi had a very busy year. They participated in the Homecoming Parade and picked corn missed by the harvester. Student papers were presented in November and December. During the January interim, eight Sigma Zeta members participated in a course given by Professors Leslie and Dautenhahn. The course, Mathematics of Space Exploration, involved films, student reports, and a trip to the Manned Spacecraft Center at Houston.

In February the speaker was Ted Phillips, authority on physical traces after reported UFO landings. Next came a computer workshop for area high school students. In May the chapter sponsored a booth in the annual charity carnival and held their spring picnic.

Nine new members were inducted into the chapter. Seven members attended the National Convention, at which three of them—Rodney Ford, Frank Lyngar, and Bill Davis—presented papers. The chapter's achievements were recognized at the convention where it shared the Founders Cup award with Alpha Xi Chapter.

PSI (1956)—Central Missouri State College, Warrensburg, Mo. 64093

Drs. Roger Splinter and Joseph Snoble, Advisors

	1972-73	1973-74
President	Mark Hansen	Doug Kenney
Vice President	Janice Huhmann	Belinda Dickinson
Secretary	Cynthia Whithaus	Mary Serrone
Treasurer	Nancy Barrow	Alex Pettigrew
Historian	Elaine Aholt	Jim Jenkins

After its fall picnic, Psi participated in the school carnival and the Homecoming Parade. They decorated the Science Hall at Christmas and made money selling cookies and handbooks. One meeting looked at new directions in science fiction.

Eight students attended the National Convention, at which Nancy Barrow, Doug Kenney, and Belinda Dickinson (for Laura Stuetzer) presented papers.

At the annual spring banquet Nancy Barrow received her Sigma Zeta Honor Award pin. Several members of Chi Chapter attended the banquet; Psi members plan to reciprocate next year.

Psi inducted 23 new members during the year.

OMEGA (1961)—Frostburg State College, Frostburg, Maryland 21532

Drs. Paul Hunt and Arthur Olah, Advisors

No report was received from this chapter.

ALPHA BETA (1963)—Campbellsville College, Campbellsville, Ky. 42718

Miss Beatrice Evans, Advisor

Eight new members were initiated into the chapter. Seven members attended the National Convention. D. Glen Squires was approved for the Sigma Zeta Honor Award by the convention.

ALPHA GAMMA (1969)—Malone College, Canton, Ohio 44709

Professors Glen Lipely and Marvin Stephens, Advisors

	1972-73	1973-74
President	Eric Zurcher	
Vice President	Charles Ropp	
Secretary	Marty Vaughan	
Treasurer	J. Timothy Bricker	

Eight students and three faculty became members of the chapter. In addition to its regular program, Alpha Gamma was busy preparing for the National Convention. As all who attended will testify, the members did a tremendous job as hosts to the convention. Papers were presented to the convention by three chapter members: Christian Madson, J. Timothy Bricker, and Douglas J. White. The chapter continued its interest and activities in the ecology problem.

ALPHA DELTA (1969)—Kansas Newman College, Wichita, Kansas 62713

Srs. Therese Wetta and Remigia Kerschen, Advisors

	1972-73	1973-74
President	Larry Hund	Jean Clithero
Vice President	Sr. Susan Welsby	Rodney Klausmeyer
Sec. Treasurer	Joan Palsmeier	Linda Burnside

The chapter held meetings every two weeks. Among the speakers were Dr. Paul Tasch (geology), Sr. Gertrude Bauman (fossils), and Professor

Dennis Schmidt (mathematics). Alpha Delta members acted as hosts for the Kansas Association of Biology Teachers in October and for the annual High School Science Day in March; climax of the latter was a Science Bowl in which twenty schools participated. The chapter also sponsored Red Cross blood drives in the fall and spring.

On March 30-31, the chapter acted as co-sponsors of an Environmental Conference at which several nationally known speakers were present, as well as representatives of local industries.

Field trips included a fossil hunt and a tour of the Vulcan Chemical plant. The chapter obtained a permanent display board for the Science Hall and made possible several planetarium showings to the campus community.

Sr. Susan Welsby completed an honors project in mathematics and Jean Clithero was awarded a Scholastikon Grant for academic excellence and college leadership. She studied the extraction and identification of chlorinated insecticides from natural tributaries.

Alpha Delta selected seven students and one faculty as new members.

ALPHA EPSILON (1969) — Marion College, Marion, Indiana 46952

Drs. Robert Werking and Raymon Elliott, Advisors

	1972-73	1973-74
President	Darrell Hermann	Dan Mosher
Vice President		Peg Stanley
Sec. Treasurer	Ron Benbow	Janet Jones

Eleven students and one faculty were made new members of the chapter. Five members attended the National Convention.

ALPHA ETA (1969) — Olivet College, Olivet, Michigan 49076

Mrs. Elaine W. Becker, Advisor

	1972-73	1973-74
President	Norm Thomas	Edith Rosenthaler
Vice President	Larry Michaels	Scott Cobel
Secretary	Teresa Graves	Janice Hatfield
Treasurer	Teresa Graves	Lloyd Holm

Several members travelled to Nova Scotia to view the eclipse of the

sun. Two members earned college credit for their study of ground currents. Biology students made several trips to the nearby Audubon Reserve.

ALPHA ZETA (1969) — Indiana State University, Terre Haute, Ind. 47809

Drs. Laurence Kunes and Robert Howe, Advisors

	1972-73	1973-74
President	John DeCoursey	Danny Hogg
Vice President	Karen Giroud	Mitzy Schwindel
Sec. Treasurer	Terry Bishop	Janet Martin
Pledge Trainer	David Newell	Diane Vermillion

At the formal pledge meeting Dr. John Hooke (Astronomy) talked about the universe. Members served as guides for the regional Science Fair. An April meeting was conducted by the pledges. Then 36 pledges were initiated into the chapter.

ALPHA THETA (1970) — Asbury College, Wilmore, Kentucky 40390

Dr. C. B. Hamann and Professor Lloyd Davis, Advisors

	1972-73
President	Charles Hildebrand
Vice President	Jack Moon
Secretary	Peggy McCue
Treasurer	Phyllis Cavendar

Thirteen new members were inducted into Alpha Theta.

ALPHA IOTA (1970) — University of Wisconsin-La Cross, La Cross, Wis. 54601

Dr. Allen Nelson and Professor Larry Nutter, Advisors

	1972-73	1973-74
President	Rudolph Roskos	Louise Cheng
Vice President	Bonnie Baathemer	Jeffrey Nielson
Sec. Treasurer	Leah Richter	Ann Wildenberg
Historian	Margaret Stoxen	Edna Spangler

The chapter heard two speakers, one on cardiac rehabilitation and the other on the role of physical therapists. Thirty new members were inducted into the chapter.

ALPHA KAPPA (1970) — Indiana State University, Evansville, Ind. 47712

Dr. Melvin Denner, Advisor

	1972-73	1973-74
President	Imogene Schmitt	Tom Cornils
Vice President	Tom Butler	Mike Neimeyer
Sec. Treasurer	Vicki Herrington	Darice McIntosh

At its annual initiation 27 new members were taken into the chapter.

ANNE ARUNDEL (1970) — Anne Arundel Community College, Arnold, Md. 21012

C. Wayne Ehler, Advisor

	1972-73	1973-74
President	Eric Fountain	
Vice President	Cherrie Smith	
Sec. Treasurer	Kim Kimball	

Trips were taken to the McCormick Spice Company (Baltimore), the Air Route Traffic Control Center (Leesburg, Va.), the Remington Wildlife Refuge (Chestertown, Md.) and the Hershey Chocolate Company. Six members attended the National Convention.

Thirteen students and six faculty members were initiated into the chapter.

ALPHA LAMBDA (1970) — Suffolk University, Boston, Mass. 02114

Dr. Maria Bonaventura, Mr. Buckingham and Mr. Gillis, Advisors

	1972-73	1973-74
President	Brian Lightbody	William Probst
Vice President	Denise Runge	Marianne Sterite
Secretary	Dr. Bonaventura	Dr. Bonaventura
Treasurer	Dr. Beatrice Snow	Mr. Buckingham

Chapter members offered to help freshmen who were having trouble with science courses. They acted as co-sponsors for an address by Dr. Roy Green (Harvard) on "Population Problems and Fertility Control."

At their annual banquet Dr. Francis Moore discussed the ethical implications of transplanting. Ten students and three faculty were made active members. Three alumni were chosen as honorary members.

ILLINOIS CENTRAL (1970) — Illinois Central College, East Peoria, Ill. 61611

R. S. Dunham and Stan Rose, Advisors.

No report was received from this chapter.

ALPHA MU (1971) — Immaculata College, Immaculata, Pennsylvania 19345

Sister Maria Socorro, Advisor

	1972-73	1973-74
President	Ruth Rizzo	Madeline Jackson
Vice President	Lucille Grabowski	Patricia Simpson
Secretary	Anne Marie Capista	Veronica O'Donnell
Treasurer	Barbara Knauss	Margaret Gill

In November the chapter initiated 15 new members. It offered tutorial help in science or math to anyone needing it. It cooperated in organizing and running the Science Bowl for high schools in the area.

Members heard a talk by Dr. Paul Pickar on lasers, and in conjunction with the theme "Ethics in Science," sponsored a film "The Gift of Life/The Right to Die," as well as an address by Dr. Goff (Villanova) on genetic engineering and medical ethics.

ALPHA NU (1971) — Oglethorpe College, Atlanta, Georgia 30319

Dr. Thomas Key, Advisor

No report was received from this chapter.

ALPHA XI (1971) — Clinch Valley College, Wise, Virginia 24293

Professors George Culbertson, Van Daniel and Wayne Edwards, Advisors

	1972-73	1973-74
President	Jewell Yates	Laverne Stallard
Vice President	Buford Eldridge	Merenda Mullins
Secretary	Vicki Galloway	Charlene Shortt
Treasurer	Judy Dickenson	Charlene Shortt

Alpha Xi was named co-winner of the Founders Cup for its activities. These included a fall cookout for new members, acting as guides for the Southwest Virginia Math Teachers' Conference and for the regional Science Fair.

The chapter sponsored its second annual Math-Science Competition, in which 23 area high schools took part. Drs. Culbertson and Daniel held a computer workshop for the high school teachers who attended. Among the awards was a permanent scholarship established in the name of Sigma Zeta.

The chapter participated in a "Green Day" during which they planted trees and flowers on campus. A total of twenty new members were inducted during fall and spring ceremonies. Ten members attended the National Convention; Tom Salyer, Gary Jesses, and Milton Ellison presented papers at the convention.

ALPHA OMICRON (1971) — Baptist College, Charleston, S. Carolina 29411

Drs. Clarence Chesnutt and Fred Worthy, Advisors

	1972-73
President	Kathryn Glenn
Vice President	Donald Hughes
Sec. Treasurer	Robert Heatley

Alpha Omicron initiated three new members. Four members attended the National Convention, at which Elizabeth Ann Brown talked about marine bacteria.

ALPHA PI (1972) — Trevecca Nazarene College, Nashville, Tenn. 37210

Professor John Dix, Advisor

	1972-73	1973-74
President	Deborah Nixon	Beth Greathouse
Vice President	Lamar Bradley	Kevin Beard
Secretary	Diane Gabriel	Linda Stover
Treasurer	Diane Gabriel	Diane Gabriel

Alpha Pi heard talks by Milton Nixon (State Department of Education), Dr. Robert Martin (Tennessee Tech), and Mr. Van Damme, a glassblower from V.P.I. Members also took field trips to Dyre Observatory (Nashville) and to the Space Museum in Huntsville, Alabama.

The chapter initiated four students and one faculty as new members.

ALPHA RHO (1972) — Stonehill College, North Easton, Mass. 02356

Eleven students and one faculty member were inducted into the chapter.

ALPHA SIGMA (1972) — Dakota Wesleyan University, Mitchell, S.D. 57301

No report was received from this chapter.

ALPHA TAU (1973) — Annhurst College, Woodstock, Connecticut 06281

Sister Christine Morvan, Advisor

A new chapter is to be installed at Annhurst College this fall. Details will be given in the next issue of the journal.

THE EDITOR COMMENTS

For the first time in fifteen years your editor was unable to attend the National Convention, and had very little to do with the meetings of the local chapter. Lying in a hospital bed, I had ample time to reflect on Sigma Zeta and its affairs.

First, I was amazed at how well Sigma Zeta got along without me. Through the efforts of co-advisor Neil Baird and its dedicated officers, Pi Chapter was just as active this year as it has been in the past. The National Convention somehow proceeded smoothly in spite of my absence. Chapters turned in reports for this journal without badgering from me.

I would like at this time to thank Professor Marvin Stephens (Alpha Gamma) for his help in collecting materials for our journal. I must express appreciation for the continued assistance of Ken Cook with this and many past issues of the Sigma Zetan.

I was happy to see the National Convention make efforts to deal with the communication problems which beset our society as it grows. Hopefully the regional representatives will be able to visit with or talk on the telephone to every chapter, so that every Sigma Zetan will realize he is a member not only of a local chapter but also of a national society. A few chapters occasionally hold joint meetings. It would be desirable for others to do so. If there is a chapter within 100 miles of yours, why not meet together once a year? If there is a college nearby without a Sigma Zeta chapter, why not try to interest its students in forming one?

I was encouraged by signs that students are interested in playing a bigger role in Sigma Zeta. If the organization is to grow in size or in influence, it can only do so with student help. You students are more aware of changing needs and of outmoded habits than are most of the faculty. Let us know how we are failing or missing the boat. If you want to change national procedures, get in touch with a few other chapters so that your proposals may win support at the National Convention.

What did the editor miss most? Contacts with students of Pi Chapter although many of them visited me. The opportunity to renew old friendships and to make new ones at the National Convention. Being able to learn what other chapters are doing, and how they are trying to meet the problems each chapter faces at times—indifference, competition with other organizations for your limited time, charges of lack of relevance. And being encouraged each year by seeing how some chapters are overcoming these obstacles.